



MINISTRY OF EDUCATION
GHANA ASSOCIATION OF
HEALTH, PHYSICAL EDUCATION,
RECREATION, DANCE AND SPORTS



Physical Education and Health (Core)

for Senior High School

Year 2



Albert Sackey
John Benedict Nyarko

MINISTRY OF EDUCATION
**GHANA ASSOCIATION OF HEALTH,
PHYSICAL EDUCATION, RECREATION,
DANCE AND SPORTS**

Physical Education and Health (Core)

for Senior High Schools



Albert Sackey

John Benedict Nyarko



Ghana Education
Service (GES)





© Ministry of Education 2025

This publication is not for sale. All rights reserved. No part of this publication may be reproduced without prior written permission from the Ministry of Education, Ghana.

ISBN:

Contents

FOREWORD	VI
SECTION 1 INDIVIDUAL AND TEAM SPORTS	1
PHYSICAL ACTIVITY AND HEALTH.	2
Sports Participation.	2
PERFORMING SERVICE AND RECEPTION IN TABLE TENNIS	3
PERFORMING FOREHAND AND BACKHAND STROKES IN TABLE TENNIS.	12
REVIEW QUESTIONS 1	22
SECTION 2 HEALTH AND WELLNESS -HUMAN DISEASES PART ONE	23
PHYSICAL ACTIVITY AND HEALTH.	24
Health and Wellness	24
HUMAN DISEASES.	24
CLASSIFICATION OF DISEASES.	36
REVIEW QUESTIONS 2	47
SECTION 3 TRADITIONAL GAMES - PART ONE	48
PHYSICAL ACTIVITY AND HEALTH.	49
Traditional Games	49
ORIGINS AND IMPORTANCE OF TRADITIONAL GAMES	50
ARM WRESTLING AND TUG OF WAR	60
REVIEW QUESTIONS 3	70
SECTION 4 INDIVIDUAL AND TEAM SPORTS – PART TWO (NETBALL).	71
PHYSICAL ACTIVITY AND HEALTH.	72
Sports Participation.	72
FOOTWORK, SHOULDER PASS AND OVERHEAD PASS IN NETBALL	72
SHOOTING IN NETBALL	85
THE NETBALL GAME	96
REVIEW QUESTIONS 4	101
SECTION 5 HEALTH AND WELLNESS - PART TWO DISEASE PREVENTION	102
PHYSICAL ACTIVITY AND HEALTH.	103
Health and Wellness	103
DISEASE PREVENTION	104
PERSONAL AND MENSTRUAL HYGIENE	128
REVIEW QUESTIONS 5	150
SECTION 6 TRADITIONAL GAMES - PART TWO	151
PHYSICAL ACTIVITY AND HEALTH.	152
Traditional Games	152

AFRICAN CLOTH PARACHUTE	152
REVIEW QUESTIONS 6	159
SECTION 7 INDIVIDUAL AND TEAM SPORTS - PART THREE	160
PHYSICAL ACTIVITY AND HEALTH.	161
Sports Participation.	161
UNDERARM SERVE AND DIGGING RECEPTION IN VOLLEYBALL	162
HISTORY OF VOLLEYBALL	174
ZONES AND ROTATIONAL ORDER ON THE COURT IN VOLLEYBALL	176
REVIEW QUESTIONS 7	186
SECTION 8 HEALTH AND WELLNESS - PART THREE.	187
PHYSICAL ACTIVITY AND HEALTH.	188
Health and wellness	188
CONCEPT OF FIRST AID	189
APPLYING THE KNOWLEDGE OF FIRST AID	204
REVIEW QUESTIONS 8	223
SECTION 9 TEAM SPORTS - PART FOUR	224
PHYSICAL ACTIVITY AND HEALTH.	225
Sports Participation.	225
RULES, GRIP AND PUSHING IN HOCKEY.	227
DRIBBLING IN HOCKEY	242
HITTING IN HOCKEY	248
REVIEW QUESTIONS 9	257
SECTION 10 HEALTH AND WELLNESS - PART FOUR	258
PHYSICAL ACTIVITY AND HEALTH.	259
Health and Wellness	259
STRESS AND ITS COMMON SOURCES.	259
PREVENTION AND MANAGEMENT OF STRESS.	274
REVIEW QUESTIONS 10.	288
BIBLIOGRAPHY	289
GLOSSARY.	291
ACKNOWLEDGEMENTS	297

FOREWORD

Ghana's new Senior High School Curriculum aims to ensure that all learners achieve their potential by equipping them with 21st Century skills, knowledge, character qualities and shared Ghanaian values. This will prepare learners to live a responsible adult life, progress to further studies and enter the world of work. This is the first time that Ghana has developed a Senior High School Curriculum which focuses on national values, attempting to educate a generation of Ghanaian youth who are proud of our country and can contribute effectively to its development.

The Ministry of Education is proud to have overseen the production of these Learner Materials which can be used in class and for self-study and revision. These materials have been developed through a partnership between the Ghana Education Service, teacher unions (Ghana National Association of Teachers- GNAT, National Association of Graduate Teacher -NAGRAT and the Pre-Tertiary Teachers Association of Ghana- PRETAG) and National Subject Associations. These materials are informative and of high quality because they have been written by teachers for teachers with the expert backing of each subject association.

I believe that, if used appropriately, these materials will go a long way to transforming our Senior High Schools and developing Ghana so that we become a proud, prosperous and values-driven nation where our people are our greatest national asset.

Haruna Iddrisu MP

Minister for Education

SECTION

1

INDIVIDUAL AND TEAM SPORTS



PHYSICAL ACTIVITY AND HEALTH

Sports Participation

INTRODUCTION

Have you ever wanted to play table tennis? This section is about the game of table tennis. We will cover service and reception, the forehand and backhand strokes and apply these skills in a game. Table tennis is an indoor game for two or four players. The players stand at each end of a table with a low net in the centre. Using small rackets, players hit a light ball back and forth over the net. A rally continues until one player either misses the ball, hits it into the net, or off the table, at which point the opponent scores.

Knowing how to grip the racket properly helps you with control, making it easier to serve and return effectively. Learning the rules of service and reception can also improve your game. Table tennis originated in England in the late 19th century as a parlour game and eventually developed into a competitive sport with its own rules and regulation. The International Table Tennis Federation (ITTF) oversees the sport, which has and is popular worldwide, with millions of recreational and competitive players.

KEY IDEAS

- **Backhand stroke:** Is a fundamental shot executed by using the non-dominant side of the racket.
- **Forehand stroke:** Is a fundamental technique in table tennis executed by using the forehand side of the racket.
- **Grip in table tennis:** This is the way a player holds the racket.
- **Reception in table tennis:** Is the returning of the ball after service by an opponent.
- **Service in table tennis:** Is the starting stroke of every rally in table tennis, and it follows specific rules.
- **Techniques:** These are fundamental skills and abilities that players develop to perform in a game of table tennis.

PERFORMING SERVICE AND RECEPTION IN TABLE TENNIS

Since becoming an Olympic sport in 1988, table tennis has showcased skill and athleticism.



Figure 1.1: Table tennis equipment.

1. The rules of table tennis

To understand the game of table tennis is it important to understand the basic rules of the game. This will ensure the game remains fair and allow you to focus on improving your skills and enjoy the game fully.

2. The basic rules of the game

- a. A table tennis match begins with the umpire conducting a coin toss. The winner has the option to serve the ball first, receive it or choose the side of the table they would like to play from.
- b. A game is played to 11 points, and a player must win by at least 2 points. Matches are often played as the best of 5 or 7 games.
- c. Each player serves two consecutive points, alternating until one player wins the game.
- d. The serve must be made from an open palm with the ball bouncing once on the server's side and once on the opponent's side. If the serve hits the net and still lands correctly, it is a let serve and is replayed.
- e. After the serve, players must return the ball over the net so it bounces on the opponent's side. Players cannot allow the ball to bounce more than once on their side before returning it.
- f. A player scores a point if the opponent;

- i. Misses the ball.
- ii. Fails to make a proper return.
- iii. Let's the ball bounce more than once.
- iv. Hits the ball before it bounces on their side (unless it's clearly going out).
- g. Players switch sides after each game.
- h. In doubles, teammates alternate hits. The serve must be made diagonally, from the right side of the server's court to the opponent's right side.

Now we have a basic understanding of the rules, let's now look at the serve and reception of the serve.

3. The importance of the service and reception in table tennis

- a. **Good control:** The serve in table tennis allows a player to have total control over how and where to hit the ball. It is the only situation where a player dictates the play.
- b. **Pressure on opponent:** A good serve increases pressure on the opponent. When service goes well, the receiver knows they won't get any easy shots, making them more cautious.
- c. **Preventing attacks:** A strong serve prevents opponents from launching powerful attacks right away, giving the server an advantage.
- d. **Own the attack:** A well-placed serve also improves a player's chances of making effective attacks during the rally.
- e. **Focus on the contact point:** Players pay close attention to where the ball contacts the opponent's racket during the serve. This helps them determine the spin and placement of the ball.

4. Performing service and reception in table tennis

The serve is a critical skill that starts each point, and building your service makes it a formidable part of your game strategy to gain an advantage.

a. Service in table tennis

A serve in table tennis is used to start each rally and is done by hitting the ball from a player's free hand and striking it into play with the racket.

The serve is a key skill in table tennis, and improving it can make it a powerful part of your game strategy.



Figure 1.2: Preparing to serve



Figure 1.3: Service in table tennis

b. Service rules

- i. The ball must be tossed at least 6 inches vertically (which is about 15cm).
- ii. The ball must be struck before bouncing.
- iii. The serve must clear the net and land in your opponent's court.
- iv. The server has two seconds to make the serve after the toss.
- v. Two consecutive faults result in a point for your opponent.

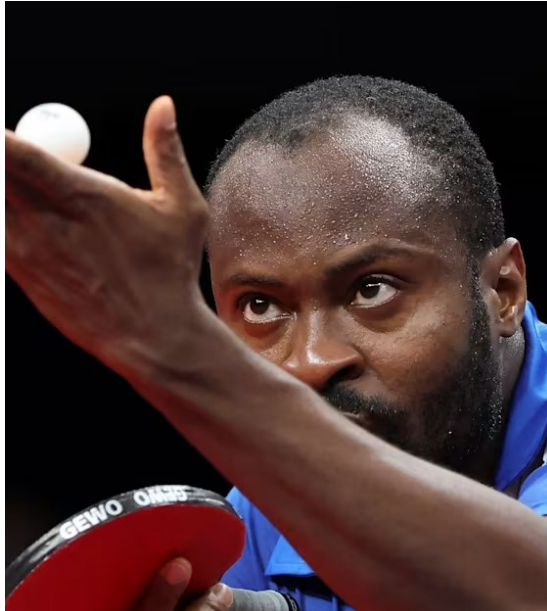


Figure 1.4: Serve ball toss



Figure 1.5: Table tennis service

Rules-service, return and order of play

5. Types of Serve/Service

Type of serve	Description
Flat serve	A quick, low serve that travels straight over the net, often aimed at the opponent's body.
Topspin	A serve with top spin that makes the ball jump high after bouncing, commonly used to push opponents back. The racket is brushed forward and upward, contacting the ball on its upper half to give it a forward rotation.
Backspin	A serve with backspin that causes the ball to stay low after bouncing, making it difficult to attack. The racket is brushed downward and slightly forward so that the ball is contacted on its lower half.
Sidespin	A serve that combines sidespin with either topspin or backspin, causing the ball to curve during flight. The racket brushes the ball in a semi-circular but forward motion round the bottom of the ball, either from right towards the left shoulder or vice versa.

Note: Two primary types of spin are forehand spin and backhand spin, each having distinct characteristics and techniques.

The link below shows various kinds of service in Table tennis

[Service in Table tennis](#)

Why do you think it's important to have a good serve in table tennis? Use the space below to note your thoughts.

Share your ideas with a partner. Can you add to your list?

6. Reception/Receiving

In table tennis, reception occurs when a player returns a ball that has been served to them by their opponent. A rally between the two players starts when the receiver hits the ball over the net and back to the other team's half of the table. Once it bounces to their side of the net, the player has to hit the ball. If the ball is struck before it bounces or after it bounces more than once, the opponent scores a point and a foul is called.



Figure 1.6: Reception in table tennis.

a. How to receive or return a serve

Type of service	How to receive
Topspin Serve	A topspin service should be received by chopping the ball. This helps to keep the flight of the ball low.
Flat Serve	A flat serve should be received by using shot control stroke to return the ball.
Backspin Serve	Backspin can be received by using topspin to reduce the spinning action of the ball.
Sidespin Serve	This form of service can be received by using a block shot or gentle backspin

Use the link below to watch how to return or receive serve in table tennis.

<https://www.youtube.com/watch?v=iN9eHnh530I>

7. Basic drills and steps in table tennis

a. Footwork and movement

- i. Work on your footwork to position yourself correctly for each shot.
- ii. Practice lateral movements, quick steps and balance.

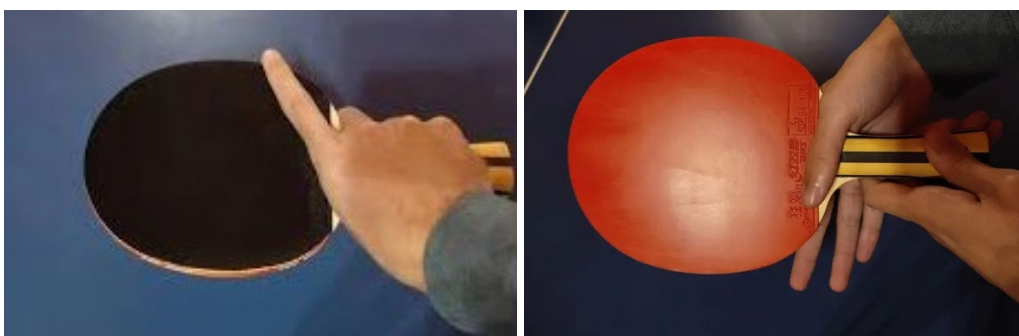
b. Grip and stance

- i. Hold the racket with a firm but relaxed grip.
- ii. Experiment with different grips to find what suits you best.
- iii. Stand with feet shoulder-width apart, knees slightly bent, and body leaning forward.
- iv. Hold the racket in front of the body and ready to move in any direction.
- v. Stay balanced on the balls of the feet and prepared to move quickly.

8. Types of grips in table tennis

In table tennis, there are two primary types of grips that players use, each with its variations

- a. **Shakehand grip:** This grip resembles a handshake. The player grips the racket as if shaking hands with it.



* **Figure 1.7:** Shakehand grip back view **Figure 1.8:** Shakehand grip front view

Variations

- i. **Deep Shakehand grip:** The racket is held deeper in the palm for more control.



Figure 1.9: Deep Shakehand grip

- ii. **Shallow Shakehand grip:** The racket is held more toward the fingers, allowing quicker wrist movement and a faster style of play. This grip is popular among Western players and is suitable for both offensive and defensive styles.

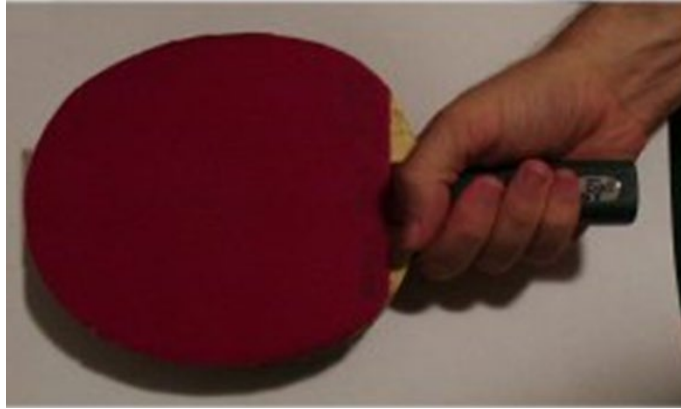


Figure 1.10: Shallow Shakehand grip

- b. **Penhold grip:** In this grip, the racket is held similarly to holding a pen, with the handle pointed upward and the face of the racket toward the ground.



Figure 1.11: Penhold grip in table tennis

Variations

- i. **Chinese Penhold grip:** The player uses mainly the forehand side and grips the racket with three fingers behind the blade.
- ii. **Japanese/Korean Penhold grip:** The handle is longer, and the player grips the racket with more fingers behind the blade for power, often using one side for both forehand and backhand. This grip is more popular in Asia and often favours an aggressive, close-to-the-table playing style.

Each grip offers different advantages in terms of spin, control and usefulness.



Figure 1.12: The difference between the Penhold and Shakehand grips in table tennis

Techniques Involved in Table Tennis

1. Pay close attention to the server's racket movement to anticipate the spin.
2. Adjust the racket angle to counter the spin (for example, angle upwards for backspin and downward for topspin).
3. Focus on proper form, timing and consistency.
4. **Serve practice**
 - a. Develop a variety of serves (short, long, sidespin, topspin).
 - b. Vary spin, placement and speed to keep opponents guessing.
5. **Receive and return**
 - a. Learn to read your opponent's serve.
 - b. Contact the ball gently to keep it low over the net (often used for backspin).
 - c. Hold the racket firm to redirect the ball (used against fast topspin serves).
 - d. For short serves, use a quick wrist action to flick the ball back with speed and surprise the server.
 - e. Practice returning strokes with control and placement.
6. **Drills and routines**
 - a. Engage in multiball drills with a partner or a coach.
 - b. Work on specific aspects like topspin or counterattacks.
7. **Match play**
 - a. Participate in friendly matches or tournaments.
 - b. Analyse your performance and learn from your mistakes.
8. **Fitness and conditioning**
 - a. Strengthen your core muscles, legs and upper body.
 - b. Cardio workouts improve endurance.

9. Mental toughness

- a. Stay focused, positive and adaptable during games.
- b. Learn from losses and celebrate victories.

10. Watch and learn

- a. Study professional matches.
- b. Observe techniques, strategies and shot selection.

Activity 1.1 General warm-up (picking tails)

Let's warm up our bodies to prepare for physical activity.

1. Your teacher will mark out an area for the warm-up. Stand within this area with your handkerchief tag in the back of your shorts as tails. When instructed, jog within the marked up, picking the tails of your classmates while preventing your tail from being picked.

Use the link below to watch a short video on picking tails

[Picking tails.](#)

2. Now that you have warmed up your body, complete the following activities that are specific to the game of table tennis.
 - a. Practice table-tennis-specific movements such as shuffle (side to side) footwork.
 - b. Shadow play - Perform imaginary stroke play, mimicking forehand and backhand table tennis actions.
3. Write one other warm-up activity you are familiar with.
4. List the step-by-step procedure involved in the warm-up mentioned above.
5. Demonstrate the warm-up activity using the steps above.

Activity 1.2 Techniques in table tennis

1. Use the links below to watch videos on how to hold the racket, stand, serve, and return a serve in table tennis.

[Serve in Table tennis](#)

[Serve in Table tennis 2](#)

2. With a partner, think about and list any two techniques involved in table tennis.
3. With a partner, think about and list two types of table tennis service.

4. In groups, form two lines, one at each end of a table tennis table, and take turns to practice your table tennis serve. Listen to your teacher, who will be on hand to give you tips on your serving technique.
5. Let's now focus on the accuracy of your serve. Your teacher will mark out 'targets' on the table. Serve the ball to hit the target on the other side of the table. Every time you hit the target, you score a point. Remember to keep track of your points scored.

Activity 1.3 Mini game (service and reception)

1. In your groups, take a few minutes to serve and return serves amongst your group members.

It's now time to play a group mini-game.

One group stands in a line at each end of the table. The first person in the line starts the game by playing a game. After 15 seconds, move to the back of the line. The new first person in the line continues the game. Repeat until all of your group has had a chance to play.

Here are the rules

- a. Every good service = 1point for the serving group.
- b. Every good return = 1 point for the returning group.
- c. Every rally that lasts for 15 seconds = 1point for each group.

*Remember to cool down following **Activity 1.2**.*

2. Share your experience with your classmates.
 - a. What did you find easy?
 - b. What do you need to practice more of?
 - c. What action will you take to improve your table tennis serve and reception techniques?

Now that we've learnt about the service and reception in table tennis, let's shift our focus to the forehand and backhand strokes.

PERFORMING FOREHAND AND BACKHAND STROKES IN TABLE TENNIS

How comfortable are you using both the forehand and backhand strokes in table tennis?

In table tennis, forehand and backhand strokes are essential skills that impact a player's performance. These strokes are the foundation of the game, forming a core part of each player's skill set. They support both offensive and defensive play and are key to overall game success. Mastering these strokes is crucial for competitive play.

Forehand Stroke

The forehand stroke is an offensive stroke that is used to force errors and set up attacking positions. It is mostly played against long or medium-length topspin or float balls. It involves hitting the ball with the racket using the side of the racket that corresponds to the palm of the dominant hand.

Top tip: Your dominant hand is your hand you use to hold the racket and execute strokes.

How to perform the forehand stroke

1. Stance

- a. Position your body so that the ball comes to your natural side.
- b. Your feet should be slightly wider than shoulder width apart.
- c. For right-handers, your right foot should be slightly behind your left foot to generate power.
- d. Bend your knees and crouch your body with both arms out in front of you.



Figure 1.13: Forehand stroke stance.

2. Swing

- a. As the ball approaches, rotate your body slightly to the right from your hip
- b. Shift some weight to your back foot.
- c. Keep your racket at about a 45-degree angle.



Figure 1.14: Forehand stroke swing.

3. Contact or Strike

- a. Once you are ready to hit the ball, rotate your body forward.
- b. Transfer your body weight back from the back foot to the front foot.
- c. Try to hit the ball at the peak of the bounce.



Figure 1.5: Forehand stroke contact

4. Finish/follow-through

- a. Your follow-through leaves the racket in front of your body, pointing in the direction where you have hit the ball.
- b. Move back to your ready stance in preparation for your return.



Figure 1.16: Forehand stance follow-through

Types of forehand stroke

There are different types of forehand strokes. Players can modify their gameplay by varying the speed, spin, and purpose of these strokes. The strokes include the forehand drive, forehand loop, forehand smash, forehand push, forehand flick, forehand block, and forehand chop.

1. Forehand drive

Purpose: An offensive shot used to maintain pressure on the opponent.

Characteristics: A fast, controlled shot with moderate topspin. The forehand drive is executed with a slightly closed racket angle to keep the ball low and fast.

When used: During rallies to keep the ball in play while applying some aggression.

Use the link [Forehand drive](#) to watch a video on forehand drive.

2. Forehand loop

Purpose: An aggressive attacking stroke, used to generate heavy topspin.

Characteristics: A powerful stroke with a significant amount of topspin. The racket swings from a low to high position, brushing the ball to create spin.

When used: Often used to attack underspin or slower balls, allowing for a more aggressive approach.

Use the link [Forehand loop](#) to watch a video on the forehand loop.

3. Forehand smash

Purpose: A high-speed offensive shot used to win a rally.

Characteristics: It is characterised by quick, explosive movement. The racket moves from a high position down to contact the ball, creating a downward angle.

When used: Often used to capitalise on high balls and is an effective way to end a rally quickly.

Watch the video on forehand smash using the link [Forehand smash](#)

4. Forehand push

Purpose: It is a controlled defensive shot, designed to continue a rally and prevent your opponent from playing an attacking return.

Characteristics: It has a short backswing, and it is executed mainly with the use of the forearm and the wrist.

When used: When the ball is received at a low and medium height, short or mid-length on your forehand side.

Follow the link below to watch a video on [Forehand push](#)

5. Forehand flick

When used: When you want to make quick attacks on short serves and returns.

To watch tutorials on forehand flick, use the link below.

<https://www.youtube.com/watch?v=A-hLs31VvDU>

6. Forehand block

Purpose: A defensive stroke used to counter fast, powerful shots.

Characteristics: The racket is held steady, using the opponent's speed to return the ball. The block is typically a controlled, passive stroke with little forward movement.

When used: When facing fast, aggressive shots, especially near the table.

Use the link below to watch a video on the [Forehand block](#) in table tennis.

7. Forehand chop

Purpose: A defensive stroke used to apply heavy backspin to the ball.

Characteristics: The ball is hit with a downward slicing motion, creating heavy backspin. This stroke is often slower and used to neutralise an opponent's attack.

When used: When the player is on the defensive, particularly when far from the table.

Use the link below to watch a video on the forehand chop in table tennis.

[forehand chop](#)

Summary of forehand strokes

Skill	Description
Drive	Fast, moderate topspin, offensive.
Loop	Heavy topspin, aggressive attacking.
Smash	Fast, flat shot to finish points.
Push	Defensive, slight backspin, low and controlled.
Flick	Quick, attacking return of short balls.
Block	Defensive, controlled return of fast shots.
Chop	Defensive, heavy backspin neutralises the attack.

The importance of the forehand stroke in table tennis

The forehand stroke is one of the most important and widely used techniques in table tennis. Its power, adaptability, and capacity to direct play and control rallies are what make this stroke significant.

The forehand stroke is essential in table tennis for the following reasons:

1. For players, it is the most powerful and forceful stroke. During rallies, it enables players to produce more power and speed.
2. When it comes to movement, the forehand stroke is more versatile than the backhand stroke. The ability to hit shots from different positions and angles allows players to more easily reach and attack balls from different areas of the table.

3. It is a reliable stroke for players of all levels.
4. The forehand stroke is key for controlling the pace of rallies. It helps players manage the game's flow and put pressure on the opposition by enabling them to transition smoothly between defence and attack.
5. Players can control the ball's trajectory and speed by using a forehand stroke to generate various forms of spin, particularly topspin.

Backhand Stroke

A backhand stroke is where the player hits the ball with the back of the racket, knuckles facing the direction of the shot. This is the opposite of the forehand stroke, where the palm faces forward.

Both offensive and defensive shots can be made with the backhand stroke, which is frequently employed when the ball is on the player's non-dominant side.

Use the link to watch a video on the backhand stroke in table tennis.

[Backhand stroke](#)

Key features of a backhand stroke

1. **Stance:** A balanced, slightly crouching position with feet shoulder-width apart is ideal for players. This allows for quick sideways movement.
2. **Grip:** The common racket hold used is Shakehand or Penhold grip, depending on the player's choice.
3. **Swing:** Usually, the swing motion travels horizontally or slightly upward. The elbow acts as the pivot point as the arm moves across the front of the body.
4. **Contact:** The player swings their arm from the non-dominant side to the dominant side, striking the ball with the back of the racket. Generally, the racket angle is more closed, particularly for topspin shots.
5. **Follow-through:** By the time the stroke is finished, the blade should be pointing roughly at chin level in the direction the ball was struck. To finish, go back to the ready position in preparation for the next shot.

Types of backhand strokes

1. **Backhand drive:** A controlled attacking stroke, similar to the forehand drive, where moderate topspin is applied.
2. **Backhand block:** A defensive shot used to return fast attacks with minimal effort. The racket is held steady, and the ball is "blocked" back.
3. **Backhand push:** A defensive stroke used to return short or underspin shots, typically keeping the ball low and spinning.
4. **Backhand loop:** An aggressive shot with heavy topspin used to counteract underspin or push shots.

5. **Backhand flick:** A quick attacking shot used to return short serves or balls close to the net.

The importance of the backhand stroke

1. Players can perform a variety of shots with the backhand, such as drives, loops, and flicks. It is crucial for both offensive and defensive play because of its adaptability.
2. When an opponent plays to your weakness, a strong backhand can effectively counter their attacks. This can put pressure on them and throw off their rhythm.
3. Playing the backhand well aids players in maintaining their positioning and balance. Smoother transitions between forehand and backhand strokes are made possible, improving overall strategy.
4. Players can return fast balls and keep control during rallies by using the backhand, which is frequently used for defensive strokes.
5. Backhand strokes can produce acute angles, which makes it challenging for opponents to predict and react appropriately.



Figure 1.17: Example of a backhand stroke

Activity 1.4 Forehand and backhand strokes

1. Your teacher will lead you in a warm-up in preparation for today's table tennis activity. Listen to your teacher and perform the warm-up as instructed.
Do you know why it is important to warm up your body before physical activity?
Note three reasons.
2. In groups, research using the internet on types of forehand and backhand strokes.

3. Make notes on how the types of forehand and backhand strokes are executed.
4. Utilise your knowledge of table tennis forehand and backhand strokes to produce a brief video.
5. Use the links and questions below to support your research and gather content for your video.

Links

[Link 1](#)

[Link 2](#)

[Link 3](#)

[Link 4](#)

Questions

- a. What are the different types of table tennis forehand strokes?
- b. Types of forehand strokes
- c. What are the different types of table tennis backhand strokes?
- d. Types of backhand strokes
- e. What are the key points my group will cover in our video?
- f. Key points to cover in our video are?

Activity 1.5 Wall bounce, Partner rally challenge and target zones

Before starting this activity, practice both your forehand and backhand strokes without a ball. Practice the swing motion of the strokes, focusing on grip, stance and follow-through.

1. **Forehand wall bounce:** Stand a few feet away from a wall and repeatedly hit the ball against it using only forehand strokes. Your goal is to maintain a smooth and controlled swing, focusing on keeping the ball at a consistent height. Keep the ball bouncing against the wall for as long as possible.
2. **Backhand wall bounce:** Repeat the activity above now using the backhand stroke. Smooth, controlled strokes here will help develop muscle memory and increase your skill level.
3. **Mix it up:** You can add targets to the wall to make this activity more challenging. Can you consistently hit the targets?

Practice rallying the ball with a partner.

4. Start using only forehand strokes.
5. Repeat using only backhand strokes.
6. Alternate between hitting forehand and backhand strokes.

7. For each of the above, count and see how many consecutive shots you can return. What is your highest number? Compare this with your classmates and celebrate each other's success.

Top tip: *Start with slow, gentle hits and gradually increase the speed of the strokes as you get more comfortable.*

8. The table has been divided into four zones. Your goal is to hit the ball into the correct zone. Practice your serve and reception using both forehand and backhand shots.

Rules

- a. Before hitting the ball, call out which stroke you will use and which zone you will hit the ball into. For example: Forehand, zone 3.
 - b. If you hit the correct zone with the appropriate stroke, you earn 2 points.
 - c. If you hit the correct zone with the wrong stroke, you earn 1 point.
 - d. No points are awarded for missing the table or hitting the wrong zone.
 - e. The winner is the first player to reach 10 points.
9. Your teacher will lead you in a cool down activity. In this activity, focus on your breathing and the correct positioning of your body when stretching.

Reflection

- a. Take time to reflect on the forehand and backhand strokes in table tennis.
- b. What did you find most challenging about the strokes?
- c. What did you enjoy most?
- d. How can you improve your forehand and backhand strokes?
- e. Use the space below to note your thoughts.

Before we move on, let's do a quick recap of what we've covered so far

1. To succeed in the dynamic and highly strategic sport of table tennis, a player must master several fundamental skills. Whether playing defensively or offensively, players can execute tactical strategies when these basic skills are used effectively.
2. Successful performance is based on these skills, which include grip technique, footwork, service techniques, stroke mechanics, hand-eye coordination, and spin control.
3. The serve is a crucial skill that starts each point, and building confidence in your serve is a powerful way to strengthen your game strategy and gain an advantage.
4. Mastering stroke mechanics, particularly the forehand and backhand strokes
5. The forehand and backhand are two of the most important strokes in table tennis because they let players control the ball and set the pace of the match.

6. The forehand stroke allows players to rotate their bodies and apply force to the ball fully; it is frequently used to create strong, offensive shots. Players can attack their opponent's weaknesses with the forehand stroke, which is often the preferred offensive tool.
7. The backhand stroke is crucial for quick defensive returns and control. The backhand gives the player the ability to react fast to shots on the other side of their body, even though it might not produce as much power as the forehand.
8. Grip technique is important as it allows players to control the speed, spin, and trajectory of the ball depending on how they hold the racket, whether they use the Shakehand or Penhold grip.
9. A player with a well-maintained grip can effortlessly switch between forehand and backhand strokes and modify their shots during fast rallies.
10. Good footwork allows players to position themselves correctly to execute shots. It ensures players can cover the table efficiently, staying balanced and prepared to return shots from various angles.
11. Fast, precise movement is essential, especially in high-speed rallies, where quick transitions between offensive and defensive play are required.
12. Good hand-eye coordination is essential. To hit the ball accurately, players must time their strokes, predict the ball's path, and closely track its movement. This coordination becomes even more important when facing opponents who vary their spins and shot speeds to disrupt the player's rhythm.
13. Spin control is another key skill for success in table tennis. Spin affects how the ball behaves when it hits the table or the opponent's racket. Skilled players use sidespin, backspin, and topspin to create unpredictable bounces, making it harder for opponents to return the ball effectively. Understanding spin mechanics allows players to control the game's pace and force opponents into making mistakes.
14. These fundamental skills allow players to execute a variety of strategies and perform well during games. As players continue to develop these skills, they become better at handling the challenges and demands of competitive table tennis.

Now, let's continue to practice our table tennis skills.

Activity 1.6 Winner stays challenge

Your teacher will lead you in a warm-up in preparation for today's table tennis activity. Listen to your teacher and perform the warm-up as instructed.

*Two groups**, 'A' and 'B', should be formed, and a player from each group should be chosen to start the game.*

1. The winner of each rally stays at the table, while the loser goes to the back of the line and the next player steps up to challenge.

2. The first player to win five matches in a row is declared the winner and crowned the king or queen of the challenge.

Activity 1.7 Match play to improve table tennis skills

1. The objective of this activity is to improve your table tennis skills through controlled challenges.
2. Different tables have been set up, each of which has a unique restriction. (For example, a forehand-only match).
3. With a partner or in a small group, rotate between the tables to experience all the challenges.

Challenge rules

- a. Your teacher will let you know the duration of each match.
- b. After each match, you will rotate to a new challenge.
- c. Follow table tennis scoring rules; however, apply the restriction for the table you are on.
- d. The winners of each match will play in a final 'champions match'.

Top tips

- a. Your teacher may give you feedback to help you improve your game. Try to apply this feedback in your matches.
- b. Support your classmates. Is there any feedback you can give them to help them improve their game and win their next match?

Remember, you can continue to improve your table tennis skills by visiting a table tennis centre in your community and practising with your friends.

REVIEW QUESTIONS 1

1. State four types of service in table tennis.
2. Name two types of grips in table tennis.
3. Describe how to return the following serves
 - a. Topspin serve
 - b. Backspin serve
4. What are the basic rules governing the serve in table tennis?
5. What are the two main types of strokes in table tennis?
6. Discuss the importance of the backhand stroke in table tennis.
7. Describe the steps involved in executing the forehand stroke in table tennis.
8. What are the two main grips used in table tennis?
9. How does the Shakehand grip differ from the Penhold grip?
10. What are the key components of a good serve?

SECTION

2

HEALTH AND WELLNESS -HUMAN DISEASES PART ONE



PHYSICAL ACTIVITY AND HEALTH

Health and Wellness

INTRODUCTION

In this section, we will examine the broad idea of human diseases and their classifications. We will identify symptoms, look at causes, and discover strategies for preventing different diseases. This understanding will help you to maintain your health and that of your family and community.

KEY IDEAS

- **Disease:** A disease is a condition that damages, interferes with, or prevents a person's body or mind from functioning normally. Depending on the causative agent, certain diseases have distinct signs and symptoms. However, some diseases may have no signs or symptoms and may appear a long time after the infection.
- **Human disease** - Any condition that adversely or negatively affects the body's normal functioning is referred to as a human disease. This can result in physical, mental or social distress, pain, suffering, and discomfort that people experience because of illnesses or diseases. Pathogens (such as bacteria, viruses, and parasites), genetic flaws, environmental factors, and lifestyle decisions are some of the causes of human diseases.
- **Infectious or Communicable diseases** – Diseases caused by pathogens like bacteria, viruses, fungi, or parasites. Infectious diseases are spread or transmitted directly or indirectly from the environment, insects, and animals to a person. They can also often be spread from person to person. Examples include AIDS, dengue, malaria, and others.
- **Non-infectious or non-communicable diseases** - Long-lasting illnesses that do not spread from person to person are known as non-infectious diseases or non-communicable diseases. Degenerative factors, genetics, smoking, poor diet, and inactivity can all contribute to their gradual development. Examples include cardiovascular diseases, diabetes, and cancer.
- **Well-being** – This is a multifaceted concept that encompasses various aspects of life, including physical, mental, emotional, and social health.

HUMAN DISEASES

What are Human Diseases?

Any condition that harmfully or negatively affects the body's normal functioning is referred to as a human disease. This can result in physical, mental, or social distress, with social distress being a state of extreme worry, pain, suffering, and discomfort that people experience because of illnesses or diseases. Numerous things can lead to human diseases, such as genetic flaws, environmental factors, lifestyle choices, and pathogens (such as bacteria, viruses, and parasites).

Depending on what causes the disease, certain diseases have distinct signs and symptoms. However, some diseases may have no symptoms or symptoms may appear a long time after the infection. Diseases can affect any part of the human body.

Use the space below to write your own definition of human diseases.

General characteristics of human diseases

The general characteristics of diseases refer to the common features and attributes that different diseases share. These characteristics help to categorise, understand, and manage diseases. Key aspects include:

Causes

Diseases are caused by pathogens, which include bacteria, viruses, fungi, and parasites, as well as genetic, lifestyle, and environmental factors, or a combination of these.

Transmission

People can contract diseases from person to person, from contaminated surfaces, from vectors, or from ageing, poor exercise, exposure to toxins, or genetic factors.

Incubation period

1. This refers to the time between being exposed to the cause of the disease and the appearance of the first symptoms. This period can vary widely depending on the disease and the person's health.
2. For example, Influenza takes 1- 4 days for the first symptoms to show, while HIV takes several weeks to months for the symptoms to appear.

Signs and Symptoms

Signs are what medical professionals and others notice when someone has a disease or other medical condition.

Symptoms are what a person with a disease or medical condition feels and can describe to a doctor or other people.

Depending on the disease in question and the body part impacted, signs and symptoms can differ significantly. Common signs and symptoms are fever, fatigue, muscle or body aches, coughing, diarrhoea, rash, pain, abnormal growths (such as tumours), organ dysfunction, and metabolic changes.

Diagnosis

Diseases can be diagnosed through physical examinations, imaging tests (such as MRIs and X-rays), genetic testing, and laboratory tests that detect the presence of pathogens (such as blood, cultures, stool, etc.). Reviewing an individual's medical history may also help in the diagnosis of a disease.

Prevention

Public health measures like quarantine and sanitation, vaccination, healthy lifestyle choices, balanced diet, regular exercise, regular medical check-ups, avoiding contact with infected people, wearing protective gear, and other measures can all help prevent diseases.

Treatment

Some diseases can be treated with medications that target the pathogen causing the disease, while others cannot be treated but may be managed through lifestyle changes, medications to manage symptoms or underlying conditions. Other treatment options may include surgery, physical therapy and other interventions tailored to the specific disease.

Examples of human diseases

Some examples of human diseases include tuberculosis, measles, chicken pox, yellow fever, stroke, bronchiolitis, candidiasis, malaria, etc.



Figure 2.1: Individual with chicken pox.



Figure 2.2: A baby with malaria.

Diseases And Their Specific Characteristics

The following are examples of various diseases, their cause, how they are transmitted, their symptoms, and how we can prevent and treat the diseases.

DISEASE	CAUSAL AGENT	MODE OF TRANSMISSION	SYMPTOM	PREVENTION	TREATMENT
INFLUENZA (FLU) Influenza, commonly known as the flu, affects the nose, throat, and sometimes the lungs, and can range from mild to severe.	Virus	Airborne or by touching contaminated surfaces.	Fever, chills, sore throat, runny nose, muscle or body aches, fatigue, and sometimes vomiting and diarrhoea.	Annual vaccine, practising good hygiene (washing hands), covering mouth and nose when sneezing/ coughing, and avoiding close contact with sick individuals.	Rest, fluids, the over-the-counter medications.
TUBERCULOSIS (TB) A serious disease that mainly affects the lungs but can also affect other parts of the body.	Bacterium (Mycobacterium tuberculosis)	Airborne (Typically requires prolonged exposure in close quarters to be transmitted.)	Persistent cough, coughing up blood or sputum, weight loss, chills and loss of appetite	Use of BCG vaccination, ventilation in living spaces, and wearing masks.	Use of multidrug therapy with antibiotics
TYPHOID FEVER A bacteria infection that leads to high fever, abdominal pain, and other severe symptoms, usually spread through contaminated food or water.	Bacteria (salmonella typhi)	Use of contaminated food, or water.	Abdominal pain, high fever, constipation or diarrhoea.	Use of safe water and food, vaccination.	Use of antibiotics

BRONCHITIS The inflammation of the bronchial tubes, which carry air to and from the lungs, causing coughing mucus production, and difficulty breathing.	Virus or bacteria.	Airborne (Contact with infected droplets in the air, or direct contact with infected persons).	Persistent cough, Sore throat, wheezing.	Avoid smoking, limit exposure to dust. Lifestyle changes.	Use of specific medications. (Over the counter inhaler, inhalers, antibiotics).
HIV/AIDS An infection of the body's immune system that makes the immune system weak and unable to fight off other infections of the body. The advanced form of the infection is called AIDS.	Human Immunodeficiency virus (HIV).	Spread through blood, semen, vaginal fluids and breast milk.	Early stages: Flu like symptoms. As the virus progresses it weakens the immune system, leading to infections and certain cancers(AIDS stage).	Safe sex practice (use of condoms), not sharing needles, HIV testing, taking pre-exposure prophylaxis if at high risk.	Use of antiretroviral therapy (ART).
TRYPANOSOMIASIS (SLEEPING SICKNESS) A parasitic disease that eventually leads to sleep disturbances and if untreated, death.	Parasite (Trypanosoma)	Tsetse fly bite.	Fever, headache, joint pain and severe neurological issues, sleep disturbances, and if untreated, death.	Avoid tsetse fly habitats, use of insect repellent.	Use of drugs targeting the parasite.
MENINGITIS The inflammation of the protective membranes covering the brain and the spinal cord.	Bacteria or virus	Close contact with infected persons.	Stiff neck, headache, fever, rash.	Vaccination, good hygiene practices.	Antibiotics, and antiviral medication.
BILHARZIA A parasitic infection caused by blood flukes.	Parasite (Schistosoma)	Contact with contaminated water.	Blood in urine or stool, anaemia, abdominal pain, and in severe cases organ damage	Avoid contact with contaminated water.	Use of antiparasitic drugs.

MALARIA An infectious disease caused by a parasite that is transmitted to humans through the bites of infected mosquitoes.	Parasite (plasmodium)	The bite of an infected female Anopheles mosquito.	Fever, sweating, headache, vomiting. (Can be life threatening if not promptly treated).	Antimalarial medication, insect repellents.	Antimalarial drugs.
DIABETES A chronic health condition that affects how the body turns food into energy. There are two main types of diabetes, Type 1 and Type 2.	Type 1- Genetics/immune system malfunction. Type 2 – lifestyle factors.	n/a	Increased thirst and urination, extreme hunger, unexplained weight loss, fatigue, blurred vision, slow-healing sores, frequent infections.	Type 2: Healthy diet, regular physical activity, maintaining a healthy weight, not smoking, etc.	Type 1: Insulin injections or an insulin pump, monitoring blood sugar levels, healthy eating, and regular physical activities. Type 2: Lifestyle changes, medications.
ARTHRITIS A condition causing pain, swelling and stiffness in the joints.	Different types of arthritis have different causes. For example: Osteoarthritis- Wear and tear on the joints over time. Rheumatoid arthritis is an autoimmune disorder where the immune system attacks the joints.	n/a	Joint pain, stiffness, swelling, and reduced range of motion, which typically worsen with age.	Maintaining a healthy weight, engaging in regular exercise and avoiding joint injuries.	Medications to reduce pain and inflammation, physical therapy, and sometimes surgery.

OSTEOPOROSIS A condition where bones become weak and brittle, increasing the risk of fractures.	Not caused by any agent, but is developed due to ageing, hormonal changes (like menopause), low calcium, and vitamin D intake and lack of physical activity.	n/a	Broken bones, back pain, loss of height, stooped posture.	Eating a diet rich in calcium and vitamin D, engaging in regular weight-bearing exercise, avoiding smoking and excessive alcohol, etc.	Medications to strengthen bones, calcium and vitamin D supplements and lifestyle changes.
ALZHEIMER'S A progressive brain disorder that slowly destroys memory and thinking skills.	The exact cause is unknown but involves the buildup of plaques and tangles in the brain. Risk factors include age, family history, and genetic factors.	n/a	Memory loss, confusion, difficulty with problem solving and language, changes in mood and behaviour.	There is no certain way to prevent Alzheimer's but a healthy lifestyle may help reduce risk.	Not treatable but can be managed with medications and therapies to temporarily improve and manage symptoms. Supportive care can also help to manage the disease.
COVID-19 A disease that affects the respiratory system, which includes organs involved in breathing.	Coronavirus SARS-CoV-2	Airborne, through respiratory droplets when an infected person coughs, sneezes or talks. Also transmitted by touching surfaces contaminated with the virus.	Fever, cough, difficulty breathing, loss of taste or smell, fatigue, muscle or body aches, sore throat, congestion or runny nose, nausea or vomiting, diarrhoea, etc. Severe cases can lead to pneumonia, acute respiratory distress syndrome (ARDS) and death.	Vaccination, wearing masks, hand washing, social distancing, avoiding large gatherings, ventilating indoor spaces, getting tested if exposed or symptomatic.	Resting, taking in enough fluids and using over-the-counter medications for mild cases. In severe cases, hospitalisation and professional medical treatment.



Figure 2.3: People infected with trypanosomiasis.

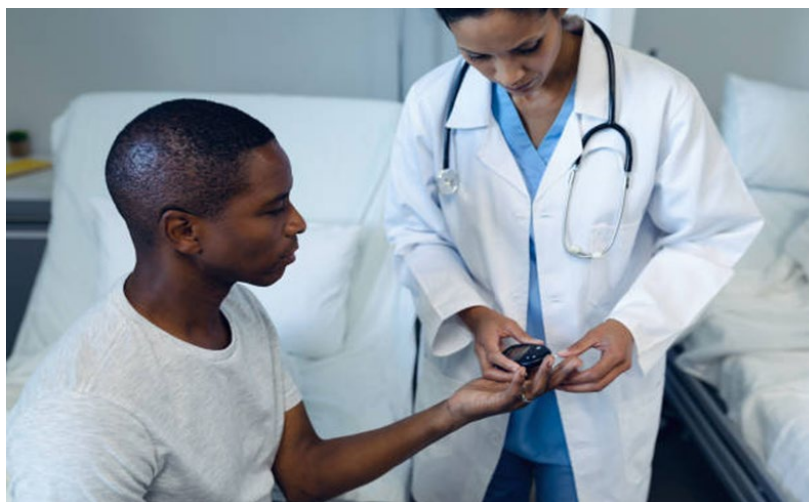


Figure 2.4: A diabetes patient checking his blood sugar



Figure 2.5: A Child drinking unsafe water, which can result in sickness.

The Importance of studying human diseases

Studying human diseases is crucial for a number of reasons, affecting not only an individual's well-being but also society as a whole. Here are some key reasons why it is essential:

For personal health	<p>Early detection: Knowing about diseases helps catch them early when treatment works best.</p> <p>Making smart choices: Learning about diseases helps to make good choices for our health, like eating well and staying active.</p>
To keep everyone healthy	<p>Stopping the spread: Understanding diseases helps to stop them from spreading among people and in communities.</p> <p>Staying informed: Knowing about diseases helps us to learn how to stay healthy and prevent getting sick.</p>
To find better treatments	<p>Finding cures: Researchers study diseases to find new medicines and treatments that can help people get better faster.</p> <p>Using new technology: Learning about diseases helps doctors use new tools and methods to treat patients.</p>
To save money and help economies	<p>Avoiding big bills: Understanding diseases helps prevent people from getting very sick, which can save money on medical bills.</p> <p>Working well: when people are healthier, they can work better and help the economy grow.</p>
To protect against global health issues	<p>Stopping outbreaks: Understanding diseases helps countries work together to stop outbreaks from spreading around the world.</p>
To understand how our environment affects us	<p>Learning from nature: Studying diseases helps us to understand how things like pollution and climate change can make people sick.</p> <p>Making better choices: Knowing this helps us to make better choices to keep the environment clean and safe for everyone.</p>

Impact of Disease on Human Life

Diseases can have a significant impact on individuals and their communities in many ways. Some key effects of diseases of life include:

Physical health

Pain and disability: Diseases can cause long-term pain in people and make it hard to move and live a normal life.

Shortened life: Serious diseases kill people and shorten their lives on earth.

Weak immune system: Diseases like HIV/AIDS can make it easier to get other infections, making the immune system too weak to fight diseases.

Mental well-being

Stress and anxiety: Living with a disease can make people feel stressed and worried.

Depression: An ongoing illness can make people feel sad and hopeless.

Social interactions

Isolation: People with serious diseases feel lonely because they feel the need to avoid others or because of the stigma associated with the disease.

Relationship strain: Being sick can make it hard to keep up with friends and family.

Changes in roles: Illness can make people stop doing things they used to do, like work or take care of the family.

Economic stability

Medical costs: Treating diseases can be very expensive and money-wasting.

Loss of income: If someone is too sick to work, the person cannot earn money to pay their medical bills and may have to depend on others to help them.

Productivity loss: When lots of people are sick, it affects the economy because fewer people can work.

Education

Missing school: Sick learners might miss a lot of school, which will affect their education.

Learning difficulties: Diseases or illnesses can make it harder for learners to learn or concentrate.

Lifestyle changes

Diet and exercise: People with certain diseases may need to change their diet or exercise habits.

Medication: Some diseases require taking medicine every day, which can be difficult to manage.

Community impact

Healthcare burden: If a lot of people fall sick and require hospital treatment, additional pressure is applied to hospitals, nurses, and doctors.

Activity 2.1 Impact of human diseases

1. In groups, research and produce a poster presentation to create awareness of two common human diseases in your school community. Use the space below to make notes on your chosen diseases.

Disease 1:

Disease 2:

2. Work with your classmates to create a list of ten human diseases. Use the internet to research and write down the causative agents of the diseases that affect the human body.

Diseases	Causative Agent

3. In groups, select five of the diseases above. Discuss the characteristics (how the disease affects the body) and the best ways to prevent your selected diseases.

Disease	Characteristics	Prevention

4. In groups, discuss why it is important to study human disease and the impact of diseases on human life. Make notes below and share your thoughts with your classmates.

Take-home Project

Your teacher will assign you to a group. In your group, you are going to complete a project on human diseases. Your project will be marked by your teacher.

Here's what you need to do.

1. Select one disease that can be spread (infectious) and one that cannot be spread (non-infectious).
2. Research and collect data on the following
 - a. What causes the disease?
 - b. How is it transmitted (for your infectious disease)?
 - c. What are the common symptoms?
 - d. How do they affect the body?
 - e. How can the diseases be prevented?
 - f. What lifestyle choices can reduce the risk?
 - g. What treatment options are available?
 - h. Is there any ongoing research or new treatments being developed for the disease?
3. Use your research to create a written report. Your report should contain the following
 - a. Title page
 - b. Introduction
 - c. Research on chosen diseases
 - d. Conclusion
 - e. References/Bibliography
4. Create a visual presentation to support your report. Include images, charts, and diagrams to explain the points. Present your findings to your class.

You will be marked on the following;

- a. Content quality: Depth of research, accuracy, and understanding of the diseases.
- b. Presentation: Clarity, creativity and ability to engage your audience.
- c. Collaboration: How well your group worked together, divided up the task and the overall effect.
- d. Report: Organisation, neatness and completeness of the written report.

Now that we have looked at various diseases, including how they are transmitted/spread, their impact on our bodies, and how these can be prevented and treated, we will now look at how diseases can be classified.

CLASSIFICATION OF DISEASES

Disease classification is the process of grouping diseases based on shared features like their causes, duration, how they spread, the body parts they affect, and whether they're inherited or linked to lifestyles. Classifying diseases helps us understand them better, make accurate diagnoses, and develop effective prevention and treatment methods.

Classification of Human Diseases

The two main classifications of diseases are:

1. Infectious diseases
2. Non-infectious diseases

Infectious Diseases

Infectious diseases are diseases or conditions caused by pathogens or organisms such as bacteria, viruses, fungi, or parasites. These microorganisms can invade the body and multiply, leading to illness and disease. Infectious diseases are spread or transmitted directly or indirectly from the environment, insects, and animals to a person. They can be prevented or treated or treated with specific drugs depending on the pathogens causing them.

Common infectious diseases include:

1. Tuberculosis (TB)
2. Strep Throat
3. Pneumonia
4. Whooping cough (pertussis)
5. Cholera
6. Chlamydia
7. Syphilis

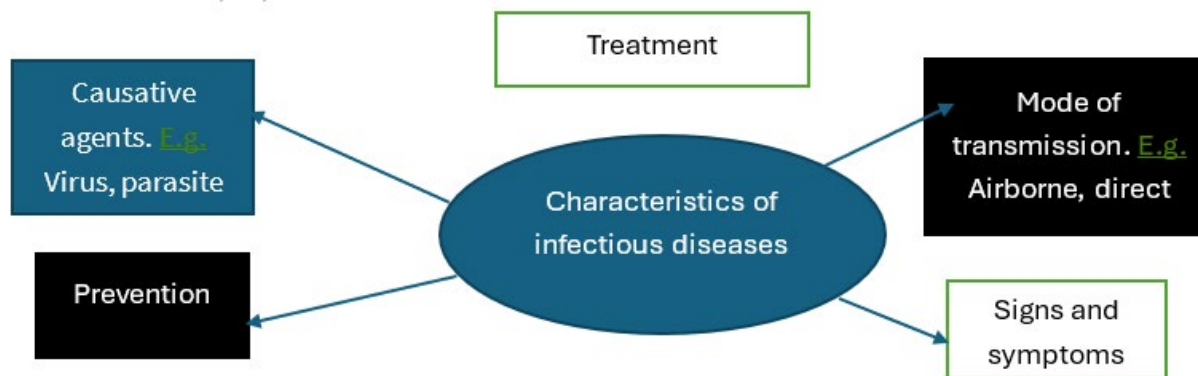


Figure 2.6: Characteristics of infectious diseases

Infectious diseases are caused by pathogens or agents. They have a mode of transmission, incubation or development period and signs and symptoms.

Causative Agents	Description of Causative Agents	Types	Example of a Disease Caused by the Causative Agents
Bacteria	Bacteria are microscopic, living, tiny organisms that are found everywhere on Earth. They are so small that a microscope is needed to see them. Bacteria can live in many different environments, including our bodies, soil, water and inside other living things.	Bacteria can have different shapes, such as rods, spheres or spirals. (See Figure 2.7).	Pneumonia, tuberculosis (TB), whooping cough, cholera, diphtheria, tetanus, diarrhoea, salmonellosis, bacterial meningitis, urinary tract infection (UTI), chlamydia, gonorrhea and syphilis.
Viruses	Viruses are tiny germs (germs are pathogens or infectious agents) that can only reproduce or replicate inside a living cell of other organisms. They are much smaller than bacteria and are considered unique because they cannot carry out any life processes or development on their own. Instead, they need to infect a host cell to reproduce and spread. Viruses can infect humans, plants and animals.	Refer to Figure 2.8 below for examples.	Chickenpox, HIV/AIDS, COVID-19, hepatitis A and B, common cold, human papillomavirus (HPV), influenza (flu), measles, mumps and rubella, polio, ebola, rabies, herpes, norovirus, West Nile virus.
Parasites	Parasites are organisms that must live on or inside another organism, the host, to survive and spread. They feed, grow or multiply in a way that harms their host. They need their host for their survival.	<i>Ectoparasites:</i> These are parasites that live, attach, or burrow into the upper layer of the skin of humans without gaining access into the internal tissues.	Malaria, chagas disease, toxoplasmosis, trichomoniasis or trich, trypanosomiasis (sleeping sickness), bilharzia.

Parasites		<p>Examples include: Ticks, fleas, lice, bed bug and mites.</p> <p><i>Endoparasites:</i> These are parasites that live within the human body (in the blood, tissues, body cavities, and other organs). Examples include: Roundworm, whipworm, hookworm and tapeworm.</p> <p>(See Figure 2.9).</p>	
Fungi	<p>Fungi are a group of microorganisms that include yeasts, moulds, and mushrooms. They can be found in various environments, such as soil, air, water, and on plants and animals. Fungi play important roles in decomposing organic matter and recycling nutrients in ecosystems.</p>	<p>Refer to Figure 2.10 and Figure 2.11 below for examples.</p>	<p>Athlete's foot, jock itch, ringworm, yeast infections, valley fever.</p>

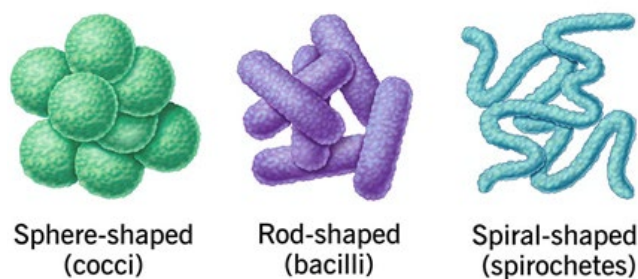


Figure 2.7: Types of bacteria. Source: Cleveland Clinic, 2022

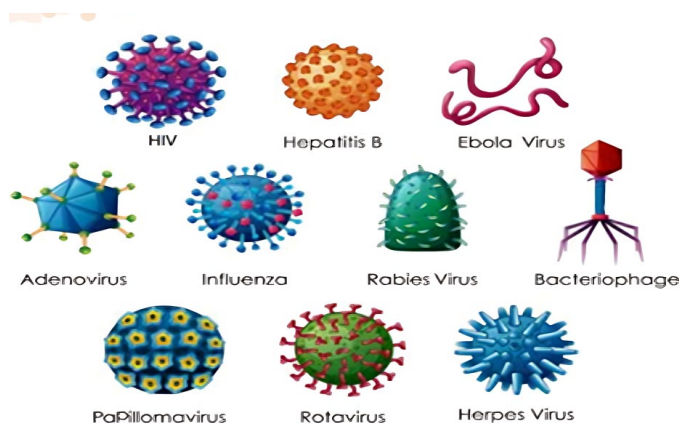


Figure 2.8: Different kinds of viruses that cause different diseases.

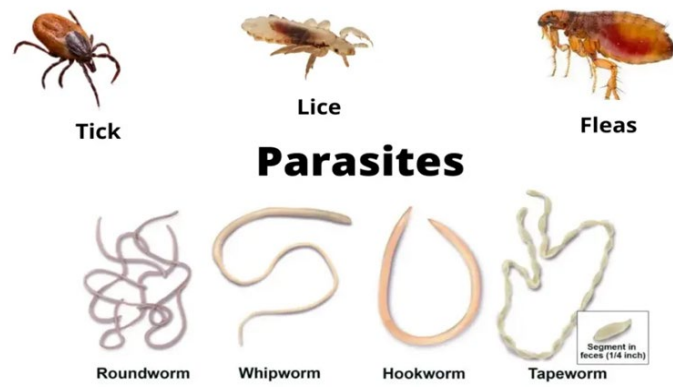


Figure 2.9: Various Ectoparasites and Endoparasites of Humans.



Figure 2.10: Athlete's foot between the toes.



Figure 2.11: Athlete's foot under the feet

Mode of transmission (how diseases spread)

Diseases can be transmitted through different means. This includes;

1. **Direct contact transmission:** This occurs when infectious agents are transferred directly from one person to another. It is also known as person-to-person contact (e.g., hugging, shaking hands, touching, kissing, sexual intercourse, etc).
2. **Indirect contact transmission:** This happens when infectious agents are transferred to a person through an intermediate object, surface or vector.
3. Transmission takes place through contact with contaminated surfaces and objects (e.g., doorknobs, table tops, etc., touched by an infected person).
4. **Airborne transmission:** This occurs when we breathe in respiratory droplets, that is, breathing in germs from an infected person coughing, sneezing, talking, singing, etc.
5. **Vector-borne transmission:** This happens when a person is bitten by insects that carry the disease-causing pathogens and spread to humans (e.g., mosquitoes, ticks, fleas, lice, blackflies, tsetse flies, etc.).
6. **Food and waterborne transmission:** This occurs when people eat and drink contaminated food or water.
7. **Animal reservoirs:** This happens when an individual comes in contact with infected animals and their droppings. Some examples include;
 - a. *Rodents:* Can spread diseases like hantavirus and plague.
 - b. *Bats:* Can spread rabies, Ebola, and Nipah viruses.
 - c. *Birds:* Can spread West Nile virus and avian influenza.
 - d. *Primates:* Can spread HIV/AIDS and yellow fever.
 - e. *Dogs:* Can spread rabies.
 - f. *Cattle:* Can spread bovine tuberculosis and brucellosis.
 - g. *Pigs:* Can spread swine flu and Nipah virus.
 - h. *Sheep and Goats:* Can spread Q fever.
 - i. *Cats:* Can spread toxoplasmosis.
8. **Vertical transmission:** This refers to the transmission of an infection, disease or genetic condition from a mother to her baby during pregnancy, childbirth or breastfeeding.

Examples of infectious diseases

Disease	Transmission	Impact
HIV (Human Immunodeficiency Virus)	From mother to baby during pregnancy, childbirth or breastfeeding.	Can lead to AIDS in the child if not treated with antiretroviral therapy.

Syphilis	From mother to baby during pregnancy or childbirth.	Can cause serious health problems in the baby, including developmental delays, bone abnormalities, and even stillbirth.
Herpes Simplex Virus (HSV)	From mother to baby during childbirth if the mother has an active outbreak of genital herpes.	Can cause neonatal herpes, which can lead to severe complications such as brain damage, eye problems, or even death.
Hepatitis B	From mother to baby during childbirth.	The baby can develop chronic hepatitis B infection, which may lead to liver damage or liver cancer later in life.
Toxoplasmosis	From mother to baby during pregnancy, if the mother is newly infected.	Can cause serious birth defects, including brain damage and eye problems.

Examples of genetic conditions

Sickle cell disease	An autosomal recessive genetic disorder. If both parents carry the sickle cell trait, the baby has a 25% chance of inheriting the disease.	Causes red blood cells to become misshapen, leading to pain, anaemia, and increased risk of infections.
---------------------	--	---

Preventing infectious diseases involves a combination of personal hygiene practices, vaccinations, safe food and water consumption, and other preventive measures. Here are some effective ways to prevent infectious diseases:

1. **Vaccination:** Get vaccinated for diseases for diseases that they protect against. Vaccines protect people from many diseases.
2. **Hand hygiene:** Hygiene practices such as washing hands with soap and water before eating, and after using the restroom remove germs that can cause disease.
3. **Safe food practices:** Properly wash fruits and vegetables in clean water before eating and cooking meat and other foods reduce the risk of foodborne illnesses.
4. **Clean water:** Drinking and using clean water prevents waterborne diseases.
5. **Avoiding close contact:** Staying away from sick individuals reduces the spread of infectious diseases. For example, avoid close contact with people who have colds or the flu.
6. **Using protective gear:** Wearing masks and gloves can protect you from airborne and contact-transmitted diseases. Example: Wear a mask in crowded places to reduce the spread of respiratory infections.

7. **Safe sexual practices:** Using condoms and having regular health check-ups can prevent sexually transmitted infections (STIs). Example: Use condoms during sexual activity to prevent HIV and other STIs.
8. **Proper waste disposal:** Properly disposing of waste prevents the spread of infectious agents.
9. **Avoiding insect bites:** Using insect repellent and nets can prevent diseases spread by insects. Example: Use mosquito repellent and sleep under a mosquito net to prevent malaria.
10. **Staying home when sick:** Staying home when sick prevents spreading illness to others. Example: Rest at home suffering from a cold or the flu until better before going out to mingle with others.



Figure 2.12: How to prevent the spread of infection

Non-infectious Diseases

Non-infectious diseases are long-lasting illnesses that do not spread from person to person. They develop slowly and can be caused by things like poor diet, lack of exercise, smoking, degenerative factors and genetics. Non-infectious diseases are often called lifestyle diseases because their development is mainly influenced by an individual's lifestyle choices and behaviours. Diseases developed from these categories can lead to serious health problems and even death, but many can be prevented by making healthy lifestyle choices. Early detection and treatment are important to manage these diseases and improve quality of life.

Characteristics of non-infectious diseases

Characteristics of non-communicable diseases refer to the distinctive features or traits that are commonly associated with non-infectious diseases. These characteristics help differentiate NCDs from other types of diseases.

Nature of Non-infectious Diseases	<p>Long duration: Non-infectious diseases usually persist for long periods, often for the remainder of an individual's life.</p> <p>Slow progression: Non-infectious diseases normally develop slowly over years or decades.</p> <p>Chronic pain and discomfort: Many Non-infectious diseases cause ongoing pain and discomfort, affecting the daily activities of the sufferers.</p>
Causes of Non-infectious Diseases	<p>Multifactorial causes or origins of disease: NCDs often arise from a combination of factors such as genetic, physiological, environmental, and behavioural factors.</p> <p>Lifestyle factors: Poor diet, physical inactivity, tobacco use, and excessive alcohol consumption are significant contributors to the development of the disease.</p>
Transmission or development of Non-infectious Diseases	<p>No direct transmission: Non-infectious diseases cannot be spread from person to person through physical contact, air, or bodily fluids.</p> <p>Internal development: They develop due to internal factors such as genetic mutations, metabolic issues, and immune system malfunctions.</p>
Types of Non-infectious Diseases	<p>Cardiovascular diseases: Includes heart disease, stroke and hypertension.</p> <p>Cancers: Various forms like lung cancer, breast cancer, and colon cancer.</p> <p>Chronic respiratory diseases: For example, chronic obstructive pulmonary disease (COPD) and asthma.</p> <p>Diabetes: Particularly Type 2 diabetes, characterised by high blood sugar levels over a prolonged period.</p>
High mortality and morbidity	<p>Leading causes of death: Non-infectious diseases are the primary cause of death worldwide, accounting for over 70% of all deaths globally.</p> <p>Significant disability: These diseases often lead to long-term health issues and disabilities, impacting the quality of life.</p>
Preventability	<p>Modifiable risk factors: Many Non-infectious diseases can be prevented or delayed through lifestyle changes such as healthy eating, regular physical activity, avoiding tobacco and limiting alcohol consumption.</p> <p>Early detection and management: When detected early, Non-infectious diseases can be prevented from worsening and becoming life-threatening. This can be done through regular health screenings and early interventions.</p>

Ways of preventing non-infectious diseases

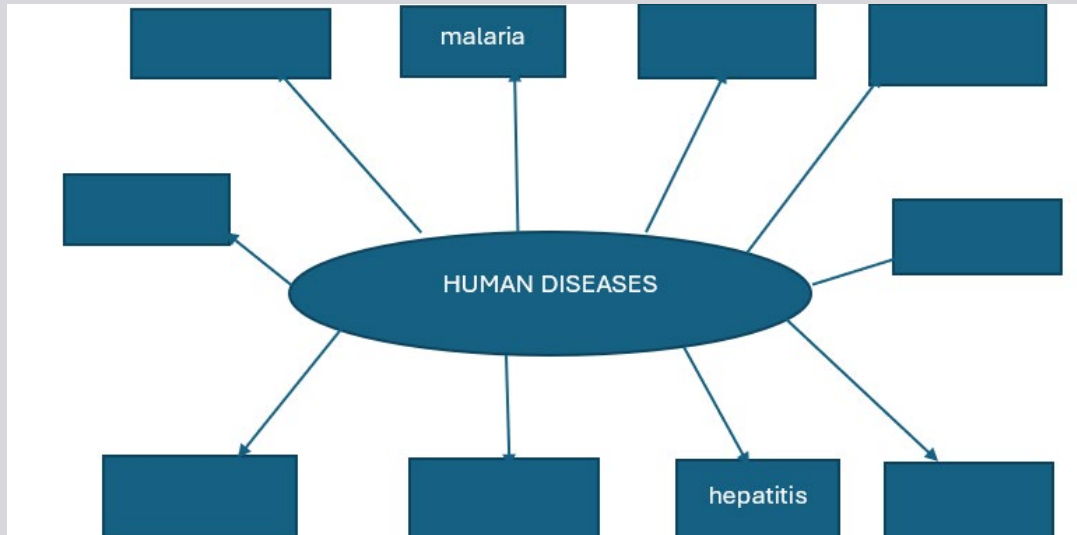
Preventing non-infectious diseases involves adopting a variety of lifestyle and behavioural strategies aimed at reducing risk factors and promoting overall health.

Here are some effective ways to prevent non-infectious diseases

Healthy diet	Consume a balanced diet rich in fruits, vegetables, whole grains, lean proteins, and healthy fats, and limit intake of processed foods, sugars, and salt.
Regular physical activity	Engage in regular exercise such as walking, running, cycling, swimming, or participating in sports. Aim for at least 150 minutes of moderate-intensity aerobic activity or 75 minutes of vigorous-intensity activity per week.
Maintain a healthy weight	Achieve and maintain a healthy body weight through a balanced diet and regular physical activity. Monitor weight regularly and seek professional advice if needed to manage weight effectively.
Avoid tobacco use	Do not smoke or use tobacco products. Seek help to quit if currently using tobacco. Avoid exposure to second-hand smoke to reduce the risk of respiratory and cardiovascular diseases.
Limit alcohol consumption	Drink alcohol in moderation, if at all.
Manage stress	Practice stress management techniques such as mindfulness, meditation, deep breathing exercises, or hobbies that promote relaxation. Seek professional help for chronic stress or mental health issues.
Regular health screenings	Schedule regular check-ups with healthcare providers to monitor and manage risk factors such as blood pressure, cholesterol levels, and blood glucose levels. Participate in recommended screenings for cancer, heart disease, and other non-infectious diseases based on age, gender, and family history.
Avoid exposure to environmental toxins	Minimise exposure to harmful chemicals and pollutants in the environment, workplace, and home. Use protective equipment and follow safety guidelines if working with hazardous materials.
Good sleep hygiene	Ensure adequate sleep by maintaining a regular sleep schedule and creating a restful sleep environment.
Healthy relationships and social connections	Foster strong social connections and maintain healthy relationships to support emotional well-being. Seek support from friends, family, or support groups when needed.

Activity 2.2 Classification of human diseases

1. Think of human diseases you are familiar with. Write down as many names of human diseases as possible.



2. Pair up with a classmate, classify the human diseases listed above into infectious and non-infectious.

Infectious diseases	Non-infectious diseases

3. Explain to your class your reasons for classifying each disease in this way.
4. In your pair, search for the characteristics of infectious and non-infectious diseases. Present your findings to the class.
5. Draw an arrow to match the pathogens to the diseases.

Risk factors of human diseases

1. With your pair, write a list of risk factors linked to non-infectious diseases.
2. Why are non-infectious diseases known as “lifestyle diseases”?

Take-home Activity

Create a guide on ways to prevent both infectious and non-infectious diseases.

EXTENDED READING

Use the links below to learn more about human diseases.

- <http://www.britannica.com/science/disease/control-of-disease>
- <http://www.medicalnewstoday.com/articles/pathogens-definition#pathogen-types>
- <http://www.studocu.com/en-gb/document/learndirect/unit-20-human-disease-and-prevention/unit-20-human-disease-and-prevention/66312281>

REVIEW QUESTIONS 2

1. What is a disease?
2. Explain the mode of transmission of the following disease
 - a. Influenza
 - b. Trypanosomiasis
 - c. Malaria
 - d. Aids
3. A person exhibits a persistent cough, weight loss, and chest pain. What disease might this person be suffering from?
4. A person who is showing signs of fever, chills, cough, sore throat, runny nose, muscle aches, headaches, and sometimes vomiting might be suffering from which disease?
5. State two examples each of infectious and non-infectious diseases.

SECTION

3

TRADITIONAL GAMES - PART ONE



PHYSICAL ACTIVITY AND HEALTH

Traditional Games

INTRODUCTION

Around the world, traditional games are an important part of the social life and cultural heritage of the people. These games are more than just recreational activities; they hold rich expressions of history, customs, and values that are often passed down through generations.

In this section, we will look at Ghanaian traditional games, their origins, rules, cultural and educational benefits. We will cover a range of traditional games, placing an emphasis on their social, cultural, and developmental values and how these games impact individuals and communities. Traditional games offer a window into the ways of life, customs and beliefs of different cultures.

KEY IDEAS

- **Background of traditional games:** They are frequently played with little equipment and straightforward rules that are simple to understand and modify. These games have changed over the centuries to reflect the people's values, traditions, and way of life.
- **Concept of arm wrestling:** Arm wrestling is a competitive sport where two competitors demonstrate their strength and technique by using one arm each to push the other's hand down onto a flat surface.
- **Concept of tug of war:** Tug of war involves two teams pulling on opposite ends of a long rope in an attempt to drag or pull the opposing team across a predetermined line.
- **Origin of traditional games:** Traditional games originated from the social and cultural history of the country's many ethnic groups.
- **Significance of traditional games to our health and well-being:** Traditional games help improve cardiovascular health, enhance muscular strength and endurance and increase bone density, etc.
- **Traditional games:** Activities that have been passed down through generations and are typically rooted in the culture, history and social practices of a tribe, community or region.

ORIGINS AND IMPORTANCE OF TRADITIONAL GAMES

What are Traditional Games?

Traditional games are activities that have been passed down through generations and are typically rooted in the culture, history and social practices of a tribe, community or region. These games often require minimal equipment and are played using simple rules that can be easily learned and adapted. They are usually played in groups, fostering social interaction, teamwork and physical activity. Traditional games can be an important part of childhood and community life, providing entertainment, education and a means of preserving cultural heritage. They are a valuable part of educational and recreational activities, offering a blend of fun, learning and cultural appreciation.

Examples of Traditional Games in Ghana

Ampe, langa, pilolo, chaskele, ansankroma, kallanga, oware, antoakyire, tumatu, cloth parachuting or sail, ludo, alokoto, draughts (dame).

Write down other traditional games you know of.



Figure 3.1: Children playing Antoakyire



Figure 3.2: Children playing Ampe

Origins of Some Ghanaian Traditional Games

Ghana's traditional games have their origins in the social and cultural history of the country's many ethnic groups. These games have changed over the centuries to reflect the people's values, traditions, and way of life. They are frequently used for entertainment, education, and socialisation.

Cultural heritage

1. **Community and clan-based origins:** Many traditional games originated within specific communities or clans and were played during communal gatherings, festivals and rites of passage. They were integral to social bonding and cultural identity.
2. **Oral tradition-based origins:** Some games and stories behind them and their rules were discovered by great hunters and warriors who transmitted these to their people. These were then passed on orally from one generation to the next. This oral tradition ensured that the games remained a vital part of community life.

Ritual and ceremonial context

1. **Ritual significance:** Some traditional games had ritualistic and ceremonial significance in their origin. They were often part of larger cultural ceremonies, such as harvest festivals, initiation rites and religious celebrations. For example, wrestling matches were held during festivals to honour ancestral spirits and celebrate community strength.
2. **Seasonal variations:** The playing of certain games was sometimes tied to specific seasons or agricultural cycles. This seasonal aspect ensured that the games remained relevant to the community's way of life. For instance, Abongo is a traditional wrestling game that takes place during dry season festivals when farming activities are minimal. Kyekyekule is a singing and clapping game played mainly by children. It typically takes place during the post-harvest period when children are free and there is more leisure time.

Colonial influence and adaptation

1. **Colonial period adaptations:** During the colonial period, some traditional games were adapted to include elements from Western games introduced by colonial powers. This period saw a blending of indigenous and foreign game elements, leading to new variations and forms. Examples of such games are:

- a. **Chaskele**

Indigenous elements: The game involves hitting a ball (often made from rolled-up socks or rubber) with a stick and running to designated spots before the ball is retrieved.

Western influence: The concept of hitting a ball and running bases is reminiscent of baseball, a game introduced during the colonial era.

b. Pilolo

Indigenous elements: The game involves hiding small sticks or objects, and players racing to find them.

Western influence: The competitive racing element resembles aspects of Western scavenger hunts.



Figure 3.3: Men playing Chaskele

Some Examples of Traditional Games in Ghana: Tribes That Play Them, Their Descriptions and Basic Rules

Traditional games in Ghana are an integral part of the cultural heritage, reflecting the customs and values of various ethnic groups. These games are often played during festivals, community gatherings, and as part of everyday leisure activities. Examples include Ampe and Pilolo.

Ampe

Tribe: This game is played by children of almost all tribes in Ghana.

Description

Ampe is a lively, rhythmic and energetic game that involves jumping, clapping, and quick reflexes, mainly played by girls, though boys can also participate. It is often played during the post-harvest period at home when there is more free time and at school during break time. The game is typically played by two or more players and can be played in any open space, such as a playground, courtyard, field or a park.

At the start of the game, players stand facing each other at a close distance, about one or two feet apart and agree on the foot movement for scoring. That is, one player or

a group of players will choose the same foot - right, right or left, left foot for winning a point, and the other player or players will choose a different foot - right, left or left, or right for scoring. This can be done through a ballot or by mutual agreement. The game begins with both players jumping simultaneously while clapping their hands. As they jump, each player extends one foot forward. The timing and rhythm are crucial to match the clapping and jumping. This game involves anticipating the opponent's foot movement while jumping and clapping in sync with the objective being to outwit the opponent by anticipating their foot moves.

Rules: Rules and scoring vary slightly from one place to another, so it is essential to agree on the rules before starting the game. However, below are some general rules:

1. Players must stand facing each other.
2. Players must clap their hands and jump simultaneously.
3. Players must extend one foot forward while in the air.
4. Players must land in sync, with both players hitting the ground at the same time.
5. Scoring must be based on agreed foot movement.
6. Overall winner must be determined by the number of total points accrued.



Figure 3.4: Adults playing Ampe

Use the QR code below to watch a video on Ampe.

<https://youtu.be/wZPeon377mM?si=XGLA7GeFrgqeR5Uk>



Pilolo

Tribe: This is a game played by children of almost all tribes in Ghana.

Description: Pilolo is an outdoor game that is played among Ghanaian children. It is a hide-and-seek type of game where players search for objects (usually sticks). The game is played by five or more children, all excited to win. The number of objects used is dependent on the number of players. The game starts with one player hiding the object. The person to hide the object is decided by drawing lots, a previous winner, a previous loser, or by volunteering.

The person hiding the object instructs the rest of the players to go into hiding elsewhere. The person then sneaks to hide the object around the playing area and then shouts out "pi-lo-lo" to signal the start of the search. The players run from their hideout to search for the item. Clear and defined boundaries for where the objects can be hidden and where players can search are indicated. This ensures safety and keeps the game within a manageable area.

The game is about who finds an object and returns it to the leader first at a demarcated finishing point. Marks are awarded and recorded as and when they reach the finish point. The game continues with the same or a new hider, and the objects are hidden again for the next round.

After a predetermined number of rounds or a set time limit, the player who finds and returns the most objects to the designated spot is declared the winner.

Rules

1. Players must not peek while the hider is hiding the objects.
2. Players must not interfere with other players while searching for the objects.
3. Players must return the found object to the designated area or line to win a point.



Figure 3.5: Children in search of the hidden object



Figure 3.6: Children struggling to join the finishing queue

Cultural Significance of Traditional Games

Traditional games are very important to cultures worldwide. They help preserve and share cultural values, social norms, and historical stories. These games showcase cultural identity, connect the past with the present, and pass down valuable lessons and experiences to future generations. Here's how traditional games contribute to cultural heritage:

Preservation of cultural heritage

1. **Oral tradition and history:** To preserve oral traditions and history, traditional games summarise historical events, legends, and folklore. For example, some games are based on historical battles or important events, which makes them a living record of a community's past.
2. **Cultural identity:** Traditional games strengthen people's sense of cultural pride and identity by tying them to their ancestors and heritage. People reinforce their ties to their cultural heritage and transmit this sense of identity to the next generation by playing these games.

Social cohesion and community building

1. **Intergenerational bonding:** Traditional games that are often passed down through generations create opportunities for the young and old to interact and bond. Grandparents, for instance, strengthen family ties by teaching their grandchildren the game's rules and techniques.
2. **Community engagement:** They promote social harmony and unity by bringing people together during festivals, celebrations, and get-togethers. By playing these games, community members can develop a sense of support and belonging.

Educational value

1. **Skill development:** Children and young adults can develop a variety of skills through traditional games. Participants develop skills like social interaction, problem-solving abilities, teamwork, strategic thinking, and physical coordination. Young people use the games as informal training grounds for a variety of life skills, such as defence and combat, in addition to being recreational activities.

GAMES	SKILLS DEVELOPED
Oware	Strategic and mathematical abilities.
Wrestling and Ampe	Encourage agility and physical fitness.
Dambe	Physical prowess, bravery, and combat techniques.
Abongo	Strength, stamina and strategic abilities.
Kpatinga	Strength and accuracy for hunting and fighting.

2. **Moral, ethical and social lessons:** A lot of traditional games are team-based and teach moral and social lessons like respect for others, fair play, and cooperation. In the community, they function as unofficial teaching resources. Games like pilolo, chaskele, dame (draughts), ampe, oware, sansakroma (stone passing game), antoakyire, olu, dua oo dua, kwaa-kwaa, ludo, others are examples of this type of game that have local regulations that place a strong emphasis on social bonds, fair play, communication, sportsmanship, honesty, and respect for opponents, teammates, and spectators—all of which are essential components of social harmony.

Ritualistic and ceremonial functions

Rites of passage: Some games are essential to rites of passage, commemorating important life events such as marriage, birth, puberty, and death. These games represent the passage from one phase of life to the next and are frequently paired with culturally instructive ceremonies.

Benefits of Traditional Games in Daily Living

Entertainment and Recreation

1. **Leisure activities:** The entertainment and leisure opportunities offered by traditional games enhance the general happiness and well-being of the community. They provide an opportunity for leisure, social interaction, and enjoyment—all of which are critical for mental health and overall well-being.
2. **Festive celebrations:** They bring joy and excitement to cultural festivals and ceremonies and are frequently the focal point of festive celebrations. The festive atmosphere is enhanced by the lively and joyful vibes these games provide.

Promotes physical health

1. **Physical fitness:** Many traditional games involve physical activity, promoting fitness and healthy lifestyles. Playing games that involve running, jumping, or other physical activities keeps players fit and active. Almost all traditional games involve some kind of running, jumping, and balancing which promote cardiovascular health, muscle strength and overall physical fitness. Regular participation in these games helps maintain a healthy weight, reduces the risk of chronic diseases and enhances physical endurance.

2. **Coordination and motor skills:** Games that demand timing and precise movements, such as stick fighting or jump rope, improve fine motor skills and hand-eye coordination. These skills are crucial for daily tasks and overall physical development, especially in children.
3. **Endurance and stamina:** Playing a physically demanding traditional game helps you develop your stamina and endurance. This enhances resilience and general energy levels and is advantageous for day-to-day tasks.
4. **Flexibility and agility:** People who participate in activities that require dodging, twisting, and bending become more flexible and agile.
5. **Mental agility:** Through strategic thinking, memory exercises, problem-solving, and concentration, traditional games improve mental agility and cognitive functions. Most traditional games, require players to think carefully.
6. **Connection with nature:** Many traditional games are played outdoors, allowing players to engage with their environment, which can enhance physical health and promote a sense of well-being.

Mental benefits

1. **Cognitive skills:** Playing strategic games improves memory, focus, problem-solving skills, planning, and strategy—all of which support the growth of critical thinking and decision-making abilities.
2. **Stress relief:** Playful activities can help people relax and feel better by lowering stress and anxiety and offering a mental respite from everyday routines and demands.
3. **Self-esteem and confidence:** Playing games successfully, learning, conquering obstacles, or winning increases confidence and self-worth. This sense of achievement has a beneficial effect on other areas of a person's life. The sense of achievement inspires people to establish and work towards additional goals.

Promoting inclusivity

1. **Accessible to all ages and abilities:** Traditional games often have simple rules and require minimal equipment, making them accessible to people of all ages, genders, and abilities. This inclusivity ensures that everyone, regardless of their physical or cognitive abilities, can participate and enjoy the game.

For example, in Ghana, the game “Pilolo” involves hiding and finding small objects, which can be played by both children and adults. The simplicity of the game makes it easy for participants of all ages and abilities to engage, fostering inclusivity within the community.

2. **Non-competitive nature:** Many traditional games emphasise participation and fun over competition, reducing barriers to inclusion. This approach encourages everyone to join in without the fear of losing or being judged, promoting a supportive or inclusive environment.

For example, 'Sansankroma', a game played by passing a stone in a circle, focuses on cooperation and enjoyment rather than competition. This game's non-competitive nature ensures that everyone, regardless of their skill level, can participate and have fun together.

3. **Adaptability:** Traditional games can be easily modified to accommodate different participants' needs, ensuring that everyone can take part. This adaptability makes the game inclusive for people with diverse abilities and preferences.

For example, the rules of some games can be adjusted to allow children with mobility issues to participate. For instance, instead of running or jumping, players might walk or use mobility aids, ensuring everyone can enjoy the game and feel included.

The Impact of Modern-Day Influences on the Popularity and Practice of Traditional Games

Traditional games have been an important part of cultural heritage, reflecting the history, values, and customs of different communities. However, in recent times, these games have been influenced by various modern-day factors that affect their popularity and practice.

Modern-day influences include

1. **Technology and digital entertainment:** Many young people now spend more time on digital platforms than on traditional physical activities due to the popularity of smartphones, video games, and online entertainment. Games like football or "Ampe" are now played less in the communities because children and teenagers prefer playing video games or engaging on social media platforms. The convenience and excitement of virtual gaming environments can draw attention away from traditional games, which might seem less appealing.
2. **Urbanisation and changing lifestyles:** With more people living in urban areas, there is frequently less room for outdoor play. Playing traditional games that need open fields or certain outdoor settings is getting more difficult. Traditional games are being forgotten because city dwellers lead hectic lives with little time for leisure pursuits.
3. **Western influence and globalisation:** Foreign sports like basketball, football, and tennis were introduced as a result of globalisation and have since gained enormous popularity, particularly among young people. Traditional games like "Oware" or "Pilolo" may be seen as outdated in comparison to these contemporary sports that are more widely reported and recognised worldwide.
4. **Education systems and school curricula:** Many schools place less emphasis on teaching and practising traditional games and more emphasis on academic subjects and mainstream sports. Traditional games are less common in Physical Education Health classes, where students are more exposed to contemporary physical activities like football, volleyball, and athletics.

5. **Cultural shifts and changing values:** Some people no longer view traditional games as valuable or applicable to modern life due to cultural shifts towards modernisation. The practice of traditional games, which are frequently handed down through the generations, is becoming less important as families become more preoccupied with modern lifestyles.

Playing traditional games is a great way to maintain cultural heritage, promote social interaction, and add physical activity to everyday life. Both the body and the mind gain from their holistic approach to health and well-being. The practice and popularity of traditional games have been greatly impacted by contemporary factors like globalisation, urbanisation, and technology. There is hope, by raising awareness and introducing them into cultural and educational initiatives, that these games will be revived and remain relevant in today's society.

Activity 3.1 Exploring traditional games

1. Your teacher will label each corner of your classroom with different games. Upon reading a statement or question, you will move to the game that is related to the statement read.
2. In pairs, list 10 other traditional games. The games should be different to those covered in **point 1** above.
3. With your partner, use the internet to research and explain 10 traditional games. Include their origin, cultural significance and other related information about them.
4. Present to your class on the significance of traditional games to both individuals and society. Use either a visual presentation, a digital slideshow, or infographics.

Reflect on the following

- a. What are some of the fundamental motor skills developed when you engage in traditional games?
- b. Will this experience influence respect for diverse cultural practices and values?
- c. What impact will the games have on mental wellness?
- d. How will you apply the values learned in your daily life?

ARM WRESTLING AND TUG OF WAR

We are now going to shift our focus to look at the specifics of arm wrestling and tug of war.

Arm Wrestling

Ghana is one of the many African cultures where wrestling has been an important traditional sport. Young men frequently used wrestling as a rite of passage to demonstrate their physical prowess, strength, skill, stamina, and competitiveness.

Some communities in Ghana, particularly those in the north, continue to engage in traditional wrestling. These strength-based competitions typically take place during festivals and are not seen as competitive sports.

What is Arm Wrestling?

Arm wrestling is a competitive sport where two competitors demonstrate their strength and technique by using one arm each to push the other's hand down onto a flat surface. It's a power struggle, but it also calls for skill, leverage, and calculated use of body language.

Over the past ten years, arm wrestling has become more and more popular in Ghana, evolving from a festival competition and informal hobby to a recognised sport. The formation of the Ghana Armwrestling Federation (GAF) in 2016 was a major step in developing the sport as a competitive discipline in the country. The Federation's main goal is to advance arm wrestling as a structured sport that fosters youth discipline, strength, and fair competition. Arm wrestling has been incorporated into school sports and inter-district competitions, and GAF also organises national tournaments, which contribute to the fusion of contemporary competitive sports with traditional values of physical strength.

In Ghana, arm wrestling is now a sport of strategy, technique, and endurance rather than just strength, and more and more students are rising to the challenge. Through participation in arm wrestling, individuals can gain valuable experience, build their physical fitness and possibly pursue a future in competitive arm wrestling, both locally and internationally.



Figure 3.7: Men engaged in arm wrestling



Figure 3.8: Women engaged in arm wrestling

Basic rules of arm wrestling

The rules of arm wrestling are straightforward but essential to ensure fairness and safety.

1. **Starting position:** Two contestants stand or sit facing one another. With their forearms vertical to the ground, each participant must have one elbow resting on a level surface, typically a table.
2. **Grip:** The hands of the participants must be tightly clasped together, thumbs interlocked and palms touching. Both players must begin the match with their wrists straight and keep their elbows on the table throughout the match.
3. **Ready, Set, Go:** When the match is about to begin, an official or instructor says, "Go." Then, in an effort to pin the opponent's hand to the surface, both players push against each other's arms.
4. **Winning the match:** A competitor wins a match when they push their opponent's hand down until it touches the surface.
5. **Disqualification:** Any illegal movement, such as pushing with both hands, twisting the arm abnormally, or raising the elbow off the table, is grounds for disqualification.



Figure 3.9: The ready position in arm wrestling

Techniques of arm wrestling

While arm wrestling may seem like a simple contest of strength, there are essential techniques that can help even the physically weaker competitor gain an advantage. These techniques include:

Grip

This refers to the way competitors hold each other's hands before the match begins. The participants' hands must grip each other firmly, with palms touching and thumbs the fingers interlocked. The wrists are straight at the start of the match. Grip strength is important in arm wrestling. The stronger the grip, the harder it is for the opponent to control the hand. It directly influences control over the opponent's hand and the ability to apply force effectively. A strong grip helps maintain stability, prevents the opponent from gaining control and enhances the ability to use leverage and other techniques effectively.

The grip involves

1. **Hand positioning:** This determines how high or low the hand is positioned on the wrist or hand of the opponent.
2. **Finger placement:** The point where the fingers lock around the opponent's hand.
3. **Wrist position:** This includes whether the wrist is flexed, rolled, or straight for an advantage.

Types of grips that are commonly used in arm wrestling and their advantages

Type of grip	Advantage
Toproll grip	The key advantage of this grip is, it weakens the opponent's grip and focuses on the hand control and leverage.
Hook grip	The main advantage is, it brings the match into a close, it is a powerful, focused position, using the bicep and shoulder muscles to win.
Press grip (Shoulder press)	This grip takes advantage of the body's weight and uses pressing power to overwhelm the opponent.
Strap grip	This grip eliminates the focus on hand strength, allowing competitors with weaker grips to compensate with arm and shoulder power.
Over-the-top grip	This weakens the opponent's wrist and grip while allowing you to control the match.
Low hand toproll grip	Its key advantage is that it puts pressure on the opponent's wrist and forces them into a weak defensive position.

Each grip has its strengths and can be used depending on an arm wrestler's strategy, the opponent's technique and their strengths.

Leverage and body positioning: In arm wrestling, leverage refers to the use of body positioning and angles to maximise force and gain an advantage over the opponent. It allows an individual to apply more pressure with less effort by using the body weight and muscle groups more efficiently. Instead of depending purely on arm strength, leverage enables the use of the entire body to effectively control the match.

Wrist control: This is the ability to control and exert dominance over the opponent's wrist position during the game. To obtain a strategic advantage, the wrist must be kept in the proper position while controlling the opponent's wrist.

Forearm strength: The power and stamina of the forearm muscles are referred to as forearm strength, and they are critical for successful participation in sports. Forearm strength is essential for wrist stability, grip strength, and the ability to perform a variety of techniques during a game.



Figure 3.10: The grip in arm wrestling

We hope you have enjoyed learning about arm wrestling. We are now going to cover tug of war.

Tug of War

History of tug of war

Tug of war is one of the oldest and most widely recognised games in history, with its simple concept of two teams pulling on opposite ends of a rope, staying mostly the same over time. Historically, it was employed to celebrate harvests, increase strength, and get men ready for combat. Tug of war was even an Olympic sport from 1900 to 1920, governed by the Tug of War International Federation (TWIF), which still organises world championships and sets the official rules. Although it is no longer part of the Olympics, tug of war remains a popular sport globally. The sport is played both indoors and outdoors, with strict rules on rope length, team size and technique. Tug of war continues to be a popular game at festivals, school sports days and community events around the world, including in Ghana.

What is tug of war?

A competitive sport and leisure activity, tug of war involves two teams pulling on opposite ends of a long rope in an attempt to drag or pull the opposing team across a predetermined line. The game promotes the growth of physical fitness, communication, teamwork, and strategy in addition to being entertaining and competitive. Because each participant adds to the overall pulling power, it tests both individual strength and teamwork.



Figure 3.11: A game of tug of war.

Tug of War in Ghana

For many years, tug-of-war has been a feature of the nation's leisure and cultural activities. Even though it might not have the same official history as other countries, the game has been played extensively in local communities, particularly during festivals, celebrations, local contests, and other social events. From schools to local festivals and special events, the sport has provided entertainment, team-building, and even strength testing for a variety of organisations.



Figure 3.12: National Sports Authority members performing tug of war

Physical and Social Benefits of Tug of War

1. **Unity and dispute resolutions:** In addition to being a good time, tug of war is a sign of solidarity and strength in many Ghanaian communities. In the past, it has been utilised to foster friendships, particularly at celebrations and cultural events. Like other African nations, Ghana frequently incorporates tug of war into larger celebrations as a way to amuse spectators and display players' physical prowess. In rural areas, tug of war is a typical activity at durbars, or traditional gatherings, when people congregate to commemorate their culture, a joyous occasion, or settle conflicts amicably. It may also be used as a way to unite different groups within a community and foster cooperation.
2. **School sports and education:** Tug of war is frequently played in Ghanaian schools, where it is included in some sports programmes and physical education lessons. The game is popular during inter-school and old-school reunion days, where learners compete in teams for prizes and bragging rights. At the primary and secondary school levels, tug of war serves as a fun and simple way to promote teamwork, communication and physical activity.

In schools, tug of war can be used as a practical way to develop learners' strength and endurance while encouraging unity and collaboration. This is especially true during physical education lessons and some school festival days. The game's simplicity makes it easy to organise, and its physical and social benefits make it a popular choice for all involved.

3. **Physical strength and conditioning:** Because of the tremendous pulling and resistance required, tug of war helps strengthen the arms, legs, and core muscles. It also improves cardiovascular fitness because it calls for sustained bursts of strength and endurance.
4. **Teamwork and communication skills:** Teamwork is truly put to the test in tug of war. To coordinate effort and improve capacity for teamwork, players need to communicate well. Tug of war teaches participants how to rely on one another and develop trust, as each player's effort directly impacts the entire team's success.
5. **Mental toughness and resilience:** Tug of war games can build resilience. Even when they are losing ground, teams need to maintain their concentration, optimism, and perseverance. Additionally, it increases self-confidence because participants learn to push themselves and work together to achieve success.
6. **Social engagement and fun:** Beyond just being a game of rivalry, tug of war is a fantastic way to meet new people and have a good time. Due to the mutual support and cooperation it promotes, it is frequently utilised in team-building exercises and cultivates a sense of friendship.
7. **Team-building activity:** In Ghana, tug of war can also be utilised as a team-building activity in workplaces and community organisations. The game is a great way to help participants strengthen their leadership abilities, communication skills, and sense of trust.

Rules of Tug of War

1. **Teams and players:** Each team consists of 8 players, although casual games can have more or fewer players as long as both sides are equal. Players are often arranged with the strongest or most experienced puller, called the anchor, positioned at the back of the line.
2. **Sitting or lying on the ground:** While pulling the rope, players are not permitted to sit or lie down. This is against the regulations and a safety concern. To maintain the fairness of the game, no player may use their feet to dig too deeply into the ground or adopt strategies like "locking", where they lie down and use their body weight to gain an advantage.
3. **Letting go of the rope:** Teams should not let go of the rope deliberately, as this can lead to injury for the opposing team.
4. **Pulling the rope too early:** Teams must wait for the signal (whistle) before starting to pull. A referee will ensure that both teams are ready and that the rope is taut before starting the game with a whistle or a verbal signal like 'Ready, Set, Pull'. Teams must maintain a strong and steady pull while coordinating efforts. The winning team is the first to pull the centre marker past their goal line.

Equipment Needed For Tug of War

Rope	<p>The most essential piece of equipment is a thick, sturdy rope. For safety reasons, the rope should be long enough to provide space for each team to grip and maintain balance without crowding. The rope should be strong enough to withstand significant pulling force.</p> <p>For official competitions, the rope should be around 11 centimetres in circumference and 33.5 metres in length.</p>
Markers	<p>Markers are needed to indicate the starting position (centre line) and the victory lines on either side. These can be made using cones, chalk or any clear marking.</p>
Appropriate footwear	<p>Participants should wear shoes with a good grip to prevent slipping. Safety is a priority, and proper footwear reduces the risk of injury.</p>

Fouls and disqualification

Common fouls include sitting or lying down intentionally, which is called "locking". Wrapping the rope around hands, arms or other body parts is also forbidden because it can lead to serious injuries. Failure to heed the referee's warnings or committing multiple fouls can result in disqualification.



Figure 3.13: Pulling the rope in tug of war

Activity 3.2 A step into the world of arm wrestling and tug of war

1. Watch the following videos on arm wrestling and tug of war. Then, list and explain the various techniques involved in both arm wrestling and tug of war.

Arm wrestling

- a. [Link 1](#)
- b. [Link 2](#)
- c. [Link 3](#)
- d. [Link 4](#)

Tug of war

- e. [Link 1](#)
- f. [Link 2](#)
- g. [Link 3](#)
- h. [Link](#)

Activity	Techniques involved
Arm wrestling	
Tug of war	

2. Discuss with a friend, the core rules of both arm wrestling and tug of war. Ask questions to your classmates and teacher to clarify any points you are not sure of. Make notes on the rules

Arm wrestling rules	Tug of war rules

3. Complete the following warm-up actions with your classmates to prepare your body for arm wrestling and tug of war. Ask your teacher to demonstrate the movements if you are unsure.
 - a. **Arm circles:** Circle your arms for 1-2 minutes. This action will help to warm up your shoulder muscles.
 - b. **Wrist rotations:** Rotate your wrists for 1-2 minutes. This action will help to warm up your wrists and forearms.
 - c. **Dynamic stretches:** Complete a dynamic stretching routine to loosen up your upper body and improve your flexibility. Remember to include shoulder and bicep stretches.
 - d. **Partner hand tug:** With a partner, hold hands with a firm grip. Gently pull against each other’s hands for 20-30 seconds. This will help to build grip and arm endurance.



Figure 3.14: Hand tug example

- Top tip:** If you have a long break between matches, remember it is important to warm up before each match.
4. Your teacher will now guide you through some arm wrestling and tug of war activities. When completing these activities, think about and practice the following:

Arm wrestling: Body positioning, pull technique and resistance.

Tug of war: Stance, grip and hand position and team coordination.
 5. Cool down by completing the following static stretches
 - a. **Shoulder stretch:** Cross one arm over the chest and pull with the other arm, holding it for 15 seconds on each side.

- b. Hamstring stretch: Sit with legs extended and reach for the toes, holding it for 15 seconds.
- 6. Wrist and forearm stretch: Extend one arm straight in front with the palm facing down and use the other hand to gently pull back the fingers towards the body until you feel a stretch in the wrist and forearm. Reflect on the following questions below and share your thoughts with a classmate.
 - a. What strategies did you find effective?
 - b. What did you learn from the activities?

Top tip: *To gain the full benefits from these stretches, technique is key. If you are unsure of how to complete the stretches, ask your teacher for a demonstration.*

Take-Home Activity

1. Design a training plan that includes specific exercises to improve grip strength, arm endurance, and upper body stability for arm wrestling.
2. Develop a team warm-up routine focusing on strength, endurance and coordination exercises to optimise tug of war performance.

EXTENDED READING

Use these links to learn more about tug of war and arm wrestling

- [Link 1](#)
- [Arm wrestling](#)

REVIEW QUESTIONS 3

1. Explain how leverage, grip and technique influence the outcome of an arm-wrestling match.
2. Differentiate between the top roll grip and the hook grip in arm wrestling
3. List two pieces of equipment needed for tug of war.
4. Explain the importance of teamwork in tug of war.

SECTION

4

INDIVIDUAL AND TEAM SPORTS – PART TWO (NETBALL)



PHYSICAL ACTIVITY AND HEALTH

Sports Participation

INTRODUCTION

This section explores the concepts of netball, emphasising throwing and catching, movement and shooting skills. The game shares similarities with basketball but has distinct rules, positions and court structure. The game fosters agility, coordination and teamwork while highlighting strategic play and spatial awareness. The core skills we will cover in this section are footwork, the shoulder pass, the overhead pass and shooting. You will have the opportunity to apply these skills in a game situation.

KEY IDEAS

- Netball is a team sport derived from basketball. It involves two teams of seven players each, intending to score goals by shooting a ball through the opposing team's hoop.
- Throwing in netball is a skill essential for effective ball movement and teamwork.
- Catching in netball is a skill that enables players to maintain possession and effectively pass the ball.
- Shooting in netball is an important skill as it directly determines the team's ability to score.
- Footwork in netball refers to the way players use their feet when they have possession of the ball.
- In netball, technique refers to the specific skills and methods players use to perform various actions on the court.

FOOTWORK, SHOULDER PASS AND OVERHEAD PASS IN NETBALL

Background

The team sport of netball was created in England in the late 1800s as a women's version of basketball. The term "women's basketball" was used at the time, and women played the majority of the games in schools and universities. With the inaugural international match between England and Australia in 1938, the sport rapidly became well-known and expanded throughout the world.

Over time, it evolved into a unique game with distinct rules and characteristics. Two teams of seven players play it on a rectangular court divided into thirds, with a goalpost at each end. The objective is to score points by passing the ball and shooting it into the

opposing team's hoop. Passing, mobility, collaboration, and strategic placement are all emphasised in netball, where each player has designated duties and restricted zones.

Netball is no longer played solely by women. In recent years, netball has gained popularity among men and mixed-gender teams. Globally, the sport is well-liked, especially in Commonwealth nations including South Africa, Ghana, Australia, New Zealand, and Nigeria.



Figure 4.1: Girls' netball.

Men's Participation

1. **Mixed teams:** Many leagues and recreational leagues offer mixed gender netball, where both men and women play together on the same team. This format encourages inclusivity and fosters teamwork across genders.



Figure 4.2: A mixed gender netball game

2. **Men's netball:** Some regions have established men's netball teams and competitions. In these formats, men compete in their leagues, showcasing their skills and promoting the sport among male players.



Figure 4.3: Men playing netball



Figure 4.4: Men playing netball

The Key Elements of Netball

Netball can be broken down into three key elements.



A full netball team is made up of 12 players. This includes seven (7) players on the court and five (5) substitutes. The game is played between two teams of seven players each. Each player has a specific position that defines their role and the area where they are allowed on the court. The positions are:

1. Goal Shooter (GS)
2. Goal Attack (GA)
3. Wing Attack (WA)
4. Centre (C)
5. Wing Defence (WD)
6. Goal Defence (GD)
7. Goal Keeper (GK)

Each position has a specific court area within which they are allowed to operate. This requires players to stay within their designated zones to avoid penalties. By understanding these responsibilities, players can effectively contribute to both the offensive and defensive phases of the game, making it easier to coordinate team efforts on the court.

Note: *A team must have a minimum of five players to be able to take the court.*

Court and Goals

The netball court is divided into three parts called ‘thirds’. The thirds are designated areas for attacking, centre and defence. Each end of the court has a goal post with a hoop, similar to basketball but without a backboard. The aim is to score points by shooting the ball into the opposing team’s hoop. Each end of the court also has a goal circle, a semi-circular area with a radius of 0.9 metres. Only designated players can enter this area to score. In the middle of the court, there is a centre circle with a diameter of 0.9 metres, used for the initial pass at the start of the game and after each goal.

The netball goalpost stands 3.05 metres high and the hoop has a diameter of 38 cm. The total size of the netball court is 30.5 metres (100ft) long and 15.25 metres (50ft) wide.

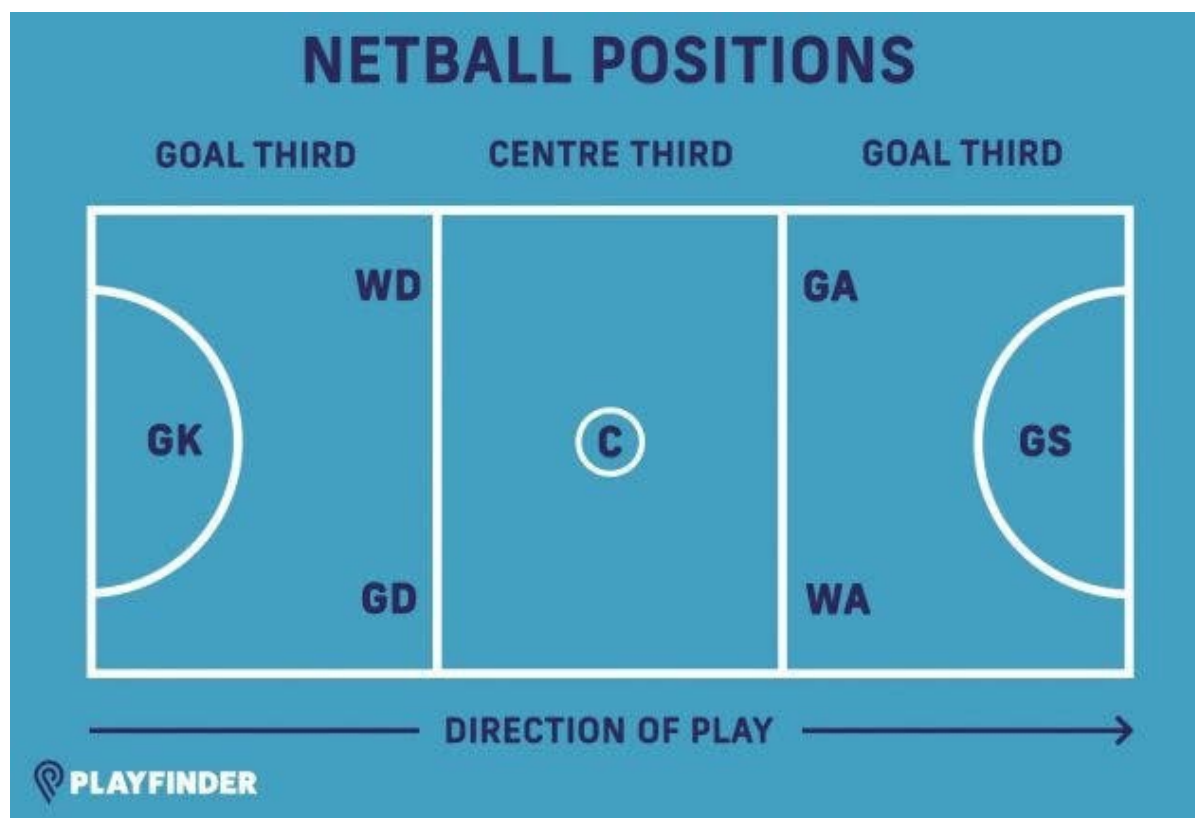


Figure 4.5: Netball positions

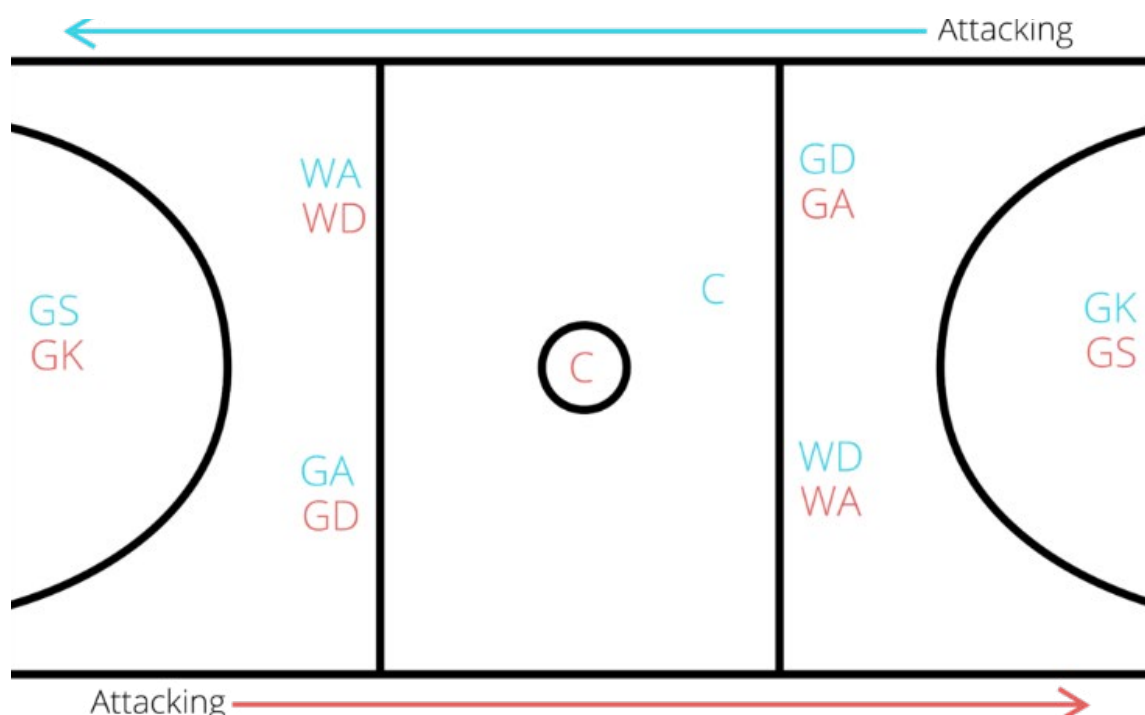


Figure 4.6: Netball positions



Figure 4.7: Goalposts in netball

Where to play netball

Netball can be played on both indoor and outdoor courts, making it a versatile sport that can be played all year round.

Some fundamental rules of the game

1. Players cannot run, walk or drag their foot until they pass or shoot the ball. If they intend to move, they must stop and establish their landing foot and pivot to locate a teammate and pass the ball or shoot. If a player runs, walks or drags the foot upon receiving a pass, it results in a footwork violation and the opposing team is awarded a free pass.
2. The ball cannot be held after receiving it for more than three (3) seconds. It must be passed within three (3) seconds. Holding the ball longer than three seconds results in a free pass for the opposing team.
3. The ball cannot be passed over the centre third of the court. A player must touch the ball within the centre third.
4. Only the Goal Shooter and the Goal Attack are allowed to score goals and they must be within the goal or the shooting circle to do so. If any of them shoot and score outside the goal or shooting circle, the goal is invalid, and a free pass is awarded to the opposing team.
5. Defenders can attempt to intercept passes and shots but must keep a minimum distance of three feet (3ft) from the player with the ball. If they get too close, it results in obstruction and attracts a penalty pass or shot for the opposing team.
6. Players cannot dribble the ball but must pass it or bounce it once to a teammate to move it down the court.
7. Physical contact that impede or restrict an opponent's play is not allowed. Incidental contact is acceptable as long as it does not affect the flow of the game. Contact that impedes the flow of the game results in a free pass or shot to the opposing team depending on where it occurred on the court.

8. Players must not move to areas on the court that are not assigned to them. They must stay within the boundaries of their designated areas. If they move outside their allowed positions, it results in an offside violation. Offside violations result in a free pass to the opposing team from where the infringement occurred.

Scoring and duration

A goal is worth one (1) point, and the team with the most points at the end of the game wins. A standard netball match consists of four (4) quarters, each lasting 15 minutes, with short breaks in between for players to rest and also listen to tactical advice from their coaches.

Core skills in netball

Netball requires a range of basic skills that help learners effectively pass, catch and move on the court while adhering to the rules of the game. Mastering these skills is essential for good gameplay and team coordination. Core or fundamental skills in netball are the physical abilities, techniques and tactics needed to play a successful game of netball. These skills include footwork, passing, catching, shooting, defending, and attacking

Core skills	Description
Footwork	Footwork in netball refers to the rules and techniques governing how players move their feet when they have possession of the ball. Footwork is essential for maintaining balance, allowing quick changes in direction and avoiding turnovers due to footwork violations. The key elements of netball footwork are landing foot and pivoting.
Landing	<p>When a player catches the ball, the first foot that contacts the ground is called the landing foot. Players must keep this foot grounded or pivot on it if they wish to move with the ball. Lifting the landing foot while still holding the ball is considered a footwork violation or foul.</p> <p>In a one-foot landing, the player catches the ball and lands on one foot first, which becomes the landing foot. The player can then bring the other foot down and pivot on the landing foot to change direction. If the player does not want to turn or change direction before passing the ball, they can just pass the ball after bringing the other foot down.</p> <p>In a two-foot landing, the player lands on both feet at the same time. They then choose which foot to pivot on if they wish to turn and look for a teammate to pass the ball to or want to change to get more options before passing the ball. This landing is particularly useful for quick stops and making decisions about where to pass.</p>
Pivoting	This is rotating, swivelling or turning on the ball of the landing foot to turn or change direction. The non-landing foot is free to move in any direction, allowing the players to adjust their position as needed.

Use this link to learn how to perform a one-foot landing and a two-foot landing
[one-foot](#)
[two-foot landing](#)

Passing in netball

Passing is the act of transferring the ball from one player to another. It is a fundamental skill that enables effective teamwork, movement and ball progression on the court. Since players cannot run or walk with the ball, passing is essential for advancing toward the goal and maintaining possession.

Types of passes in netball

Type Of Passes	Description
Chest pass	A chest pass in netball is a fundamental passing technique where the ball is thrown from the passer's chest directly to a teammate's chest. This pass is known for its speed and accuracy and is one of the most commonly used passes in netball. It is effective for short to medium distances and helps in maintaining possession by making it harder for defenders to intercept. You will remember this type of pass from Year 1.
Shoulder pass	A shoulder pass is a one-handed pass thrown from above the shoulder. The passing technique is useful for covering longer distances and bypassing defenders on the court with greater power and height. It is also effective for moving the ball quickly across the court or over defenders. It is commonly used for delivering the ball to a teammate further away such as when creating space during offensive plays.
Overhead pass	An overhead pass is a type of pass where the ball is thrown over the player's head, often with both hands, to cover a longer distance or to get the ball over defenders. The pass is executed by holding the ball above the head, then extending the arms and flicking the wrists to send the ball in a high, arcing course toward a teammate. The primary purpose of the overhead pass is to bypass opponents, especially when they are blocking shorter passes or when a teammate is further down the court. This type of pass is useful for moving the ball quickly over a defender's reach and maintaining possession, especially during fast-paced transitions in the game.
Bounce pass	This is a passing technique where the player throws the ball to bounce once on the ground before it reaches the intended teammate. The bounce should be timed and placed in a way that it arrives accurately to the teammate, making it harder for defenders to intercept. This pass is useful when there is a defender close by or between the player with the ball and his/her teammate because the low path of the ball makes interception more difficult.

How to successfully execute a chest pass

1. **Positioning:** Stand with feet shoulder-width apart for stability and knees slightly bent. Hold the ball at chest height with elbows bent and close to the sides of the body.
2. **Grip:** Hold the ball with both hands, fingers spread around it and thumbs pointing towards each other and forming a “W” shape at the back of the ball. Ensure the ball is touching the pads of the fingers and not just the palms.
3. **Body alignment:** Face the target or teammate with the body weight evenly distributed on both feet.
4. **Passing action:** Step forward with one foot towards the target for added power. Push the ball from the chest by extending the arms forward with a quick snapping motion of the wrists. Release the ball by fully extending the arms and directing it straight toward the target or teammate, aiming at the teammate’s chest to make it easy for them to catch.
5. **Follow through:** After releasing the ball, follow through by pointing the fingers and thumbs in the direction of the pass. This ensures accuracy and helps the ball travel in a straight line.

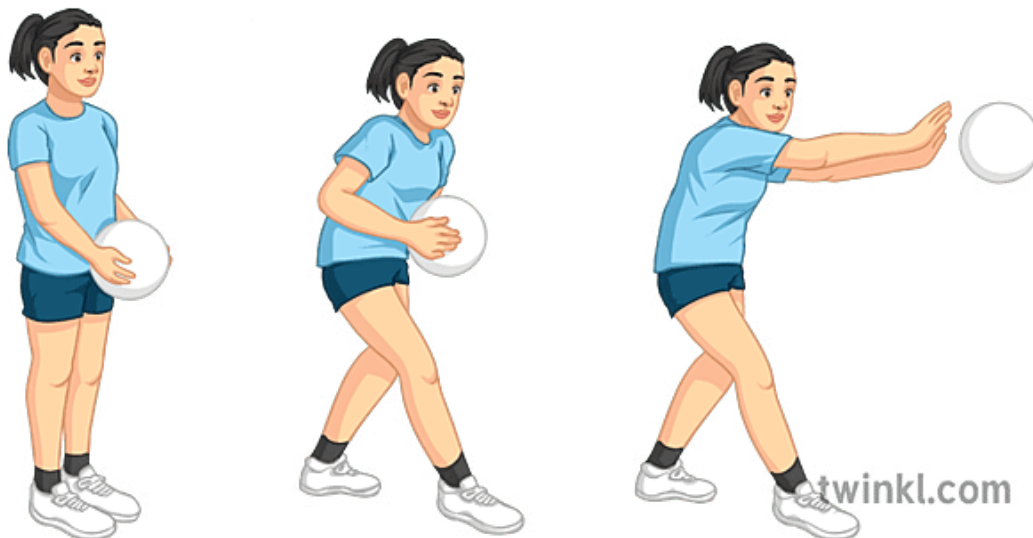


Figure 4.8: Chest pass demonstration

How to effectively perform a shoulder pass

1. **Position the ball:** Hold the ball with both hands and then bring it up to shoulder height on the dominant side. Spread fingers around the ball for a firm grip.
2. **Stance and footwork:** Stand with feet shoulder-width apart and step forward with the non-dominant foot to prepare for the pass.
3. **Aim and look at the target:** Point the non-throwing arm towards the target to help with aiming. Keep an eye on where the ball will be going.

4. **Push and follow through:** Use the shoulder, arm and wrist to push the ball forward. Extend the arm fully as the ball is released and follow through with the fingers pointing towards the intended target.

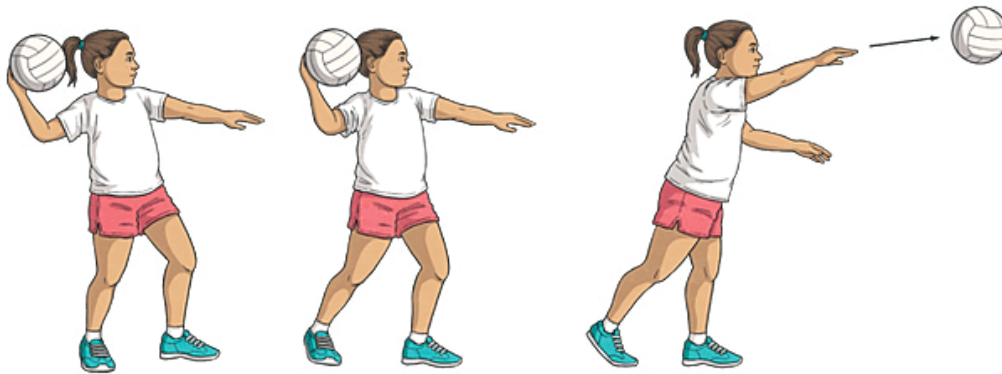


Figure 4.9: Shoulder pass demonstration

How to effectively execute the overhead pass

1. **Grip the ball properly:** Hold the ball with both hands, positioning the fingers around the sides and thumbs at the back with the hands spread to give control over the ball.
2. **Position the body well:** Stand with the feet shoulder-width apart. Position the dominant foot slightly forward to maintain balance and add power to the pass.
3. **Raise the ball overhead:** Lift the ball above the head with elbows slightly bent and look at the target for accurate aiming.
4. **Step forward and release:** Step forward with the dominant foot while extending the arms fully to pass the. Push the ball using the wrists and fingers with a straight and high pathway.
5. **Follow through:** After releasing the ball, follow through with the arms pointing towards the intended target. This helps with accuracy and control.



Figure 4.10: Overhead pass demonstration

How to successfully perform the bounce pass

1. **Hold the ball:** Hold the ball with both hands, keeping it close to the chest.
2. **Step forward:** Step forward with one foot to add power to the pass.
3. **Aim and release:** Aim slightly closer to the teammate that is intended to reach and push the ball toward the ground with a firm but controlled motion. They should **bounce once before reaching the target or teammate.**
4. **Follow through:** Follow through with the arms pointing towards the target or teammate after the pass.

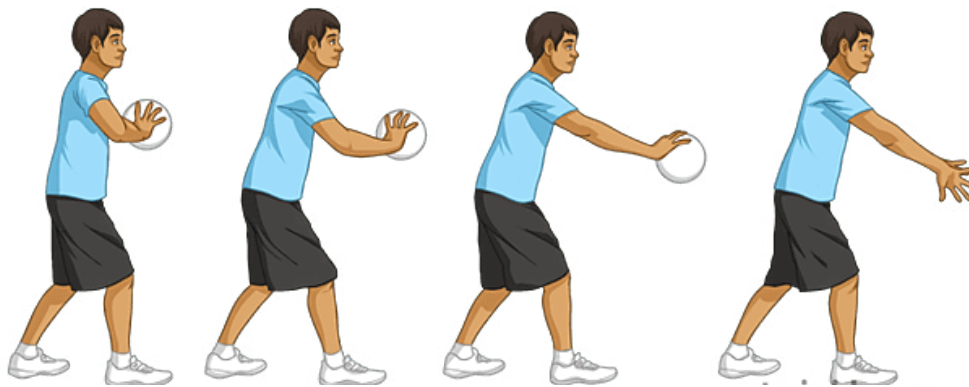


Figure 4.11: Demonstration of bounce pass

Catching in netball

Catching in netball is a fundamental skill that involves receiving the ball securely from a pass that allows a team to maintain possession and quickly transition into the next phase of the play. Proper catching technique is important for accurate passing, quick decision-making, and effective teamwork.

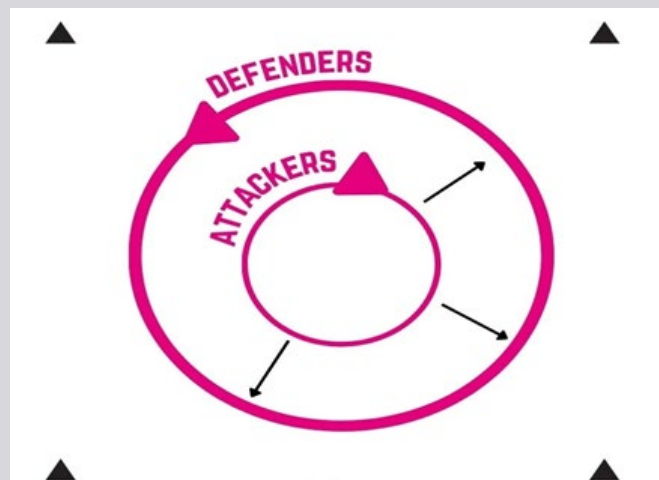
Steps for effective catching

1. **Positioning:** The catcher faces the passer directly with the feet shoulder-width apart. The knees are slightly bent and the body is balanced in readiness to move.
2. **Hand and finger placement:** The catcher extends the arms out towards the ball with hands open and fingers spread wide. The thumbs and the index fingers are positioned in a “W” shape to create a target for the ball.
3. **Tracking the ball:** The catcher must keep an eye on the ball at all times, following it from the hands of the passer to the catcher’s hands.
4. **Absorbing the ball:** As the ball makes contact with the hands, flex the elbows slightly to cushion its force and pull it toward the body to secure it and prevent it from bouncing off the hands.
5. **Securing the ball:** Grip the ball firmly with both hands, keeping it close to the chest. Ensure the fingers are wrapped around the ball with the thumbs pressing against its surface for control.

Activity 4.1 Various techniques in netball

The teacher will lead you through a series of exercises for you to follow. to raise the temperature of the body, increase heart rate, and loosen muscles. If you don't have a teacher present, be sure to warm-up prior to starting any activity.

1. The following activity will help to increase your heart rate, work on your movement skills, reaction time and also have some fun.
 - a. Divide yourselves into two groups. The attacking team and the defending team.
 - b. The attacking team forms an inner circle and the defending team an outer circle.
 - c. At the sound of the whistle the attacking team members run clockwise, and the defending team run anti-clockwise.
 - d. When you hear '**jailbreak**', the attacking team (inner circle) must escape. You should run to the outside of the game area without being tagged by the defenders. The defending team must try to tag as many of the attacking team as you can.
 - e. Points are awarded to the attackers on how many of the team were able to escape without being tagged and to the defenders depending on how many attackers they were able to tag.



Top tip: Remember to listen and act according to signals or instructions from your teacher.

2. Before starting, your teacher will demonstrate a one-foot landing and pivoting in netball. After the demonstration:
 - a. The receiver then passes the ball and joins the back of the opposite group.
 - b. Continue until everyone has had a turn or until your teacher tells you to stop.

Top tip: When passing the ball to your partner focus on proper form and aiming for your partner's chest.

Circle passing

- a. In your group, form a circle with one person standing in the middle.
- b. The person in the middle uses a shoulder pass to send the ball to others in the circle who will return the ball in the same way.
- c. As you feel more comfortable, increase the size of the circle.

Top tip: *In this activity focus on both power and accuracy.*

3. In a group or with a partner, you are going to practice the overhead pass.

Partner passing

- a. Stand facing your partner about 5m-7m apart.
- b. Practice passing the ball to each other using the overhead pass.

Top tip: *When passing the ball, remember to step forward, extend your arms and follow through with each pass.*

Overhead pass relay

- a. In a group, form a line facing another group about 7m apart.
- b. The person in the front of the line should pass the ball to the first person in the other group.
- c. When you have passed, run to the back of the other group.
- d. The relay finishes when the first person reaches the front of the other group.

Top tip: *Work with your team members to complete the activity as quickly as possible.*

Remember to cool down following the activity to return your body to its normal resting state.

4. Watch the following short video on netball and identify the various skills involved in the game. [Netball video](#)
5. List five skills identified in the video.
6. With a partner, discuss the listed skills from the video.
7. Share your thoughts with your class.

Take-Home Activity

1. Reflect and write down two types of passing in netball.
2. Describe the various positions in netball.
3. Describe how to pivot effectively in netball.
4. Select a type of pass or footwork and create a short video demonstrating how to perform the action.

SHOOTING IN NETBALL

What is Shooting?

Shooting in netball refers to the action of attempting to score by throwing the ball through the opponent's goalpost. It is a central skill for scoring points in a netball game. The effectiveness of a player's shooting ability can significantly influence the outcome of a match. For beginners, mastering the proper shooting technique can be challenging, but it is important for success on the court. Shooting in netball involves a one-handed or two-handed shot. Generating power for the shot comes from a combination of leg power and upper-body strength, allowing players to release the ball with a high arm and follow through with a wrist flick.

Proper body alignment and footwork are also critical components of a successful shot. Players must maintain a balanced stance, with their feet positioned shoulder-width apart and their hips and elbows aligned with the goal. The ball should be positioned above the head, with the shooting arm extended and the knees bent to provide a stable base. Developing a consistent and accurate shooting technique requires regular practice and repetition. By breaking down the shooting motion into smaller components and practicing each element separately, players can build muscle memory and improve their overall shooting performance.

Shooting Techniques

Shooting techniques in netball refer to the specific methods and mechanics used by a player to take a shot at the goal in an attempt to score. These techniques involve various aspects such as hand placement, body positioning, footwork, balance, and the motion of releasing the ball. A good shooting technique will optimise accuracy, control, and power to increase the chances of successfully scoring a goal.

In netball, shooting techniques can vary depending on the player's skill level, distance from the goal, defensive pressure, and personal preference. The most common shooting techniques include the one-handed shot and two-handed shot, which differ in how the ball is held and released during the attempt to score.

There are two main shooting techniques in netball

Technique	Description
One-handed shot	The shooter uses one hand to hold and release the ball. This technique is commonly used for accuracy and control, with the non-shooting hand used to steady the ball before releasing it. The shooter typically extends their shooting arm upward and flicks their wrist to guide the ball toward the hoop.
Two-handed shot	The shooter uses both hands to hold the ball before releasing it. Both hands push the ball upward during the shot, providing extra stability and power. This technique is often used by beginners for balance and control, though it may be less accurate than the one-handed shot for more experienced players.

Both techniques are legal in netball, but players often use the one-handed shot for greater precision, especially at higher levels of play.

In netball, shooting is performed by the Goal Shooter (GS) and Goal Attack (GA). Although both positions require excellent shooting skills, there are slight differences in their shooting techniques and responsibilities on the court.

Primary Role, Characteristics, Area of Play, and Responsibilities of Players Playing the Various Positions in Netball

Player	Role	Personal Characteristics
Goal Shooter (GS)	Score goals by shooting from within the goal circle.	<p>They are normally tall.</p> <p>Have strong and excellent shooting accuracy.</p> <p>They have a strong one-handed shooting technique.</p> <p>They have the ability to shoot accurately under pressure.</p> <p>They have excellent footwork skills that help them position themselves well to receive passes.</p> <p>Have strong and excellent shooting accuracy.</p> <p>They have a strong one-handed shooting technique.</p> <p>They have the ability to shoot accurately under pressure.</p>
Goal Attack (GA)	Assists the Goal Shooter in scoring and can also shoot for goals.	<p>They are often shorter than the Goal Shooter.</p> <p>They are often more agile than the Goal Shooter.</p> <p>They have strong mid-range shooting abilities.</p> <p>They have excellent passing abilities that help them feed the Goal Shooter with ball for shooting.</p> <p>They have good vision and court awareness to create scoring opportunities.</p> <p>They have the ability to shoot accurately while on the move.</p>
Wing Attack (WA)	Feed the ball into the goal circle and support the attacking players.	<p>They are very fast on the court.</p> <p>They have good passing skills.</p> <p>They have excellent footwork and ball-handling skills.</p>
Centre (C)	Initiates play, supports defence and attack, and distributes the ball.	<p>They have stamina.</p> <p>They have speed.</p> <p>They are agile.</p> <p>They are smart and think strategically in move down the court and giving passes.</p>

Wing Defence (WD)	Defend against the opposing Wing Attack and help prevent the ball from entering the goal circle.	<p>They are focused and swift to react to the catch ball.</p> <p>They have good passing skills.</p> <p>They have excellent footwork and ball-handling skills.</p> <p>They are good at reading the game and intercepting passes.</p> <p>They are good at limiting the opposing Wing Attack's movements and passing options.</p>
Goal Defence (GD)	Mark the Goal Attack and prevent them from scoring.	<p>They are usually among the taller players of the team.</p> <p>They are focused and have quick footwork.</p> <p>They are agile and quick to react to catch rebounds.</p> <p>They are very good at countering the opponent's set-up to prevent them from scoring.</p> <p>They are good jumpers.</p>
Goal Keeper (GK)	Defend the goal against the opposing Goal Shooter.	<p>They are usually tall so they reach and block shots and passes to make it harder for shooters to score.</p> <p>They are very good communicators, as they effectively communicate with other defenders to ensure cohesive team play and cover the opposing players.</p> <p>They have stamina and endurance ability to keep up with the physical demands throughout the game.</p> <p>They are mentally tough with resilience to handle physical play and the demands of close marking since they are the last line of defence.</p> <p>They are quick and able to keep up with the opposing shooter and intercept the ball.</p>

PLAYER	AREA OF PLAY	RESPONSIBILITIES AND SKILLS
Goal Shooter (GS)	The opposing team's goal third, including the goal circle.	<p>They always position themselves close to the goalpost to receive passes and shoot.</p> <p>They maintain accuracy in shooting and in making quick decisions on shot selection.</p> <p>They work with the Goal Attack to create scoring opportunities.</p> <p>They stay and work within the attacking third and goal circle.</p>
Goal Attack (GA)	The opposing team's goal third, including the goal circle and the centre third.	<p>They move between the centre and attacking thirds to feed passes to the Goal Shooter.</p> <p>They create scoring opportunities and take shots when possible.</p> <p>They assist in moving the ball from the midcourt to the attacking third.</p> <p>They work on quick passes and positioning to dodge defenders.</p> <p>They deliver accurate passes to midcourt players to help move the ball towards the Goal Shooter.</p>

Wing Attack (WA)	The opposing team's goal third and centre third, excluding the goal circle.	<p>They position themselves in the centre and attacking thirds but stay outside the goal circle.</p> <p>They deliver accurate passes to the Goal Shooter and Goal Attack.</p> <p>They work on getting free from defenders and creating passing options.</p> <p>They maintain possession and control the flow of the ball towards the goal.</p>
Centre (C)	Anywhere on the court except the goal circles of both teams.	<p>Cover the whole court except the goal circles, providing options in all areas.</p> <p>Quickly transition the ball from defense to attack and maintain possession.</p> <p>Support both attacking and defensive players, depending on where the ball is.</p> <p>Communicate and ensure team positioning and flow on the court.</p>
Wing Defence (WD)	The team's goal is third and centre third, excluding the goal circle.	<p>They stay in the centre and defensive thirds, marking the Wing Attack.</p> <p>They apply pressure on the Wing Attack to intercept or disrupt passes.</p> <p>They block passing lanes and support the Goal Defence in marking attackers.</p> <p>They quickly transition to offence and provide passing options when the team gains possession.</p> <p>They work closely with other defenders to coordinate defensive plays.</p>
Goal Defence (GD)	The team's goal third and centre third, including the goal circle.	<p>They operate in the defensive third and goal circle, blocking shots and intercepting passes.</p> <p>They apply close marking on the Goal Attack, aiming to reduce their scoring opportunities.</p> <p>They catch rebound or missed shots and clear the ball to the Wing Defence or the Centre.</p> <p>They support the goalkeeper in guarding the goal circle.</p>
Goal Keeper (GK)	The team's goal third, including the goal circle.	<p>They stay in the defensive third and goal circle to block shots and defend the goal.</p> <p>They stay close to the Goal Shooter, restricting their movement and access to the ball to take a shot.</p> <p>They rebound missed shots and initiate the counter-attack for their team to regain possession or clear the ball away from the goal area.</p> <p>They communicate with the Goal Defence to ensure both attackers are marked.</p>

Getting Ready to Shoot

1. The shooter must wholly stand inside the goal or shooting circle. (According to netball rules, a goal can only be scored when standing in the goal or shooting circle).

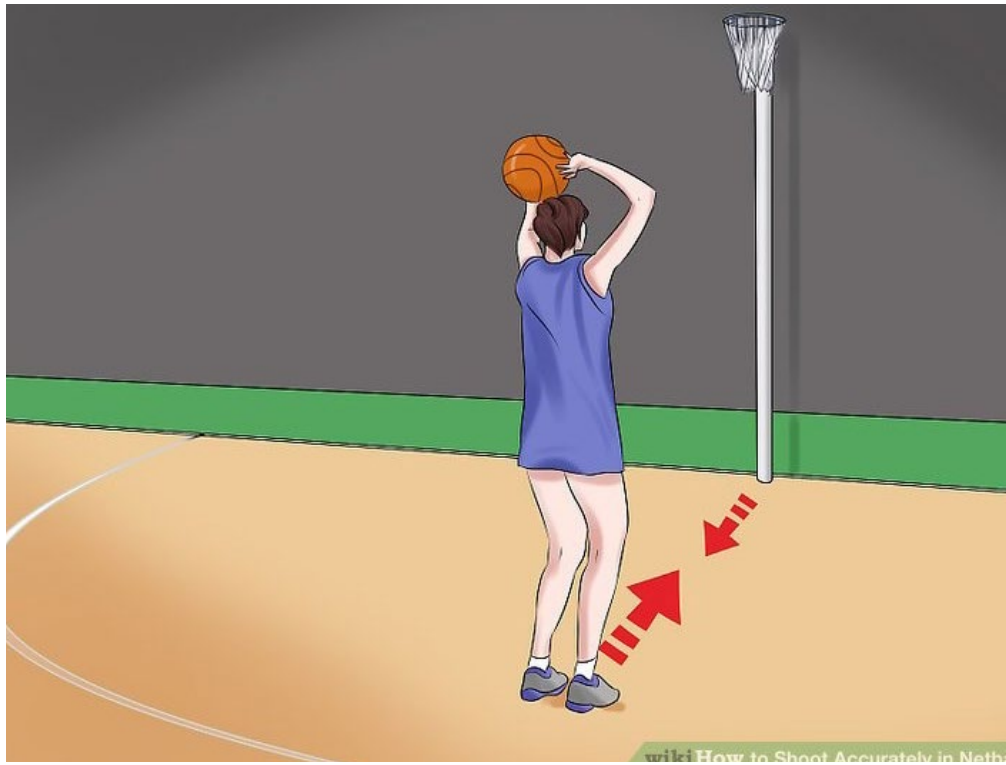


Figure 4.12: Shooting in netball

2. Position the body to shoot: Align the body with the netball post.
3. Stance: Proper stance is the foundation of effective shooting technique.
4. The feet and arms should be hip or shoulder-width apart.
5. Stand close to the hoop with the hip, shoulders, and elbows facing the goal post.



Figure 4.13: Stages of shooting in netball

One-handed Shot Technique

1. Hold the ball with both hands, with the shooting or dominant hand positioned under and the non-dominant or shooting hand on the side for support.
2. The fingertips should be to cradle the ball softly. For better control, ensure that the gap between the palm and the ball is minimal.
3. Once the ball is firmly in the hands, extend the hand with the ball high above the head with the elbows near the ears and close the forehead.

Watch the following video tutorial on the one-handed shot in netball: [One-handed shot](#)

Shooting the netball

1. Bend the elbows and the knees at the same time. Keep the elbows near the ears and close to the forehead, and only move the top part of the arm. (Think of the elbow as a lever when shooting and only move the top portion, i.e. forearm area).
2. Focus on the goalpost and aim for the centre of the hoop above the net as the ball is released to shoot, and flick the hand forward with the shooting arm.
3. Straighten the elbows and knees and then release the ball.
4. Push the ball up in an up-and-over motion toward the ring. The knees must be bent before the release of the ball. The power of the shot comes from the knees.
5. Flicking the hand will cause the ball to spin backward after it is released. This helps with the accuracy of the shot. The back must be kept straight as the ball is released.
6. Shooting from different positions within the shooting circle will help in becoming comfortable with varying distances from the hoop.

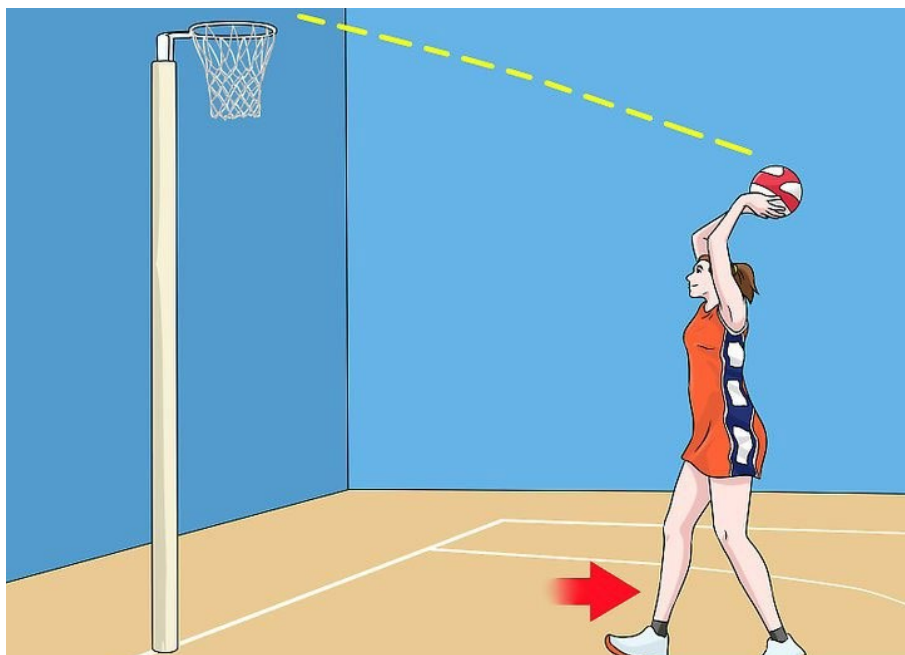


Figure 4.14: Focusing on the goalpost and aiming for the centre of the hoop above the net before shooting



Figure. 4.15: Bending the elbows and knees to generate power for shooting.



Figure. 4.16 Straightening the arms, knees and the body to shoot the ball



Figure. 4.17 Releasing the ball in an up-and-over motion toward the ring

Remember the BEEF acronym

The shooting technique can be overwhelming because there are so many things to remember. **BEEF** can help and make it easier for you to remember the key aspects of the shooting process.

1. **B** stands for balance. Keep the feet hip or shoulder width apart and facing the goal.
2. **E** stands for eyes. Keep your eyes focused on where the ball is to go.
3. **E** stands for elbow. Keep the elbows close to the ears and near the forehead as you shoot.
4. **F** stands for follow-through. Always flick the hand and wrist at the end of the shot pointing towards the goalpost.

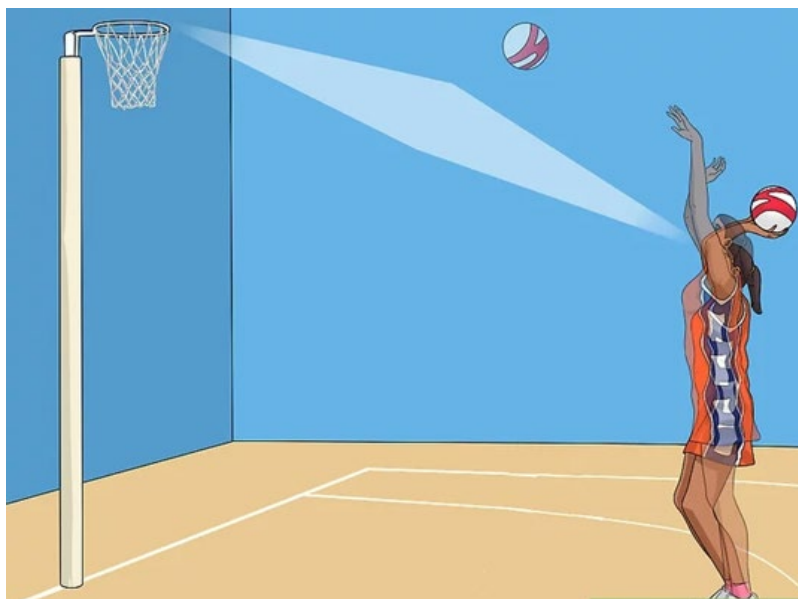


Figure. 4.18 Practicing the BEEF in shooting

Avoiding Common Errors When Shooting

1. Use the fingers when shooting
2. Keep the fingers relaxed and rest the ball on the pads of the fingers. When the fingers are too straight or stiff, the ball will not be held in the correct position.
3. Ensure that the fingers are spread out on the ball.
4. Be careful not to apply pressure to the ball with the supporting hand. Applying pressure with the supporting hand can change the path of the shot.
5. Do not hold the ball too tight, this will make releasing the ball difficult.
6. Continuing practice will help in correctly balancing the ball making sure it is stable on the pads of the fingers when shooting.



Figure. 4.19 Resting the ball on the pads of the fingers for shooting



Figure 4.20: Putting pressure on the ball during shooting using the free hand

Maintain the correct shooting stance

1. Make sure the feet are in a good position. If the feet are not hip or shoulder width apart, the player may be off balance when shooting.
2. Keep the feet parallel and do not let one foot be too far in front of the other.
3. Do not be too close to defenders while shooting.
4. The hips and shoulders should be in a straight line.
5. Do not move the shoulders forward which will cause the whole body to move forward. Leaning forward when shooting will change the path of the shot.
6. When having trouble keeping the hips and shoulder aligned, have someone hold their shoulders back when shooting so that the correct position is felt.

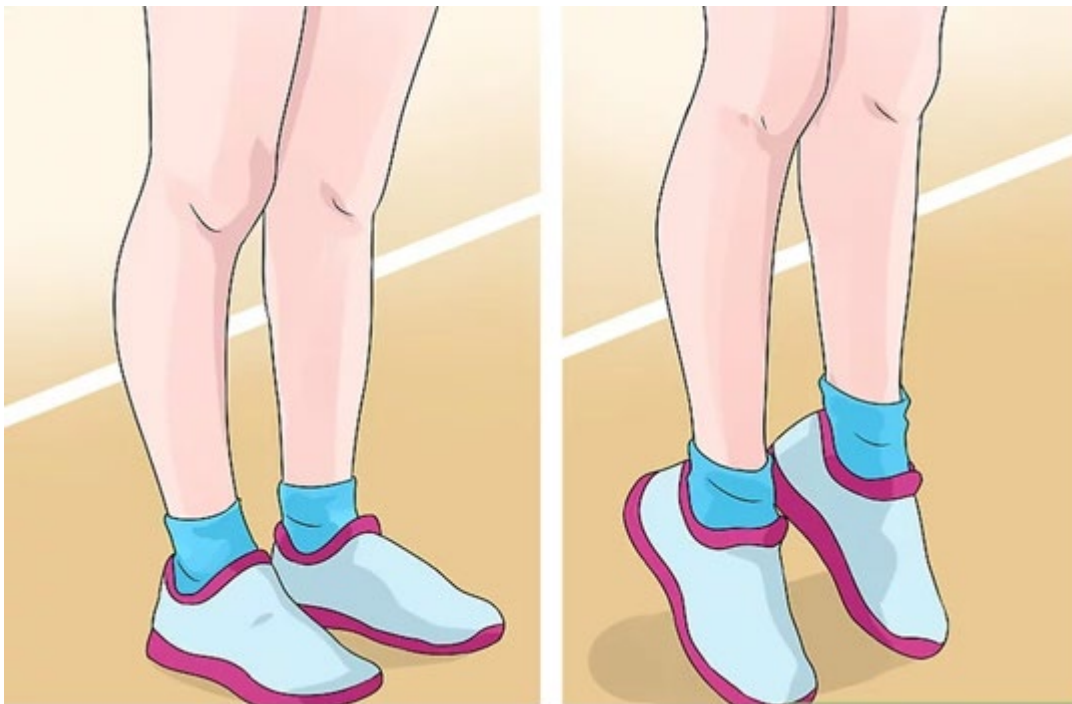


Figure 4.21: The correct shooting stance.

Activity 4.2 Techniques in shooting

1. Warm up

Jogging and movement drills: Start with a light jog around the court, then progress to movements specific to netball, like side shuffles and high knees.

Dynamic stretches: Include stretches for the legs and arms. Examples include lunges, arm circles, and trunk twists. Focus on your flexibility and range of motion, which are essential for netball.

Ball familiarisation drills: With a partner practice passing drills, including chest passes, shoulder passes and overhead passes. This will help you to become more comfortable with the ball and build hand-eye coordination.

Footwork drill: Practice quick steps and pivots to improve your footwork. Set up cones or markers to move around while maintaining your balance and control.

2. Technique practice

Stand close to the netball post 1-2m away. Target the hoop of the netball post and shoot into it. Your teacher will be on hand to give tips on correct shooting techniques.

- a. Spot shooting:** Your teacher has marked out different shooting spots around the goal circle. These will be approximately 1m, 2m, and 3m from the goalpost. With a partner, start with the 1m marker and once successful, move to the 2m and 3m markers. Your partner will catch the rebound from your shot and pass the ball back to you for your next attempt. Once you have successfully completed all three distances, swap roles with your partner.
- b. Catch and shoot:** With a partner, start at the edge of the goal circle and run towards the post, receive a pass from your partner, and shoot immediately. With your teacher's direction, vary the passing angles and introduce pivoting before shooting.
- c. Pressure shooting:** Let's now introduce a defender. In pairs, one person acts as a defender and applies light pressure while the other person (shooter) attempts to score by shooting into the hoop of the netball post.
- d. Around the world:** In groups, shoot from spots marked-up by your teacher. Take a shot from each spot only moving to the next spot when you make the previous shot. The first group to have all team members complete all shots is the winner.

Top tip: *Support your teammates by observing their shooting technique and providing feedback to help them improve. Remember to celebrate all of your teammates' successes.*

3. Share your experience with your classmates.

- a. What did you find interesting?
- b. What do you need to pay more attention to?
- c. What steps will you take to improve your netball shooting skills?

THE NETBALL GAME

By progressively building skills in this section, we are now ready to incorporate these skills into gameplay. The game of netball begins with a centre pass, which is taken by the team that wins the coin toss. The centre pass then alternates between the teams, regardless of which team has scored.

Play restarts after every goal scored and after each quarter. Before the whistle, all players must stand at their assigned areas or designated positions on the court. When the umpire blows the whistle to start play, the goal attack, goal defence, wing attack and wing defence players can move into the centre third to receive the pass. The Centre (C) must stand in the centre circle with the ball. They can either have both feet inside the circle or one foot completely in the circle and the other foot outside. Then, the Centre (C) passes the ball to a teammate from inside the centre circle.



Figure 4.22: Ready to perform a centre pass



Figure 4.23: Standing in the centre circle with one foot

A goal is scored when the ball is successfully shot through the hoop from within the shooting circle. Teams can make substitutions, typically during breaks in play or at quarter-time. The team with the most goals at the end of the match is declared the winner. If the match ends in a tie, depending on the league or tournament rules, extra time or a shootout may be used to break the tie.



Figure 4.24: Goal scoring in netball

A full match is divided into 4 quarters. Each quarter is 15 minutes with a 3-minute break after the 1st and 3rd quarters. The half-time interval is 5 minutes. Teams switch ends at halftime after the first two-quarters of the game. (Note: Times are reduced in primary and senior high school where each quarter lasts 10 minutes).

1 st Quarter 15 minutes	3 minutes break interval	2 nd Quarter 15 minutes	5 minutes time interval	3 rd Quarter 15 minutes	3 minutes break interval	4 th Quarter 15 minutes
---------------------------------------	-----------------------------	---------------------------------------	----------------------------	---------------------------------------	-----------------------------	---------------------------------------

Figure 4.25: Match duration and breaks

Whether played competitively or recreationally, netball offers an exciting and engaging experience for players and spectators.

Key Skills to Apply in a Game Situation

1. **Passing and catching:** Passing and catching are fundamental to maintaining possession and creating attacking opportunities. In a game, you should:
 - a. *Use different types of passes:* Use various types of passes (e.g. chest pass, shoulder pass, overhead pass, bounce pass) based on the distance of your teammate and defensive pressure.
 - b. *Make quick decisions:* Decide which type of pass is most appropriate at the moment to avoid interceptions and maintain flow.
 - c. *Catch accurately:* Secure the ball quickly and efficiently, minimising errors or mistakes that could lead to your team giving an advantage to your opponent.

Application in a game

- Players should focus on positioning themselves to receive the ball and pass quickly to maintain momentum.
 - Work as a team to move the ball up the court using short, sharp passes to outwit defenders.
2. **Movement and positioning:** Effective movement off the ball and proper positioning are crucial for attacking and defending. In a game, you should:
 - a. *Create space:* Use footwork and dodging techniques to move into open space, making it easier for teammates to pass to you.
 - b. *Stay within designated areas:* Understand the court positions and know where each player can legally move. For example, a Goal Shooter (GS) is confined to the attacking third and the shooting circle, while a Wing Attack (WA) must stay out of the shooting circle.
 - c. *Support teammates:* Move into passing lanes to offer support and maintain team flow during offensive plays.

Application in a game

- Attackers should use feints and sudden directional changes to lose defenders and get open for a pass.
 - Defenders need to stay goal-side of their opponents to block passes and limit their space.
3. **Shooting:** If you are in a shooting position (Goal Shooter (GS) or Goal Attack (GA)), you should apply the following:
 - a. *Accuracy:* Focus on precision when aiming for the goal, using the correct shooting techniques.
 - b. *Be composed under pressure:* Shoot confidently even with defensive pressure from the goalkeeper (GK) and Goal Defence (GD).
 - c. *Position yourself quickly:* Use footwork and movement to get into the shooting circle and take a clear shot without committing stepping violations.

Application in a game

- Goal Shooter (GS) and Goal Attack (GA) should communicate and position themselves effectively to receive passes and make shooting attempts from advantageous angles.
 - They should also be prepared to follow up on rebounds if a shot is missed, applying pressure to the defence.
4. **Defence:** Defensive skills such as blocking, intercepting, and marking are essential for preventing the opposing team from scoring. In a game, you should apply:
- a. *Man-to-man defence:* Mark opponents closely to restrict their movement and passing options but must be mindful of the **obstruction** and the **contact rules** of netball games.
 - b. *Positioning and anticipation:* Stay between your opponent and the goal and anticipate passes to intercept.
 - c. *Timing of defence:* Apply pressure without infringing the three-foot (0.9 metres) distance rule during marking.

Application in a game

- Defenders need to communicate and cover their assigned players effectively, using agility and quick reflexes to intercept passes or block shots.
- The Goalkeeper (GK) and Goal Defence (GD) should work together to prevent shooting opportunities, using their body positioning to force the shooter into taking difficult shots.

Activity 4.3 Mini-game for Integrated Skills in Netball

1. Warm-up (5 minutes)

The teacher will guide you through a series of exercises to follow, designed to raise your body temperature, increase your heart rate, and loosen your muscles. This will include:

- a. Jogging (1 minute): Light jog around the field or court to increase your heart rate and get your blood flowing.
- b. High Knees (15 seconds): Run in place, lifting your knees towards your chest as high as possible.
- c. Butt Kicks (15 seconds): Jog in place, kicking your heels back to touch the glutes or the butt.
- d. Arm Circles (15 seconds each direction): Extend your arms out to the sides and make small to large circles, then reverse.
- e. Hip rotations (15 seconds): With your hands on your hips, rotate your hips in a circular motion, both clockwise and counterclockwise.

Ball drops (1 minute)

- f. With a partner, with one person holding a ball.
- g. The ball-holder drops the ball without warning, and the other person must react quickly and catch it before it bounces twice.
- h. Switch roles after a few drops.

Figure 8 Movement (1 minute)

- i. There will be two cones set up two about 3-4 metres apart.
- j. **Weave in** a figure of 8 pattern around the cones at a high pace.
- k. Focus on quick, controlled movements and using proper footwork when changing direction.

2. Review of game rules

Form a group with 3 of your classmates and review the rules of netball. List five rules of netball and share these with your classmates. Add any additional rules you hear to your list.

3. One-foot grounded Game

- a. Form a team comprising 7 members. Assign yourselves to the various positions.
- b. Explain the rule of 'one foot grounded' in netball. What happens if this rule is violated?
- c. What are the differences between a chest pass, a shoulder pass and an overhead pass in netball
- d. Why is it important to communicate before making a pass?

Take-Home Activity

Add to your knowledge on the game of netball by conducting further research on the game of netball. Consider joining a local team to practice and build on your skills.

EXTENDED READING

Use the links below to learn more about netball

- <https://netball.com.au/sites/default/files/2023-12/World%20Netball%20-%20Rules%20of%20Netball%202024>.
- <https://www.bing.com/videos/riverview/relatedvideo?q=netball+pdf&mid=3F5FA3D1CB40BDF30A2A3F5FA3D1CB40BDF30A2A&FORM=VIRE>
- <https://www.bing.com/videos/riverview/relatedvideo?q=netball+pdf&mid=D A766679FD9CBFF88675DA766679FD9CBFF88675&FORM=VRDGAR>
- <https://www.bing.com/videos/riverview/relatedvideo?q=netball%20pdf&mid=6052A69CF82FCCEAAA356052A69CF82FCCEAAA35&ajaxhist=0>

REVIEW QUESTIONS 4

1. What are the key techniques required for a successful netball shot?
2. What is a 'pivot' in netball? How is it used to maintain possession of the ball?
3. Explain the rule of 'one foot grounded' in netball. What happens if this rule is violated?
4. What are the differences between a chest pass, a shoulder pass and an overhead pass in netball?
5. Why is it important to communicate before making a pass?

SECTION

5

HEALTH AND WELLNESS - PART TWO DISEASE PREVENTION



PHYSICAL ACTIVITY AND HEALTH

Health and Wellness

INTRODUCTION

This section begins by introducing the concept of disease prevention. We will explore how vaccination and immunisation help prevent infectious diseases by building immunity for individuals and communities. The importance of personal responsibility in preventing disease spread and promoting public health will also be discussed. You will learn how to take charge of your health and contribute to reducing diseases in your community.

Next, we'll focus on personal hygiene practices that help prevent the spread of germs and infections, promoting cleanliness and health. We'll also examine how good hygiene impacts physical well-being, social confidence, and overall health.

Additionally, we will cover menstrual health, including safe and hygienic ways to manage menstruation. This includes learning about menstrual products and understanding how proper hygiene prevents infections, enhances comfort, and supports dignity during menstruation.

By the end of this section, you will know to develop healthy hygiene habits, prevent diseases, and foster a positive self-image.

KEY IDEAS

- **Vaccination:** The medical process that helps protect individuals from infectious diseases.
- **Immunisation:** The process of protecting individuals from infectious diseases by stimulating the immune system to recognise and fight specific pathogens.
- **Disease prevention:** This refers to actions, strategies, or measures taken to prevent the onset of illness or diseases in individuals or populations.
- **Menstrual health:** Menstrual health refers to the physical, mental, and social well-being related to menstruation.
- **Menstrual hygiene:** Menstrual hygiene refers to the practices and products used to manage menstruation in a safe, healthy, and dignified manner.

DISEASE PREVENTION

Immunisation and Vaccination as a Form of Disease Prevention

Prevention, also known as preventive health, is any action taken to maintain people's health and prevent or avoid the risk of poor health, illness, injury, and premature death. Prevention focuses on increasing the chances for individuals to stay well for as long as possible.

The World Health Organisation (WHO) defines prevention as approaches and activities aimed at reducing the chances that a disease or disorder will affect an individual, interrupting or slowing the progress of the disorder or reducing disability (WHO, 2004).

Immunisation

Immunisation is a process by which a person becomes protected against a disease through vaccination. This term is often used interchangeably with vaccination or inoculation. Immunisation is a public health intervention that protects individuals from infectious diseases by stimulating the immune system to develop immunity against specific pathogens. It is normally administered through vaccines. Immunisation has been instrumental in reducing the spread of infectious diseases, preventing severe illness and saving millions of lives globally. Widespread immunisation efforts contribute to herd immunity, where a large portion of a population becomes immune, thereby reducing the likelihood of disease transmission and protecting vulnerable groups who cannot be vaccinated. Regular immunisations are essential for both individual and community health, supporting disease prevention on a global scale. Immunisations are also called needles, shots, or jabs.

Immunity (protection) by immunisation is similar to the immunity a person gets from disease, but instead of getting the disease, the individual gets a vaccine. This is what makes vaccines such a powerful medicine. Most vaccines are given by needle (injection), but some are given by mouth (orally) or sprayed into the nose (nasally).

List of key terms related to vaccination and immunisation, along with brief definitions

These terms will help you discuss and understand the science and significance of vaccination and immunisation.

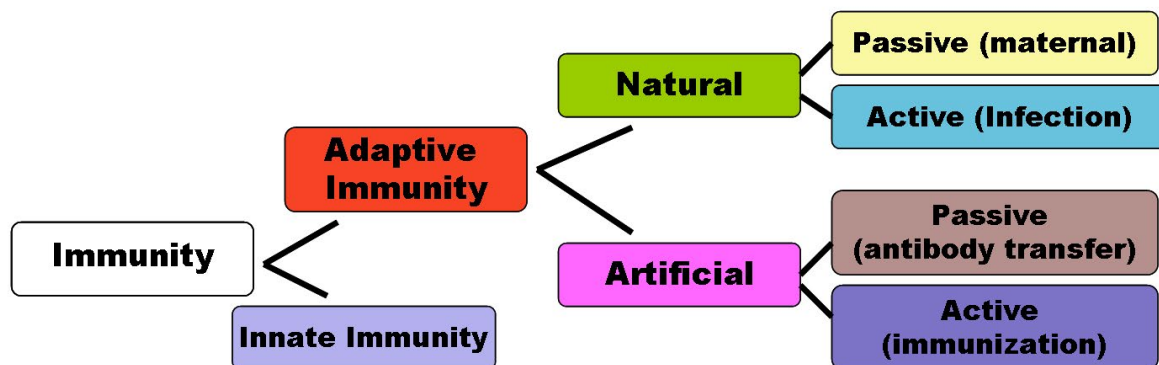
KEY TERMS	DEFINITION
Antigen	A substance (often part of a virus or bacteria) that triggers an immune response, causing the body to produce antibodies.
Antibody	A protein produced by the immune system to neutralise or destroy foreign substances like bacteria and viruses.

Immunity	Protection against a particular disease. Immunity can be acquired through vaccination or by recovering from the disease.
Vaccine	A biological preparation that provides immunity to a specific disease. Vaccines often contain weakened or inactivated parts of a pathogen to stimulate an immune response.
Herd immunity	When a high percentage of the population is immune to a disease (usually through vaccination), providing indirect protection to those who are not immune.
Booster shot	An additional dose of a vaccine is given periodically to “boost” the immune system’s response and extend immunity.
Pathogen	A microorganism (such as a virus, bacteria, or fungi) that can cause disease.
Inactivated vaccine	A type of vaccine made from pathogens that have been killed or inactivated, so they cannot cause disease.
Live-attenuated vaccine	A vaccine containing a weakened form of the live pathogen that induces immunity without causing illness.
Adjuvant	A substance added to a vaccine to enhance the body’s immune response to the vaccine.
Side effect	Any unintended effect of a vaccine can range from mild (e.g., soreness at the injection site) to more severe, although severe reactions are rare.
Efficacy	The ability of a vaccine to produce the desired immune response and prevent disease under ideal conditions (e.g., in clinical trials).
Effectiveness	How well a vaccine works in the real world, outside of controlled trials.
Vaccine preventable disease (VPDs)	Diseases that can be prevented through vaccination, such as measles, polio, and influenza.
Contraindication	A specific situation or condition where a vaccine should not be given because it may harm the individual (e.g., certain allergies or medical conditions).
Vaccine schedule	A series of recommended vaccinations, often starting in infancy, designed to provide immunity over time against various diseases.
Immune memory	The immune system’s ability to “remember” a pathogen after exposure, allows for a faster and stronger response upon re-exposure.
Outbreak	A sudden increase in cases of a particular disease in a specific area or population.

Types of immunities

There are two types of immunity.

1. **Naturally acquired active immunity:** This is immunisation that occurs after an infection. This type of immunity develops when the body's immune system responds to a pathogen by producing antibodies and memory cells after exposure to the infectious agent. This response helps protect against future infections by the same pathogen.
2. **Artificially acquired immunity:** This is an immunisation that is obtained through medical intervention rather than through natural infection. There are two main types.
 - a. **Artificially acquired active immunity:** This is achieved through vaccination, where a person is exposed to the weakened or inactivated form of the pathogen (or part of it) to stimulate the immune system to produce antibodies and memory cells. This provides long-term protection without causing illness.
 - b. **Artificially acquired passive immunity:** This is achieved by directly administering antibodies into the body, normally through immunoglobulin therapy or antiserum. This method provides rapid but short-term protection, as it does not stimulate the immune system to produce its antibodies. It is commonly used in situations where immediate immunity is needed, such as after exposure to diseases like rabies or hepatitis B.



Vaccination

Vaccination is a medical process of administering a vaccine to stimulate a person's immune system to recognise and fight specific diseases. Vaccines are biological preparations that contain weakened or inactive, killed, or fragmentary forms of a particular organism (antigen) that trigger an immune response within the body when introduced into the body. Vaccines prompt the immune system to recognise and remember how to fight diseases caused by viruses or bacteria. They do this by introducing a weakened, killed, or partial form of the disease into the body without causing the actual illness. This helps the body respond more effectively if it encounters the disease in the future.

Most people are fully protected against a particular disease after getting vaccinated. In rare cases, vaccinated people can still get the disease because the vaccine gives them only partial protection. This is more common in people with underlying medical conditions that affect their immune system. Although these people may still get the disease, they will most likely get a milder sickness and are less likely to suffer serious complications.



Figure 5.1: An example of a vaccine



Figure 5.2: Giving a malaria vaccine to a baby. Source: www.newscientist.com



Figure 5.3: Giving a vaccine by mouth (orally)



Figure 5.4: Giving a vaccine by spraying into the nose (nasally).

How vaccines work

When a person is vaccinated, the person's body is tricked into thinking that it has been infected with the disease. It makes antibodies that kill the germs. These antibodies stay in the body for a long time and remember how to fight the germ. If the germs from the disease enter the body in the future, the antibodies destroy the germs before the person can become sick. It is much safer to get a vaccine than the disease.

Types of vaccines

Live-attenuated vaccines	This vaccine contains a weakened form of the germ. For example, vaccines for Measles, Mumps, Rubella (MMR), and Chickenpox vaccines.
Inactivated vaccines	This type of vaccine contains a killed version of the germ. For example, vaccines for Polio and Hepatitis A.
Subunit, Recombinant, Polysaccharide and Conjugate vaccines	These vaccines contain only the essential parts of the germ, like its protein or sugar. They are used against the Human Papillomavirus (HPV) and the Hepatitis B virus.
Messenger RNA (mRNA) vaccines	This vaccine contains part of the virus's genetic material, which instructs cells to produce a protein that triggers an immune response. For example, COVID-19 vaccines.
Viral vector vaccines	Use a different virus to deliver instructions to produce an immune response. For example, the AstraZeneca COVID-19 vaccine.
Community immunity	Community immunity, which is also known as herd immunity, refers to a situation where a high percentage of a population in a particular community, region, nation, or world is vaccinated, reducing the overall spread of a particular disease. Community immunity protects those who cannot be vaccinated, such as newborn babies, individuals with certain health conditions or allergies to vaccine components. If enough people are vaccinated, it is harder for the disease to spread to those people who cannot have vaccines. This means vaccination helps to protect oneself and others around them.

Watch the following video on community/herd immunity



[Herd immunity](#)

Differences Between Vaccination and Immunisation

Vaccination differs from immunisation in the following ways;

1. Definition

Vaccination is the process of administering a vaccine to stimulate the body's immune response.

Immunisation is the process by which a person becomes protected against a disease, often as a result of vaccination.

2. Purpose

The purpose of *vaccination* is to introduce a harmless form of pathogens (antigens) that help the immune system to recognise and fight similar pathogens.

The purpose of *immunisation* is to build immunity or resistance to a specific disease.

3. Method

Vaccination normally involves the injection of a vaccine, which contains weakened or inactive parts of a particular organism.

Immunisation can occur naturally through exposure to the disease or artificially through vaccination.

4. Immediate effects

Vaccination itself does not immediately create immunity; it initiates a process that leads to immunity.

Immunisation results in the body's ability to resist future infections; it is the outcome of the immune system's response.

5. Side effects

Vaccination may cause mild side effects, like soreness at the injection site or mild fever, as the body builds its response.

Immunisation itself does not have side effects; any side effects are normally associated with the vaccination process.

6. Scope

Vaccination is one method of achieving *immunisation* whereas immunisation can occur against multiple diseases over a person's lifetime through different vaccines or natural exposures.

7. Targeted pathogens

Vaccination targets specific pathogens and is often specific to one disease at a time.

Immunisation protects against specific pathogens and, over time, may cover multiple diseases depending on the vaccines or exposures received.

8. Duration of protection

Some *vaccinations* provide lifelong protection, while others may require booster doses to maintain effectiveness.

Immunisation duration varies, as some forms provide lifelong immunity while others require boosters.

9. Administration

Vaccinations can be administered via injection, oral drops or nasal sprays, depending on the disease and age group.

Immunisation is the end state of immunity, where the body can recognise and defend against a specific pathogen.

10. Timing

Vaccination is an event (this means it is a one-time or series-based procedure as a medical intervention).

Immunisation is a process that continues as the immune response builds.

11. Focus

Vaccination focuses on exposure to a disease-causing organism to prompt the immune system learning without causing illness.

Immunisation emphasises the outcome where the body develops the ability to protect against illness after exposure to antigens.

12. Direct action

Vaccination is an external action taken by healthcare providers.

Immunisation is an internal response within the body of an individual.

13. Dependency

Vaccination depends on medical intervention.

Immunisation can occur naturally without medical intervention.

14. Specificity

Vaccination targets specific diseases with vaccines.

Immunisation can occur broadly as immunity develops through various exposures.

15. Effectiveness

Vaccination efficacy can vary.

Immunisation effectiveness depends on the immune system's response.

16. Repetition

Some *vaccines* require multiple doses for effectiveness.

Once *immunised*, a person may have lifelong or long-term immunity.

17. Outcome

The goal of *vaccination* is to stimulate the immune system.

The outcome of *immunisation* is actual protection against infection.

Similarities Between Vaccination and Immunisation

1. **Disease prevention:** Both aim to prevent disease by building resistance.
2. **Immune system involvement:** Both processes involve the activation of the immune system.
3. **Public health benefits:** Both contribute to community health and help reduce the spread of diseases.
4. **Decreased mortality:** Both reduce the risk of severe disease outcomes and death.

5. **Pathogen exposure:** Both introduce the immune system to parts or forms of pathogens to promote a response.
6. **Dependence on immune memory:** Both rely on the immune system's ability to "remember" pathogens.
7. **Long-term protection:** Both can provide long-lasting protection if effective.
8. **Herd immunity:** Both contribute to herd immunity, protecting unvaccinated individuals indirectly.
9. **Preventive healthcare:** Both are integral parts of preventive healthcare strategies.
10. **Reduction of disease incidence:** Both decrease the overall incidence of the targeted diseases in a population.

These points illustrate how vaccination and immunisation, while distinct in their purpose and definitions, work together closely as key components in disease prevention.

Benefits of Vaccination and Immunisation

There are many benefits of vaccination and immunisation. These are mentioned below.

1. **Reduction in disease incidence:** Vaccination and immunisation have significantly reduced the occurrence of diseases like measles, rubella, tetanus, whooping cough, diphtheria, covid 19, chicken pox, etc.
2. **Lower mortality rates:** Vaccination and immunisation prevent millions of people from serious and potentially deadly diseases worldwide, especially among children.
3. **Economic benefits:** Vaccinated and immunised populations contribute to economic stability by reducing healthcare costs and promoting a healthier workforce.
4. **Global health impact:** Vaccination and immunisation programmes in low-income countries play a crucial role in improving public health and reducing healthcare disparities.
5. **Protect other people in your family and community:** Vaccination and immunisation help stop diseases from spreading to people who cannot have vaccines, such as babies too young to be vaccinated and those who are too ill to be vaccinated.
6. **Reduces or even gets rid of some diseases:** If enough people are vaccinated, diseases can be eradicated.
7. **Can reduce the severity of the disease:** Vaccination and immunisation can stop adults and children from getting sick and having to go to the hospital.
8. **Prevents death:** Stops people from dying from diseases that could be prevented.
9. **Reduces the risk of having long-term health issues and disabilities:** Long-term health issues and disabilities caused by the disease can be reduced through the prevention of the disease.

10. **Prevents spread:** Stops people from passing diseases to others, particularly to those who may not have strong immune systems. (Sometimes called 'herd immunity'.
11. **Reduced illness:** This may mean having to take less time off school or work due to getting sick.
12. **Safer pregnancies:** Pregnancy helps keep both mother and baby safe.

Reasons to Get Vaccinated

The following are some of the reasons why we should get vaccinated

1. Vaccine-preventable diseases have not gone away

Viruses and bacteria that cause illness and death still exist and can be passed on to those who are unvaccinated and unprotected. While many preventable diseases are no longer common, global travel makes it easy for these diseases to spread.

2. Vaccines help in keeping us healthy

The Centres for Disease Control and Prevention (CDC) recommends vaccines throughout life to help protect against many infections. When someone skips vaccines, they become vulnerable to illnesses such as flu, measles, HPV, and hepatitis B, which are all leading causes of cancer.

3. Vaccination can mean the difference between life and death

Vaccine-preventable diseases can be deadly. Before the COVID-19 pandemic, approximately 1.5 million people worldwide, including children, died from vaccine-preventable diseases.

4. Young and healthy people can also get very sick

Although infants and older adults are at increased risk for serious complications, vaccine-preventable diseases can strike anyone at any time. If you are young and healthy, getting vaccinated can help you stay that way.

5. Vaccine-preventable diseases are expensive

Diseases have a direct impact on individuals and families and carry a high price tag for society, exceeding \$10 billion per year. An average flu illness can last up to 2 weeks, typically with 5 or 6 missed work or school days. And adults who get hepatitis A lose an average of one month of work.

6. Vaccines protect our families and communities

When someone gets sick, their children, grandchildren, and parents may also be at risk.

For example, adults are the most common source of whooping cough (pertussis), which can be deadly in infants. Staying up to date on all recommended vaccines helps protect oneself and the family as well as those in our community who are not able to be vaccinated.

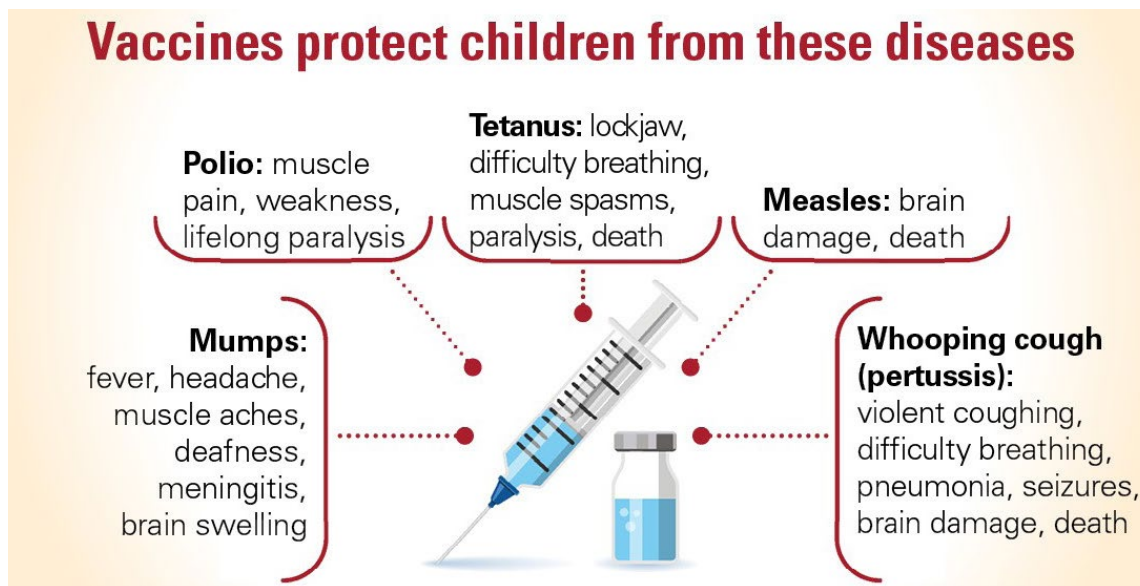


Figure 5.5: Protecting children from disease

The Six Killer Diseases of Children

The six vaccine-preventable childhood diseases, often called the "six killer diseases," are common in tropical regions and spread easily. They are called "killer diseases" because they have a high death rate among children. These diseases are tuberculosis, diphtheria, pertussis (whooping cough), tetanus, polio, and measles.

Let's take a look at these diseases in more detail.

Tuberculosis

Tuberculosis, also referred to as TB, is an ongoing (chronic) infection caused by bacteria. It usually infects the lungs. But it can affect other organs such as the kidneys, spine, or brain in the body. The TB bacteria are spread through the air when an infected person coughs, sneezes, speaks, sings, or laughs. A child usually does not become infected unless they have repeated contact with the bacteria; however can be infected with the TB bacteria and not have the active disease. TB is not spread through personal items, such as clothing, bedding, cups, eating utensils, a toilet or other items that a person with TB has touched.

The three stages of TB infection

Primary infection or exposure: This is when a child has been in contact with a person who has TB, but the child still has a negative TB skin or blood test, a normal chest X-ray, and no symptoms.

Latent TB infection: This is when a child has TB bacteria in their body but does not have symptoms. The infected child's immune system controls the infection and causes the TB bacteria to be inactive. For most people who are infected, the TB will be latent for life. This child would have a positive TB skin or blood test but a normal chest X-ray and no TB symptoms, so they cannot spread the infection to others.

Active TB disease or TB disease: This is when a child has signs and symptoms of an active infection. This child would have a positive or negative TB skin or blood test, and testing showing active TB disease in the lungs or another site in the body. They can spread the disease if the infection is in the lungs and is untreated.

Children are at risk for TB

Any child can develop TB after being exposed. A child is more at risk for TB if they.

1. Live with someone who has TB.
2. Are homeless.
3. Come from a country where TB is common.

Very young children are more likely than older children to have TB spread through their bloodstream and cause complications, such as meningitis.

Prevention of TB

Bacillus Calmette-Guerin (BCG) is the vaccine for the prevention of TB. This vaccine is given to babies at birth.



Figure 5.6: Vaccine for the prevention of TB

Diphtheria

Diphtheria is an illness caused by bacteria. There are 2 types, namely respiratory diphtheria and Skin (cutaneous) diphtheria. Respiratory diphtheria affects the throat, nose, and tonsils, while skin (cutaneous) diphtheria affects the skin. Diphtheria bacteria enter the body through the nose and mouth or a break in the skin. It is spread by breathing in droplets that contain diphtheria bacteria from an infected person when they cough, sneeze or laugh.



Figure 5.7: A child suffering from Diphtheria

Prevention of diphtheria

Diphtheria, tetanus, and pertussis (DTaP) is the combination of vaccines used to protect against diphtheria in children. Children need 5 DTaP shots at the following ages for protection:

1. Shot 1 at 2 months old
2. Shot 2 at 4 months old
3. Shot 3 at 6 months old
4. Shot 4 between ages 15 months and 18 months
5. Shot 5 when a child enters school at 4 to 6 years old
6. Children are to get a booster dose of another form of this vaccine called Tdap at preteen (age 11 or 12).

People of all ages need DIPHTHERIA VACCINES

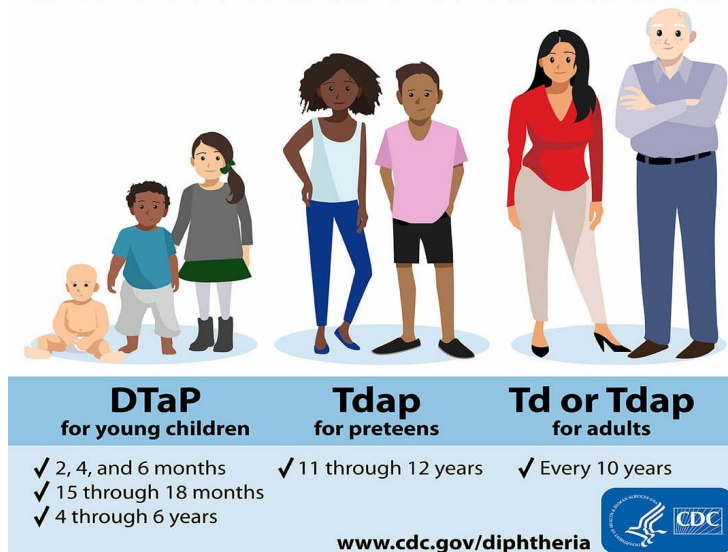


Figure 5.8: Vaccine for all ages to prevent diphtheria

Pertussis (Whooping cough)

Pertussis, commonly referred to as whooping (hoo-ping) cough, is a very contagious disease that is caused by the *Bordetella pertussis* bacteria. It mainly affects babies younger than 6 months old who aren't yet fully protected by immunisations, and children 11 to 18 years old whose immunity has started to fade. Whooping cough causes severe coughing spells, which can sometimes end in a "whooping" sound when the child breathes in.

Whooping cough used to be called the 100-day cough because it can last for weeks or months. The illness often starts like the common cold, with a runny nose, sneezing, and a mild cough or fever. After 1 to 2 weeks, severe coughing starts. The cough often ends with a whooping sound as air is inhaled. During coughing spells, it's hard for babies and children to eat, drink, or breathe. These spells can last for weeks. In babies, it may cause periods of not breathing (apnea). Whooping cough is worse for children under 1 year of age. It can be fatal in some cases.



Figure 5.9: A baby suffering from whooping cough

Prevention of pertussis

DTaP shots for maximum protection against pertussis are given to babies younger than 6 months old. A DTaP shot is a combination vaccine that protects against three diseases: diphtheria, tetanus and pertussis. The first three shots are given at ages 2 months, 4 months, and 6 months. The fourth shot is given between the ages of 15 months and 18 months. The fifth shot is given at 4 to 6 years old. Children aged 11 or 12 need to get a booster dose of Tdap.

Immunity from the vaccine only lasts about 10 to 20 years. A Tdap booster is recommended for all adults who have not been vaccinated before, and then a Tdap or Td booster every 10 years. Older adults who have been in close contact with a child with whooping cough, such as a grandparent, are at extra risk if they have not had a Tdap booster vaccine. All pregnant people should get the vaccine during every pregnancy, even if they have had the Tdap before.

Tetanus

Tetanus is a severe illness of the central nervous system caused by bacteria. The bacteria usually enter the body through a wound in the skin. Tetanus bacteria live in soil and animal manure. Tetanus occurs more often in warmer climates or during the warmer months. Although not a contagious illness, tetanus is a severe illness that can cause death. Tetanus can be prevented by a vaccine. After a child is exposed to tetanus bacteria, it may take from 3 to 21 days for symptoms to start. In babies, symptoms may take from 3 days to 2 weeks to start. (Tetanus is also known as lockjaw).

The most common symptoms of tetanus are listed below.

1. Stiffness of the jaw (lockjaw)
2. Stiffness of the belly (abdominal) and back muscles
3. Contraction (tightening) of the facial muscles
4. Convulsions
5. Fast pulse
6. Fever
7. Sweating
8. Painful muscle spasms near the wound area. (If these spasms affect the larynx or chest, the child may not be able to breathe)
9. Trouble swallowing

Tetanus can also be found in the umbilical stump of infants in developing countries. This occurs in places where the tetanus vaccine is not often used, and people may not know how to care for the stump after the baby is born.



Figure 5.10: Children suffering from tetanus

Prevention of tetanus

The Centres for Disease Control and Prevention (CDC) advises that children receive a series of 5 DTaP vaccines, which protect against tetanus. These doses are scheduled as follows:

1. The first 3 doses are administered at 2, 4, and 6 months of age.
2. A fourth dose is given between 15 and 18 months.
3. A fifth dose is given between 4 and 6 years of age.
4. Tdap booster at 11 or 12 years of age.

During pregnancy, a Tdap booster is recommended between 27 and 36 weeks of each pregnancy. This booster helps protect the baby after birth by increasing antibody levels.



Figure 5.11: Vaccine for tetanus

Poliomyelitis (Polio)

Polio is a very contagious disease caused by a poliovirus that can lead to spinal and respiratory paralysis and, in some cases, death. There are three types of the virus: types 1, 2, and 3.

Polio is often spread through contact with infected faeces, especially when children do not wash their hands properly. It can also spread by consuming food or water contaminated with the virus. Additionally, it can be spread when an infected child coughs or sneezes, releasing virus-containing droplets into the air. The virus can remain in a child's faeces for several weeks.

Children are most contagious right before and right after symptoms start, although most children who are infected with polio have no symptoms at all. Possible complications of paralytic polio can include permanent paralysis of certain muscle groups. This may include the leg muscles. Fortunately, very few children with polio develop paralysis.

Polio is now very rare in Ghana and other parts of the world due to vaccination. The three variations of poliovirus are called wild poliovirus types 1, 2, and 3 (WPV1, WPV2 and WPV3). Wild polio types 2 and 3 have been eradicated (no longer exist), but wild polio type 1 still exists in a few parts of the world.



Figure 5.12: Children with polio

Prevention of polio

To protect them, children are given the Inactivated Polio Vaccine (IPV) through a shot at the following ages:

1. 2 months
2. 4 months
3. Between 6 and 18 months
4. Between the ages of 4 and 6



Figure 5.13: Polio prevention

Measles

Measles, also called rubella, 10-day measles, or red measles, is an extremely contagious viral disease caused by morbillivirus. It is an airborne disease, which means it spreads through the air when an infected person breathes, coughs, sneezes, or talks. Measles can spread if you breathe in particles from someone who has the virus. The airborne droplets can stay in a room for up to two hours after the infected person has left. These droplets can also land on surfaces, spreading the virus that way.

How Measles Can Be Spread

1. Sharing drinks or food with someone with measles.
2. Kissing someone who has measles.
3. Shaking hands, holding hands, or hugging someone with measles.
4. Touching a surface contaminated by the virus and then touching the mouth, nose or eyes.
5. From pregnant people to their babies, either during the pregnancy, delivery or while nursing.



Figure 5.14: A child suffering from measles

Prevention of measles

MMR vaccine

Two doses of the MMR vaccine are recommended for children. The first shot is given when children are around 12 to 15 months old. The second dose is given when they are 4 or 5 years old.

If a child has not been vaccinated, measles can still be prevented by receiving the vaccine within three days of exposure to the virus.

MMRV vaccine

This vaccine combines the measles-mumps-rubella vaccine with the chickenpox (varicella) vaccine. It is only available for children aged 12 months to 12 years of age. (Anyone older than 13 is given the MMR vaccine.) The second shot can be given three months after the first shot.

Other diseases that can be prevented through vaccination among children and adults

1. Yellow fever
2. Chicken pox
3. Meningitis
4. Pneumonia
5. Dengue fever
6. Ebola
7. Hepatitis A
8. Hepatitis B
9. Malaria
10. COVID-19
11. Mumps



Figure 5.15: The MMR vaccine

The following table provides a summary of vaccine-preventable diseases

S/N	Disease	Vaccines	Age categories
1	Tuberculosis (TB)	Bacillus Calmette-Guerin (BCG)	Children under five years of age have a higher risk of catching TB. Some travellers and people are at risk through their work.
2	Diphtheria	DTaP (Diphtheria, tetanus, and pertussis) Tdap (Tetanus, diphtheria, and pertussis) Td (Tetanus and diphtheria) and Pentavalent	All infants and children younger than 7 years old.
3	Whooping cough (pertussis)	DTaP (Diphtheria, tetanus, and pertussis) Tdap (Tetanus, diphtheria, and pertussis) Td (Tetanus and diphtheria) Pentavalent	All children from 2 months to 18-month-olds are given the first to fourth dose. The fifth dose is given when they are 4 to 6 years old, and the booster dose is given at age 11 or 12.
4	Tetanus	DTaP (Diphtheria, tetanus, and pertussis) Tdap (Tetanus, diphtheria, and pertussis) Td (Tetanus and diphtheria) Pentavalent	Children at 2 months, 4 months, 6 months, 18 months, 4 years, and between 11 and 13 years. Pregnant women in the third trimester. Adults 50 years old and above, if they have not had a tetanus vaccine in the last 10 years. Tdap is recommended for older children and adults, and DTaP is recommended for infants and young children.
5	Polio	Inactivated polio vaccine (IPV)	Children under 5 years of age. However, anyone of any age who is unvaccinated can contract the disease.
6	Measles	MMR II and PRIORIX	All children. The first dose is at 12 to 15 months of age, and the second dose is at 4 to 6 years of age.

7	Yellow fever	YF-VAX (Yellow Fever Vaccine)	Children aged 9 to 12 months old through to 59 years of age. People who are not vaccinated and are travelling to or living in at-risk areas.
8	Chicken pox	Varivax and ProQuad	Children: First dose at 12 to 15 months old and the second dose at 4 to 6 years old. Adults: Those without immunity to chicken pox (who have not had the disease or been vaccinated) should get two doses at least 28 days apart.
9	Meningitis	MenACWY vaccine MenAfriVac	All babies and adults aged 65 and above.
10	Pneumonia	Pneumococcal conjugate vaccines (PCV15, PCV20) and Pneumococcal polysaccharide vaccine (PPSV23)	Babies, first dose at 12 weeks and booster dose at 1 year. Adults over 65, one dose.
11	Dengue fever	Dengvaxia	Children 9 through 16 years old.
12	Ebola	rVSVΔG-ZEBOV-GP and Ad26. ZEBOV, MVA-BN-Filo	Adults over 18 years of age, not including pregnant and lactating women.
13	Hepatitis A	HAVRIX and VAQTA	Children aged 12 to 23 months and catch-up vaccination for children ages 2 to 18 years who have not previously received the hepatitis A vaccine.
14	Hepatitis B	Pentavalent Engerix-B Heplisav-B and Recombivax HB	All infants at birth, unvaccinated children younger than 19 years of age, adults aged 19 to 59 years, and adults aged 60 years and older.
15	Malaria	RTS,S and R21	Children aged 5 to 36 months.

16	COVID-19	There are different vaccines for different strains. Examples include Moderna Spikevax and Sputnik V	Everyone aged 6 months and older.
17	Mumps	MMR vaccine	Children aged 12 to 15 months and 4 to 6 years.

Common Myths and Facts About Vaccination and Immunisation

There are several myths associated with vaccination and immunisation. the table below provides you with the facts around each myth.

Myth	Fact
Vaccines cause autism.	Extensive research, including large-scale studies, has shown no link between vaccines and autism. This myth originated from a study published in 1998, which has since been retracted due to fake data and unethical practices.
Vaccines contain harmful and unsafe ingredients.	Vaccines are thoroughly tested for safety. While they do contain preservatives and adjuvants (e.g., aluminium) to enhance efficacy, these are present in extremely low and safe amounts and are often naturally found in other foods and the environment.
Natural immunity is better than vaccine-acquired immunity.	Natural immunity can come at a high cost, as contracting the disease can lead to severe complications, long-term health issues, or death. Vaccination provides a safe way to develop immunity without risking serious illness.
Vaccines can overload the immune system.	The immune system is equipped to handle multiple challenges daily. Vaccines contain fewer antigens than everyday environmental exposures, and modern vaccines are carefully designed to be safe and manageable for the immune system, even when multiple vaccinations are given at once.
Vaccines are not necessary for rare diseases in our area.	While some diseases are rare in certain areas, this is largely due to successful vaccination programmes. If vaccination rates drop, these diseases can return and spread rapidly, as evidenced by outbreaks of measles in areas with low vaccination coverage.
Vaccines have severe side effects and are dangerous.	Most vaccine side effects are mild (like temporary soreness or fever). Serious side effects are extremely rare, and the risk of complications from the disease itself is far greater than the risk of severe vaccine side effects.

Vaccination is not necessary if everyone else is vaccinated (herd immunity will protect me).	Herd immunity can help protect those who cannot be vaccinated, but it only works when a high percentage of the population is immunised. Relying on others for immunity weakens the community's defences and can lead to outbreaks.
I am healthy, so I do not need vaccines.	Even healthy individuals are at risk of contracting and spreading infectious diseases. Vaccination helps protect people and those around them, including those who are more vulnerable to severe complications, like young children and the elderly.
Once vaccinated, I am protected for life.	While some vaccines offer lifelong protection, others require booster shots to maintain immunity. The duration of immunity varies depending on the vaccine and the individual.

Activity 5.1 Immunity and Vaccinations

1. Engage in a role-play to illustrate how disease can spread quickly in close-knit environments, and how vaccination can prevent the spread.

You will need the following characters for your role play:

- a. Patient Zero: This is the only person infected with a virus at the start of the role play.
- b. Immune individuals: Four members of your class will be immune to the virus.
- c. Healthy individuals: This includes all other members of your class.

Patient Zero will move around the class, tagging as many people as possible in 1 minute. Any person who is tagged is now infected with the virus. Those immune to the virus should try to prevent Patient Zero from tagging your classmates. Do this by standing in their way.

In your class, discuss the following:

- a. How quickly the "virus" spread.
 - b. How those immune to the virus helped slow down the spread.
 - c. How this relates to real-life vaccination and disease prevention (herd immunity).
2. In groups, use the internet to search for the meaning of vaccination and immunisation, and the diseases that can be vaccinated against.
 3. Write down your definitions and diseases that can be vaccinated against in your notebook.

4. In groups, use an internet search or watch a video on the types of vaccinations and how vaccines work.
5. To help you in your search and understanding, search the following terms.
 - a. Immune response
 - b. Antibody
 - c. Vaccine
 - d. Pathogen
 - e. Memory cell

Facts and Myth

In groups, use the internet to search for facts and myths about vaccinations.

6. Write down your findings in your notebook.
7. Present your findings to your class.

Before your research, did you believe any of the myths to be true? If yes, have your research and discussions changed your mind?

Discuss the following after completing the activities above

- a. The differences between vaccination and immunisation.
- b. The benefits of vaccination and immunisation.
- c. The reasons to get vaccinated.

Did you learn anything new from the discussion? Make notes of any new information in your notebook.

Activity 5.2 A poster for a vaccine

1. Create a poster that addresses a specific vaccine. (For example, influenza, polio, measles or TB).
Posters should include:
 - a. What the vaccine protects.
 - b. How it works.
 - c. The importance of getting vaccinated.
2. Present your poster to the class for discussion.
3. Reflect on the following questions and write your thoughts in your notebook.
 - a. Will the knowledge I've gained on vaccination improve my trust in vaccines? Why do you think this?
 - b. How will I promote the benefits of vaccination to my family and friends?

We are now going to shift our focus from vaccination and immunisation to look at personal and menstrual hygiene.

PERSONAL AND MENSTRUAL HYGIENE

Personal hygiene refers to practices that help maintain cleanliness and health by preventing the spread of germs and infections. Key aspects of personal hygiene include regular bathing, proper handwashing, oral hygiene, and wearing clean clothes. Good personal hygiene is essential for physical well-being, social confidence, and overall health.

Menstrual hygiene is a specific aspect of personal hygiene that focuses on the safe and hygienic management of menstruation. It involves practices such as regularly changing sanitary products, washing the genital area with clean water, and safely disposing of menstrual waste. Proper menstrual hygiene helps prevent infections, promotes comfort, and supports dignity during menstruation.

Both personal and menstrual hygiene are fundamental to health and self-care, especially for young people, as they help in building healthy habits, preventing diseases, and fostering a positive self-image.

Personal Hygiene

What is personal hygiene?

Personal hygiene is the daily habits and routines individuals follow to keep themselves clean and healthy.

Good personal hygiene: Good personal hygiene is the practice of keeping oneself clean and maintaining healthy habits to prevent illness, promote well-being, and ensure social comfort. This includes routine activities such as regular handwashing, bathing, brushing and flossing teeth, trimming nails, wearing clean clothes, and taking care of the hair and skin.

Practicing good personal hygiene helps prevent the spread of germs, reduces the risk of infections, and fosters self-confidence and positive social interactions.

Poor personal hygiene: Poor personal hygiene is neglecting regular cleaning and health-maintaining habits, which can lead to the buildup of dirt, bacteria, and germs on the body. Common signs of poor hygiene include infrequent handwashing, lack of regular bathing or showering, unbrushed teeth, untrimmed nails, and wearing unwashed clothes.

This neglect can increase the risk of infections, illnesses, and unpleasant body odours and can negatively affect physical health, mental well-being, and social interactions.

The impact of personal hygiene on social relationships

Personal hygiene has a significant impact on our social relationships, as it directly influences how others perceive and interact with us.

First impressions: Good hygiene makes a positive first impression, signalling to others that one is responsible, respectful, and mindful of self-care, which can foster trust and approachability. Equally, poor hygiene may lead to negative first impressions, causing people to avoid close interactions.

Social comfort: Poor hygiene can lead to unpleasant odours, visible dirt, or an unkempt appearance, which may cause discomfort for others and lead them to distance themselves physically and emotionally. People are generally more comfortable around individuals who maintain cleanliness.

Self-esteem and confidence: Practicing good hygiene often boosts self-confidence, making individuals feel better about themselves, which can make them more open and engaging in social situations. Confidence in appearance and health positively impacts social interactions and relationship-building.

Health implications: Good hygiene helps prevent the spread of germs and illness, protecting both the individual and their social circle. Poor hygiene, on the other hand, can lead to contagious conditions like colds or skin infections, which can strain relationships or cause isolation.

Perception of responsibility: Consistently practicing good hygiene conveys a sense of responsibility and self-respect, which are qualities that are valued in friendships, work relationships and romantic partnerships.

The relationship between personal hygiene and self-confidence

The association between personal hygiene and self-confidence is closely interconnected, as maintaining good hygiene practices meaningfully influences how we feel about ourselves and how we are perceived by others.

Positive self-image: When we practice good personal hygiene, such as showering regularly, brushing our teeth, and wearing clean clothes, we often feel better about our appearance. This positive self-image boosts self-esteem and makes us feel more comfortable in our skin.

Feeling of freshness and cleanliness: Maintaining good personal hygiene promotes a sense of cleanliness and freshness, which reduces feelings of discomfort or embarrassment. This sense of well-being enhances our confidence, especially in school and in other social or professional settings.

Social acceptance: Good personal hygiene helps us meet social and cultural standards, which makes us feel more accepted in various groups. When we are conforming to societal norms, our confidence in social interactions tends to rise.

Improved mental health: Regular personal hygiene routines are linked to improved mental health, including reduced stress and anxiety. When we feel physically clean and healthy, it helps us ease concerns about body odour, acne, or other hygiene-related issues, which in turn, leads to greater confidence in social situations.

Reduced negative judgment: Poor personal hygiene leads to negative judgments from others, potentially causing embarrassment or self-doubt.

In contrast, practising good personal hygiene prevents such judgments, allowing us to feel more confident in our interactions with others.

Maintaining personal hygiene not only improves physical health but also contributes meaningfully to our sense of self-worth, emotional well-being and overall confidence.

The importance of nail care

Nail care is an important aspect of personal hygiene as it contributes to both physical health and social well-being. Nail care is important for the following reasons:

Prevention of infections	Regular nail care, such as trimming and cleaning, helps prevent the buildup of dirt, bacteria, and fungi under the nails, which can lead to infections like fungal nail infections (onychomycosis) or bacterial infections.
Prevention of injury	Well-maintained nails are less likely to break or cause injury to the surrounding skin. Jagged or long nails can accidentally scratch or puncture the skin, leading to pain, bleeding, or infection.
Hygiene and cleanliness	Clean nails are crucial for overall cleanliness, as nails can harbour germs and dirt that can be transferred to the mouth, food or other surfaces. Regular nail care ensures that the hands remain hygienic and less likely to spread bacteria.
Aesthetic appearance	Well-groomed nails contribute to a neat and polished appearance, which positively impacts personal confidence and the way others perceive us. In professional or social settings, good nail hygiene is often seen as an indicator of self-care and responsibility.
Prevention of nail diseases	Keeping nails trimmed and properly cleaned prevents nail diseases such as ingrown nails, hangnails or painful nail bed conditions.
Protection of fingers and toes	Nails provide a protective barrier to the sensitive skin underneath, especially on the fingertips and toes. Neglecting nail care may lead to damaged or infected nail beds, which may interfere with daily activities.

Steps to improve personal hygiene practices in a school setting

Improving personal hygiene practices in a school setting is important for the well-being of learners and staff. Some effective steps to improve hygiene practices include:

Education of learners and staff

Learners and school staff should be educated on the importance of personal hygiene, including handwashing, bathing and dental and nail care through classroom lessons, posters, and school assemblies. And from time to time, workshops or seminars should be organised for both learners and staff on proper hygiene practices.

Ensure access to hygiene facilities

Schools should ensure there are enough clean washrooms with access to soap, clean water, and paper towels or tissues. Classrooms and common areas should be stocked with hand sanitisers and wipes for easy access throughout the day. Schools through NGOs may provide toothbrushes and toothpaste in school washrooms for learners to maintain oral hygiene after meals or encourage learners to come to school with their toothbrushes and toothpaste.

Promote regular handwashing

Clear handwashing instructions should be displayed in bathrooms and classrooms to remind individuals to wash their hands after using the washroom, before eating, and after coughing or sneezing. Handwashing campaigns and events can be organised to reinforce the importance of this practice.

Encourage routine hygiene practices

A clean uniform should be worn each day. Your school may set a schedule for grooming that includes regular haircuts and nail trimming, where, for example, every Wednesday morning, uniforms, teeth, and nails are inspected before lessons begin.

We should keep our nails trimmed and avoid biting our nails to prevent the spread of germs.

Promote healthy eating and hydration

Individuals should be encouraged to drink plenty of water to stay hydrated and promote overall skin health. Schools should ensure healthy snacks and meals are sold at school to learners, and parents are encouraged to give healthy snacks and meals to their children to promote healthy eating.

Maintain cleanliness on school premises

Schools should ensure classrooms, hallways, and playgrounds are regularly cleaned and sanitised, to reduce the spread of germs. Learners may be assigned hygiene duties such as wiping down desks or keeping personal spaces clean to encourage responsibility and cleanliness.

Encourage peer role models

Schools can create learner hygiene ambassador programmes, where learners lead by example and encourage their peers to maintain personal hygiene. This can lead to learners or classrooms that demonstrate excellent hygiene practices being recognised, rewarded or given certificates.

Address hygiene-related issues early

Schools should have a confidential system in place for learners to report hygiene issues, whether related to access to hygiene products or personal habits. Schools should also provide support for learners who may face barriers to practising good hygiene, such as access to clean clothes, regular bathing or dental care, by seeking help from NGOs and benevolent individuals to assist such learners.

Incorporate hygiene into school policies

A personal hygiene code of conduct should be included in the school's rules and regulations to establish expectations for cleanliness and grooming. Hygiene checks should be implemented during school events, sports, and activities to reinforce the importance of personal hygiene at all times.

Provide hygiene supplies

Schools should ensure that learners have access to personal hygiene products, such as soap, deodorant, and sanitary products, through school resources or programmes that provide these for those in need. Implementing these steps can help schools foster a culture of good hygiene, which promotes health, prevents illness, and creates a positive learning environment.

Activity 5.3 Importance of personal hygiene

1. What steps can you take to improve personal hygiene in your school?
2. With a partner, write your ideas in your notebook and be ready to share these ideas in a class discussion.

Menstrual Hygiene

What is menstruation?

Menstruation, which is commonly called a "period", is a natural biological process in which the lining of the uterus or womb (endometrium) is shed once a month through the vagina when pregnancy does not occur. It is a normal vaginal bleeding, lasting between 3 to 7 days, that occurs as part of a girl or woman's monthly cycle. Every month, the body prepares itself for pregnancy. If no pregnancy occurs, the uterus or womb sheds its lining. The menstrual blood is partly blood and partly tissue and mucus from inside the uterus or womb.

Most girls have their **first period**, also called **menarche**, between the ages of 11 to 14 and have regular menstrual cycles until about age 50, where they will experience menopause (they will stop menstruating).

The average length of a menstrual cycle is 28 days, but everyone's cycle is different. It is normal to have a cycle that is a few days shorter or longer. For example, some teenagers may have cycles that last 45 days, whereas some may have cycles that last 21 to 38 days.

The days of a menstrual cycle are counted from Day 1 of menstrual bleeding to Day 1 of the next menstrual bleeding. The menstrual cycle is guided by hormonal signals sent by the brain. Estrogen causes the uterine lining to develop and thicken, and progesterone helps to maintain the thickened uterine lining, making it nutrient-rich and ready to support a fertilised egg to attach itself to the walls of the womb or uterus for development.

The menstrual cycle

The menstrual cycle is a monthly process or series of changes a girl or woman's body goes through to prepare for a possible pregnancy each month. Once a month, the body grows a new uterine lining (endometrium) that is ready to receive and nourish a fertilised egg. The process of change occurs in four different stages referred to as phases of the menstrual cycle. These phases are the menstrual phase, the follicular phase, the ovulation phase, and the luteal phase. Different things happen at each phase.

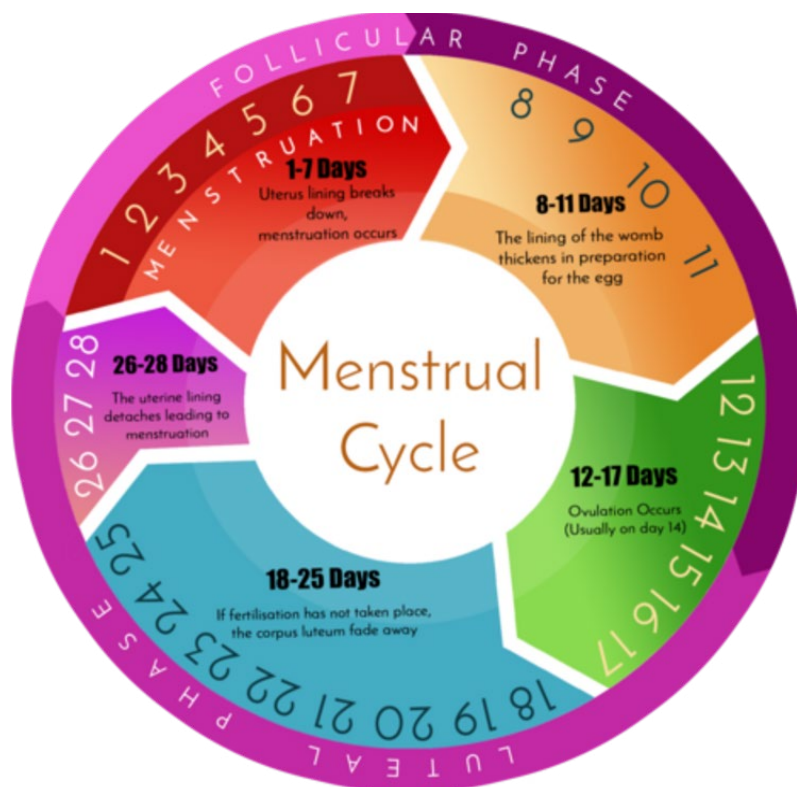


Figure 5.16: Menstrual cycle timeline for a 28-day cycle

The menstrual phase

The menstrual phase occurs from day 1 to 5 of the menstrual cycle and marks the beginning of a new cycle. It is a natural part of the cycle that resets the reproductive system and prepares it for the possibility of pregnancy in an upcoming cycle. During the menstrual phase, many people experience a varied range of symptoms due to hormonal changes and the shedding of the uterine lining. The symptoms may vary in intensity from person to person and can range from mild to severe.

Some common symptoms experienced during the menstrual phase include

Fatigue	The body feels more tired due to the physical demands of menstruation and changes in hormone levels.
Painful cramps (Dysmenorrhea)	This is caused by contractions of the womb or uterus to help shed the lining, leading to lower abdominal pain. It can be experienced before or during menstruation.
Bloating	This is a sensation of fullness, tightness or swelling in the abdomen, often accompanied by discomfort or pain. It can cause the stomach area to feel and appear larger than usual due to water retention as hormonal changes occur in the menstrual cycle.
Headaches	This headache is triggered because of the drop in estrogen production which affects the chemicals in the brain.
Breast tenderness	This is due to hormonal variations making the breasts feel swollen or sore.
Mood swings or irritability.	This happens as a result of changes in hormone levels, especially estrogen and progesterone, which affect mood-regulating chemicals in the brain.
Lower back pain	This occurs sometimes as an association with cramping and muscle tension in the lower back area.
Digestive issues	Some people experience diarrhoea or constipation, which is linked to hormonal shifts affecting the digestive system.

The follicular phase

The follicular phase occurs from day 1 to 13 of the menstrual cycle. Starting on the first day of menstruation and ending with ovulation, during which the body prepares an egg for release by stimulating the growth of follicles in the ovaries. (Note, there is some overlap with the menstrual phase).

It starts when the hypothalamus signals the pituitary gland in the brain to release follicle-stimulating hormone (FSH). This hormone stimulates (inspires) the ovaries to produce around 5 to 20 small sacs called follicles. Each follicle contains an immature egg. Only the healthiest egg will eventually mature. (On rare occasions, a female may have two eggs mature.) The rest of the follicles will be reabsorbed into the body.

The maturing follicle causes an increase in estrogen production that thickens the lining of the womb or uterus to create a nutrient-rich environment for an embryo to grow. The average follicular phase lasts for about 13 days but can range from 11 to 27 days, depending on one's cycle.

The ovulation phase

The ovulation phase occurs around the middle of the cycle when a mature egg is released from the ovary into the fallopian tube. This occurs around day 14 for a 28-day

cycle and lasts for about 24 hours. The egg travels down the fallopian tube towards the womb or uterus. It is the time when fertilisation by a sperm is most likely to occur. After a day, the egg will die or dissolve if it is not fertilised. During ovulation, some people experience a variety of symptoms due to hormonal changes:

Some common symptoms of ovulation include

Mild abdominal pain	Some feel a slight ache or cramp on one side of the lower abdomen, often where the ovary is releasing an egg.
Increased cervical mucus	The consistency of cervical mucus becomes clear, stretchy, and slippery, resembling egg whites.
Higher body temperature	The body temperature may slightly increase after ovulation due to a rise in progesterone levels in the body.
Breast tenderness	Hormonal fluctuations, especially the rise in estrogen may cause tenderness or mild swelling in the breasts.
Increased libido	Many people experience a natural increase in sexual desire around ovulation.
Heightened senses	Some people become more sensitive to smell, taste, or vision, may become more sensitive to light, and may become easily irritated.

These symptoms may vary in intensity and may not be noticeable in everyone, as hormonal fluctuations affect each body differently.

The luteal phase

The luteal phase occurs from day 15 to 28. It is the part of the menstrual cycle after ovulation where the body produces progesterone to prepare the uterine lining for pregnancy. If pregnancy does not occur, progesterone production levels decrease, leading to menstruation. Premenstrual syndrome (PMS) experiences include those listed below.

1. Bloating
2. Breast swelling, pain, or tenderness
3. Mood changes
4. Headache
5. Weight gain
6. Changes in sexual desire
7. Food cravings
8. Trouble sleeping

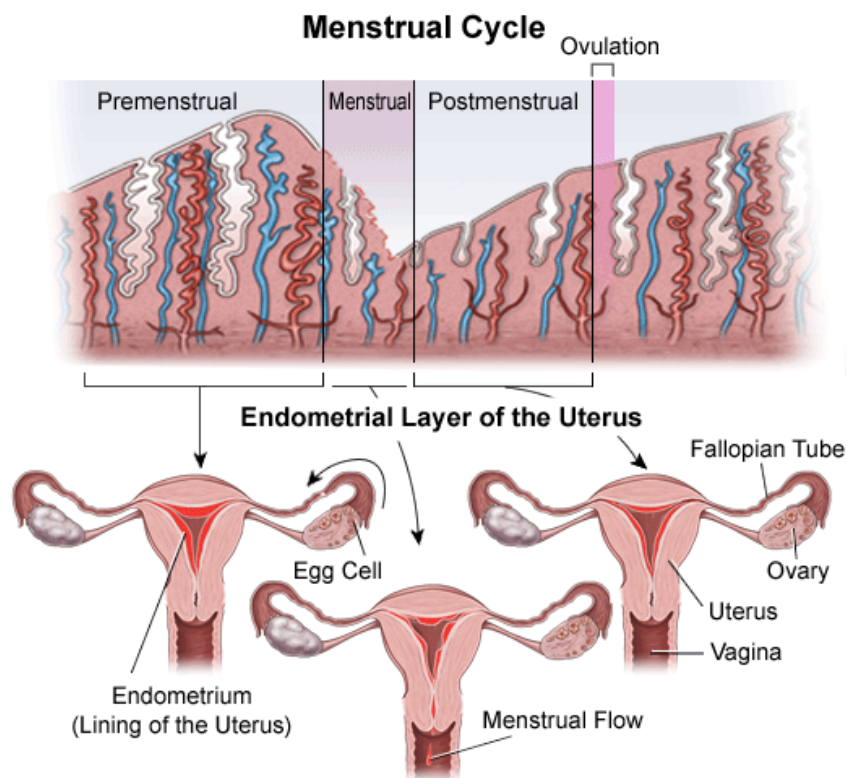


Figure 5.17: The nature of the uterine lining layers before, during and after menstruation and during ovulation

Menstrual hygiene

Menstrual hygiene refers to the practices and care taken to manage menstruation safely and healthily.

Menstrual hygiene includes the use of clean menstrual products (such as sanitary pads, tampons or menstrual cups), regular changing of these products, proper disposal, and personal hygiene practices, such as washing the genital area.

Menstrual hygiene also emphasises access to facilities for safe and private changing and disposal of menstrual products, adequate water and soap, and education on menstruation and reproductive health.

Good menstrual hygiene is essential for physical health, helping to prevent infections. It also plays a key role in dignity, particularly for girls and women in environments where resources and education on this topic may be limited due to cultural and societal norms.

Use this link to watch a video on menstrual hygiene: [Menstrual hygiene](#)

Menstrual products

Menstrual products are items designed to help manage menstrual flow during menstruation or periods. They are used to absorb or collect blood and other materials shed from the uterine lining and help maintain hygiene and comfort during menstruation.

Common types of menstrual products

1. Disposable products

Disposable products are items designed for single use. This means they are meant to be thrown away after each use. These products offer convenience but often contribute to environmental waste due to their non-reusable nature.

Examples are listed below.

- a. **Sanitary pads:** Sanitary pads are soft, absorbent products worn externally in the underwear to absorb menstrual blood. Absorbent pads have an adhesive strip that sticks to the underwear. They come in various sizes and absorbency levels for light to heavy flow. See Figure 5.18.
- b. **Tampons:** Tampons are small absorbent cylinders that are inserted into the vagina to absorb menstrual blood and vaginal secretions during menstruation. Unlike pads, which are worn externally, tampons are placed inside the vaginal canal. Once properly inserted, a tampon stays in place and expands as it absorbs the menstrual flow. Tampons are available in different absorbency levels and may come with or without applicators. Tampons are safely removed from the vagina canal by pulling out the cords attached to them. See Figure 5.19.
- c. **Panty liners:** Panty liners are thin pads that are very much like sanitary pads, only that they are thinner, smaller, and less absorbent. Unlike sanitary pads that are used during period days, panty liners are meant to be used during non-period days and are used when experiencing vaginal discharge. Even though vaginal discharges are completely natural and are important as a vagina's self-cleaning technique, excess discharge can stain panties and make them feel wet and sticky. They can also be used during light spotting or at the beginning or end of a period when blood flow is less. See Figure 5.20.
- d. **Menstrual discs:** Menstrual discs are menstrual products designed to collect menstrual blood inside the vagina. They are similar to menstrual cups but with a different shape and insertion method. Menstrual discs are smaller and flatter than menstrual cups, which are shaped like a small bell see Figure 5.21. Menstrual discs have a flexible rim that allows them to be inserted into the vaginal canal and positioned around the cervix to collect menstrual flow. They offer a longer wear time than tampons or pads and are disposed of after use.



Figure 5.18: Sanitary Pads



Figure 5.19: Tampons without and with applicator



Figure 5.20: Pantyliners



Figure. 5.21 Menstrual discs

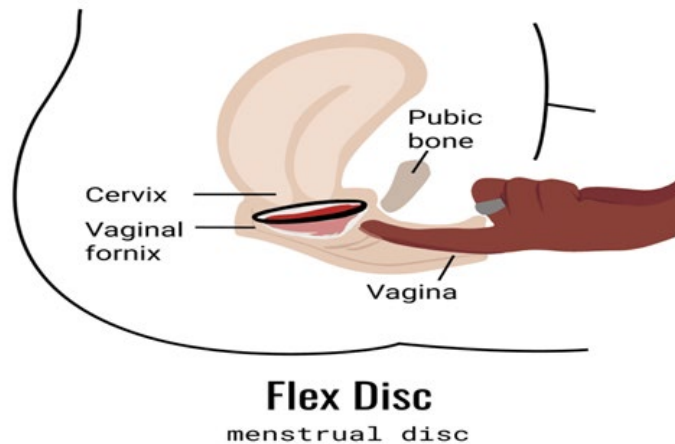


Figure 5.22: Position of a menstrual disc in the vagina

2. Reusable products

- a. **Menstrual cups:** Menstrual cups are reusable menstrual products designed to collect, rather than absorb, menstrual blood. Menstrual cups are usually shaped like a small bell or cone with a stem at the bottom. The stem helps with removal, and the cup's flexible body allows it to fit comfortably inside the vagina.

To use a menstrual cup, it is folded and inserted into the vagina, where it opens and forms a gentle seal with the vaginal walls. This seal prevents leaks, and the cup sits below the cervix to collect blood. Menstrual cups can hold more fluid than tampons or pads and can be worn for up to 12 hours, depending on the flow level. Once filled, the cup needs to be removed, emptied, rinsed, and reinserted.

Menstrual cups come in different sizes to suit different needs, often based on factors like age and flow. Many brands offer small and large sizes. When inserted correctly, menstrual cups are comfortable and can be used during physical activities, including swimming, exercise, and even while sleeping.



Figure 5.23: Menstrual cups

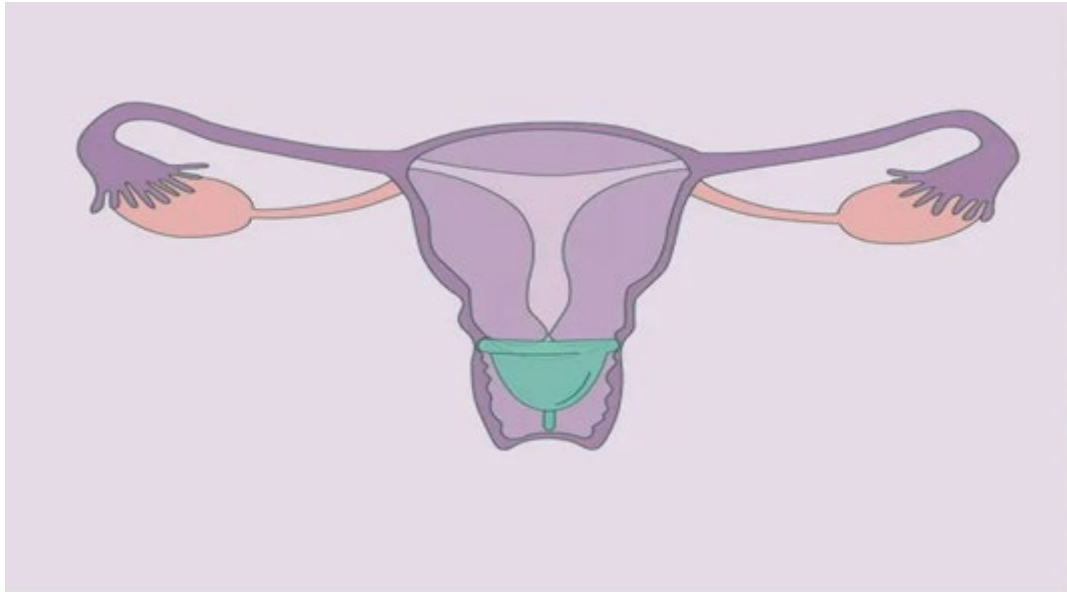


Figure 5.24: The position of a menstrual cup in the vagina

3. **Cloth pads:** Cloth pads are reusable menstrual products made from layers of absorbent fabric that are worn externally like disposable pads. They are designed to be washed and reused. Some cloth pads have a waterproof backing to prevent leaks.

Cloth pads come in various shapes and sizes, similar to disposable pads. They are available in different thicknesses and lengths to accommodate light to heavy menstrual flow, similar to regular, super, or overnight disposable pads. They have "wings" with snap buttons to secure them around the underwear.

After use, cloth pads are washed, dried, and stored until the next cycle. With proper care, they can last for several years, reducing the need for disposable pads and minimising waste. Many people find cloth pads more comfortable, especially those with sensitive skin, as they are free from chemicals and synthetic fibres often found in disposable pads.



Figure 5.25: Cloth pads

How to properly dispose of disposable sanitary products

1. **Changing pad:** When ready to change the pad, remove the used pad from the underwear and roll it up. Carefully remove the pad and roll it up tightly and neatly, starting from one end to the other. Roll it up so that the soiled part is on the inside and the adhesive part is on the outside. Rolling up the pad will make it easier to wrap and minimise the space it takes up in dustbins.



Figure 5.26: How to roll a used pad

2. **Wrap the pad in a piece of paper:** Use a piece of newspaper, toilet paper, tissue, or wastepaper to carefully wrap the rolled-up pad to help keep the odours controlled. The wrapper from a fresh pad can also be used to wrap up a used pad. If the wrapper has an adhesive tab on it, use that to help keep the wrapped pad secure. Tampons must also be wrapped just like pads.

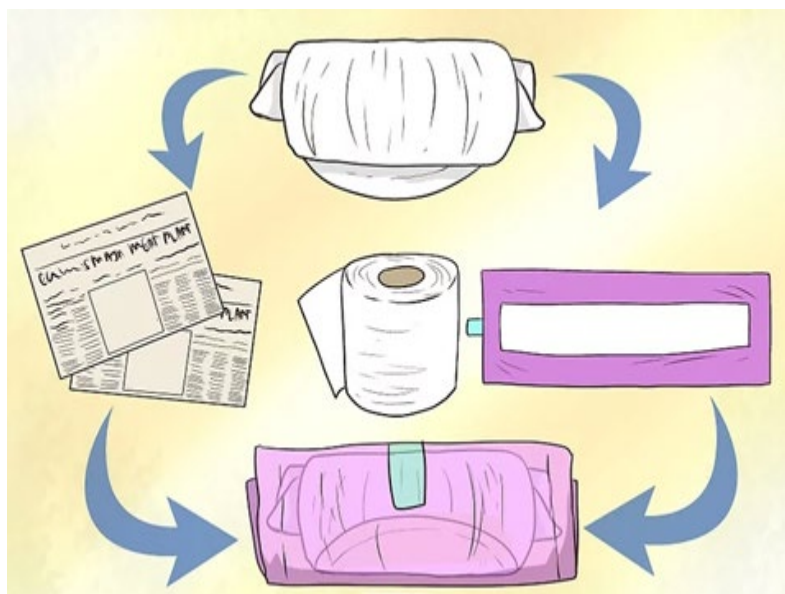


Figure 5.27: What to use to wrap up the used pad

3. **Drop the wrapped pad or tampon in a dustbin:** Put the wrapped pad or tampon in a dustbin. Preferably, put them in a dustbin with a bag or liner and a lid. This will make it easier to dispose of the pads and other waste materials when it is time to take out the trash. Never flush a used pad or tampon down the toilet. Doing so will clog the pipes.



Figure 5.28: Where to put used wrap up pad

4. **Wash hands when done:** Thoroughly wash your hands with soap and water once pads, tampons, and discs are disposed of. This will help prevent the spread of germs and rinse away any menstrual blood that may have gotten on your hands. It is also important to wash your hands before changing pads, tampons, discs and cups. This will help prevent the accidental introduction of unwanted germs into the genital area.



Figure 5.29: Washing hands after changing sanitary products

Hygienic practices during menstruation

Maintaining these hygienic practices helps alleviate menstrual discomfort, prevent infections, and ensure a comfortable experience.

Choose the right product

It is important to use clean and reliable products and to selecting the right product for comfort and usefulness. Menstrual products come in different sizes and absorbencies, choosing based on flow type can help prevent leakage and ensure comfort. Choosing the wrong menstrual products can lead to discomfort, health risks, and other inconveniences.

Risks of choosing the wrong products include some of these mentioned.

1. Increased risk of infections

- a. **Bacterial growth:** Using overly absorbent tampons for longer periods or failing to change them frequently may encourage the growth of bacteria, increasing the risk of Toxic Shock Syndrome (TSS), a rare but dangerous infection.
- b. **Yeast or urinary tract infections (UTIs):** Incorrect products or improper hygiene may lead to changes in the vaginal environment, increasing the likelihood of yeast infections or UTIs.

2. Skin irritation and rashes

- a. **Friction burns and rash:** Pads with rough textures or synthetic materials may cause abrasion, skin irritation, or rashes, particularly with prolonged use or during physical activity.
- b. **Allergic reactions:** Some pads and tampons contain fragrances, dyes, or chemicals that may cause skin irritation or allergic reactions in sensitive individuals. Avoid scented pads and tampons.

3. Leakage and discomfort

- a. **Inadequate absorbency:** Choosing a product with lower absorbency than needed may lead to frequent leakage, staining clothes, and cause embarrassment.
- b. **Too much absorbency:** Using a highly absorbent tampon when it is not needed can cause vaginal dryness and irritation, making removal uncomfortable and increasing the risk of micro-abrasions.

4. Physical discomfort

- a. **Improperly fitted products:** Products that do not fit well, such as a menstrual cup that is too large or a pad that does not stay in place, can cause discomfort and even pain, particularly during movement.
- b. **Limited activity:** Inappropriate choices, like a pad during sports instead of a tampon or cup, can restrict mobility, leading to discomfort and limiting one's lifestyle choices during menstruation.

Menstrual cups

Menstrual cups should be,

1. **Rinsed and cleaned during each use:** When emptying the cup, it should be rinsed with clean water, or if in a public washroom, wipe with toilet tissue or a cup-safe wipe until it can be rinsed.
2. **Sterilised after each cycle:** Boil the cup for 5 to 10 minutes at the end of each menstrual cycle or use a sterilising solution to kill any lingering bacteria.
3. **Stored in a breathable bag:** Between cycles, store the cup in a breathable cloth bag to prevent moisture buildup and reduce the chance of bacteria or mould growth. Proper cleaning and storage practices will help maintain good vaginal health, reduce the risk of infection, and keep the cup in good condition for long-term use.
4. **Changed regularly:** Menstrual cups can be left in for 6 to 12 hours, depending on flow, but should still be emptied and cleaned regularly.

Personal cleanliness

1. **Wash regularly:** Regular showers or baths during menstruation help maintain cleanliness and reduce discomfort.
2. **Gentle cleaning:** Clean the genital area with warm water, but avoid harsh soaps or scented products, as these can disturb the vaginal pH and lead to irritation or infections. Use mild, fragrance-free soap if needed.
3. **Wipe properly:** Always wipe from front to back after using the washroom. This practice helps prevent the spread of bacteria from the anus to the vaginal area, reducing the risk of urinary tract infections (UTIs) and other infections.
4. **Wear clean, breathable clothing**
 - a. **Choose comfortable underwear:** Cotton underwear is ideal during menstruation because it is soft, absorbent and breathable, helping to keep the area dry and reducing the risk of irritation.
 - b. **Change clothing if necessary:** When experiencing leakage or staining, change the underwear or clothes to maintain cleanliness and comfort. Wearing dark-coloured clothing may be more comfortable on heavy-flow days, as it can minimise the appearance of potential stains.
5. **Stay hydrated and eat nutritious foods**
 - a. **Hydration and nutrition:** Drinking plenty of water and maintaining a balanced diet is beneficial for both menstrual comfort and overall health.
 - b. **Iron-rich foods:** Menstruation can lead to lower iron levels, so including iron-rich foods like leafy greens, beans, and lean meats can help replenish it and reduce feelings of fatigue.
 - c. **Magnesium and Vitamin B6:** These nutrients can help relieve cramps and mood changes. Foods like nuts, seeds, bananas, and whole grains are beneficial.

- d. **Limit salt and caffeine:** Salt and caffeine can contribute to bloating and discomfort. Reducing these during menstruation can help prevent these symptoms and support hydration.

Menstrual hygiene education is essential to break stigmas and empower individuals to practice these routines confidently and healthily.

How to manage discomfort during menstruation

Managing discomfort during menstruation can improve well-being and allow for a more comfortable experience. Here are some effective ways to reduce menstrual discomfort:

Using pain relief techniques

1. **Using heating pads:** Applying heat to the lower abdomen or back can relax muscles, improve blood flow, and reduce cramping. Heat wraps, hot water bottles or heating pads are great options.
2. **Taking warm baths:** Taking a warm bath can relieve muscle tension, ease cramps and promote relaxation.

Exercise and physical activity: Light like walking, swimming, cycling, light jogging or running, stretching, or gentle relaxation exercises are effective in reducing menstrual discomfort and improving mood by increasing blood flow and releasing endorphins, the body's natural painkillers.

Dietary adjustments: Drinking plenty of water can reduce bloating and ease cramps. Some herbal supplements like ginger tea, turmeric tea, moringa tea, peppermint tea, lemongrass tea, clove tea, and fenugreek have anti-inflammatory properties that have a calming effect and can help to relieve cramps.

Note: *A healthcare provider should be consulted before using such supplements.*

Sleep: Good sleep is very good for mood regulation and overall well-being. Get enough restful sleep, using a pillow under the knees or lying on the side to reduce abdominal pressure and all help to relieve menstrual discomfort.

Consult a healthcare provider for severe discomfort

If menstrual pain is severe and is not lessening after trying other remedies and is interfering with daily activities, consult a doctor as specialist treatment may be required.

Socio-cultural beliefs and misconceptions about menstruation and menstrual hygiene practices

Socio-cultural beliefs and misconceptions about menstruation and menstrual hygiene practices vary and are influenced by traditional and religious factors. Some of these beliefs and misconceptions influence how menstruation is managed, the types of products used, and the general attitudes toward menstrual health. Some common socio-cultural beliefs and misconceptions about menstruation and menstrual hygiene practices include:

1. Menstrual taboos and restrictions

Menstruating individuals are "unclean" or "impure": It is believed that menstruating girls and women are unclean or impure in some communities, so therefore should avoid cooking or handling food because it is considered taboo. The belief is that their presence in food preparation could affect the food's purity and safety. This leads to stigmatisation and social exclusion against girls and women in such communities leading to shame around menstruation which may affect their emotional well-being.

Menstrual blood is powerful and poisonous: It is a widespread myth in some ethnic groups that menstrual blood has spiritual or mystical power which can harm people when they come in contact with it. This belief has led to the avoidance of menstruating girls and women touching specific household items or interacting closely with others to avoid "contamination" or to "protect" them from perceived harm. For instance, menstruating girls and women are disallowed to touch or use the same bucket with others. This myth is a baseless belief, as menstrual blood is not different from any other bodily fluid.

Restriction from religious spaces: Some religions restrict menstruating girls and women from entering places of worship, participating in certain rituals, or handling religious objects.

Menstruating women should avoid bathing or washing their hair: Some ethnic groups believe that girls and women should not bathe or wash their hair during menstruation because it is thought to disrupt the menstrual flow or cause health problems. This is not true, regular bathing and washing during menstruation is important for comfort and health.

Using sanitary pads for too long can make a woman infertile: It is believed that using sanitary pads for extended periods can cause infertility. This is not true, as long as sanitary pads are used properly and changed regularly to avoid infections it is safe and will not affect the childbearing ability of any girl or woman.

Menstruation is caused by a girl or woman's bad behaviour: It is believed that menstruation is a punishment or a result of bad behaviour or sins. This belief can contribute to shame and negative attitudes towards menstruation. It is never true that girls or women menstruate because they are being punished by the gods. Menstruation is a natural biological process that indicates a well-functioning reproductive system capable of producing healthy offspring.

Menstruating women cannot participate in physical activities: Some groups of people believe that menstruating girls and women should avoid physical activities like sports or dancing because it might worsen their menstrual flow or cause harm to their bodies. This is a misconception as physical activities can help to ease menstrual discomfort.

2. Stigma and secrecy

Need for privacy: Menstruation in some communities is seen as a private matter and discussing it openly is discouraged, especially in mixed-gender settings. This secrecy prevents young girls from learning about proper menstrual hygiene.

Embarrassment and shame: Menstruating individuals in some communities face teasing or shaming if their menstruation becomes noticeable. This can cause shame and discourage open discussions about menstrual health.

3. Cultural practices of menstrual education

Elderly women as educators: In some communities, knowledge about menstruation and menstrual hygiene is passed down by grandmothers or elderly women and mothers.

Rites of passage: Some ethnic groups in Ghana perform rites of passage to celebrate a girl's first menstruation, marking her transition into womanhood. These rites vary by community and may include teaching menstrual hygiene practices.

4. Economic and access factors

Limited water and sanitation facilities: Some beliefs restrict menstruating individuals from accessing communal water sources or sharing spaces due to concerns about menstrual blood contaminating the area.

Traditional menstrual hygiene practices

Use of traditional materials: In many communities, there is a belief that spending on sanitary products is unnecessary, especially where financial resources are limited. This reinforces the reliance on less hygienic traditional materials or other low-cost alternatives.

Examples of such materials include,

Cloth or rags: Pieces of old fabric or cloth are cut out from old clothing and used as absorbent materials. These cloths or rags are washed, dried, and reused over multiple cycles.

Cotton wool: Some people use raw cotton or cotton wool as an absorbent material either alone or wrapped in cloth for additional protection.

Sponge: Natural sponges beaten out roots of some trees are also occasionally used as absorbent materials. These are sometimes inserted like a tampon which are washed and reused, though they are less common now due to the potential health risks.

Dry grass or plant fibres: In some very rural settings, some girls or women use dried grasses or other plant fibres to absorb menstrual blood. This is now rare and often used only when no other materials are available.

Paper: Some individuals also use layers of paper, such as tissue or toilet paper, for temporary absorption, often folding it several times for thickness. However, this material is less effective and can be uncomfortable.

Leaves: Some large, absorbent leaves from specific plants are also used to manage menstruation in very resource-limited areas, though this is uncommon and often a last resort.

Sawdust or ash: In rare cases, girls and women use sawdust, wrapped in cloth or even ash as absorbent material. These practices are uncommon and can have health risks.

Old sanitary pad wrappers: In some very economically constrained areas, some girls or women reuse parts of the old sanitary pad wrappers or linings if they cannot afford new products.

These socio-cultural beliefs can impact the menstrual hygiene practices of women and girls and sometimes can lead to inadequate hygiene practices, discomfort, and a lack of access to modern menstrual products. Efforts to improve menstrual hygiene education to reduce stigma are increasingly being promoted in Ghana, helping communities shift towards healthier and more inclusive practices.

Activity 5.4 Beliefs, misconceptions on personal and menstrual hygiene

1. Brainstorm the following terms
 - a. Personal hygiene
 - b. Menstruation
2. Think of as many words as you can associated with these terms and write them in your notebook.
 - a. Share your words with your class to create a “whole class” word cloud.
 - b. In a group, use the internet to search the terms in your word cloud. Write the terms and definitions in your notebook.
 - c. With your group, create overarching definitions for:
 - i. Personal hygiene
 - ii. Menstruation
 - iii. Menstrual hygiene

Top tip: Use the words and definitions from the word cloud to guide you.

3. Share the definitions in a class discussion.
4. Following this activity, take some time to note any questions you have about personal hygiene and menstruation. If you are unable to answer these at the end of this section, ask your teacher for guidance.

Impact of personal and menstrual hygiene

5. In groups, discuss “What is the impact of personal and menstrual hygiene on social relationships?”
6. What impact can personal and menstrual hygiene have on self-confidence?
7. Share your thoughts and experiences with your group.

Top tip: *To help you in your discussion, think about what you have seen and experienced in your everyday life.*

8. In your group, use the internet to research the menstrual cycle.

- a. What is the menstrual cycle?
 - b. What are the four phases of the menstrual cycle?
 - c. What are some of the common symptoms experienced during each phase of the menstrual cycle?
 - d. What products are used during menstruation?
9. Discuss your findings with your group.

Socio-cultural beliefs

10. What are the socio-cultural beliefs and misconceptions on menstrual hygiene and traditional hygiene practices in your community?
- a. In your group, prepare a list of misconceptions and facts to counter each misconception.
 - b. Join another group to discuss your findings.
 - c. Add any additional information provided by the other group to your own group's list.
 - d. Present your findings to your class using a format of your choice.

EXTENDED READING

- <https://www.who.int/activities/preventing-noncommunicable-diseases/>
- https://www.who.int/health-topics/vaccines-and-immunization#tab=tab_1
- <https://my.clevelandclinic.org/health/articles/10132-menstrual-cycle>
- <https://www.hopkinsmedicine.org/health/wellness-and-prevention/menstrual-cycle-an-overview>

REVIEW QUESTIONS 5

1. What is menstruation?
2. Define personal and menstrual hygiene.
3. Name one exercise that can help manage menstrual cramps.
4. Why is it important to keep nails trimmed and clean?
5. What are the different types of menstrual products available?
6. What resources are available for individuals seeking information about menstrual hygiene?
7. Define the term immunity.
8. State three differences between vaccination and immunisation.
9. Create a poster that addresses a specific vaccine (for example, influenza, polio, measles, and TB).

Posters should include:

- a. What the vaccines protect.
- b. How it works.
- c. Importance of getting vaccinated.

The group presents their posters to the class.

SECTION

6

TRADITIONAL GAMES - PART TWO



PHYSICAL ACTIVITY AND HEALTH

Traditional Games

INTRODUCTION

African cloth parachute or sail is a culturally rich activity that blends creativity, teamwork, and physical coordination. Traditionally part of African play culture, it involves using large, colourful cloths to form parachute or sail-like structures. Participants tie the cloth around their waist, lift it over their heads, and perform synchronised movements that promote fitness, rhythm, and social bonding.

Engaging in this activity helps individuals to explore cultural heritage while developing motor skills, cooperation, and a sense of community. The ability to perform African cloth parachuting requires mastery of fundamental skills such as handling the cloth, synchronised movement and group coordination. Through this activity, individuals also develop a deeper appreciation for African traditions and their relevance in fostering physical activity and recreation.

KEY IDEAS

- **African cloth parachute:** African cloth parachute or sail game is a culturally significant activity rooted in African play culture. It emphasises teamwork, creativity, and physical coordination, using large, colourful cloths to create parachute or sail-like structures. This communal activity highlights the importance of collaboration and shared cultural heritage.
- **Purpose of the game:** The game is designed to be fun and engaging, encouraging physical movement and collaboration. It helps develop a sense of unity as participants work together to manage the cloth like a sail.

AFRICAN CLOTH PARACHUTE

What is the African Cloth Parachute or Sail Game?

The African cloth parachute or sail game is a game in which participants tie cloth around their waist, hold the remaining portion over their heads to catch the wind and run around mimicking the movement of wind filled sails. This game is both imaginative and symbolic often representing sailing or flight. The game is particularly popular among participants in the coastal or fishing communities in Ghana as it reflects the maritime culture and the use of sails in daily life. It is designed to stimulate the experience of sailing or gliding which encourage physical activity, creativity and joy through movement and play.



Figure 6.1: African cloth parachute or sail game

Origin and cultural significance of the game in Ghana

The African cloth parachute or sail game is rooted in communal traditions that emphasise teamwork and creativity. It draws inspirations from maritime cultures in Ghana, especially in the coastal communities where the use of sails for fishing boats are prevalent. The game symbolises the importance of wind, sailing and movement, much like how boats rely on wind to move across the water.

Purpose of the game

The game is designed to be fun and engaging, encouraging physical movement and collaboration. It helps develop a sense of unity as participants work together to manage the cloth like a sail. The game also sparks creativity as participants use their imagination to inspire the act of sailing or flying, exploring freedom of movement and enjoying the play environment.

Materials and preparation

A large piece of light, durable cloth is needed to make the game more effective. The cloth should be large enough to stretch over the head or across two individuals in a pair but not too heavy to hinder movement. Suitable cloth choice could include cotton sheets, printed cloths or any other cloth that is strong enough to catch the wind. The material must be strong enough to withstand running and the tension applied while it is held overhead.



Figure. 6.2: Cloth for traditional parachute game

Safe ways to tie the cloth around the waist

To ensure safety and proper execution of the game, participants tie the cloth securely around the waist without it being too tight or too loose to ensure the cloth stays in place without restricting movement or causing discomfort. The cloth should not be too long or too short. It needs to hang down sufficiently to allow the remaining piece to be held overhead.

Ensuring safety in the playing area

The area used for the game must be free from obstacles or objects that could cause tripping or falling. The space should be wide enough for participants to run without crashing into each other or any objects. If outdoors, the wind conditions should be taken into consideration, as strong winds could make the cloth more difficult to control and lead to accidents.

Techniques of the game

1. **How to properly hold the cloth:** The cloth is held by grasping it at both ends and raising it above the head. The aim is to have the cloth puff in the wind, mimicking a sail or parachute. Even grip should be maintained to allow the cloth to catch the wind effectively. Stance should be adjusted to account for the wind's resistance.
2. **Running technique to mimic sailing or gliding:** For the cloth to catch the wind, participants must maintain an upright posture while running with a slight lean to mimic the wind's pull. Participants should adjust their speed and direction based on how the cloth behaves in the wind, ensuring they can maintain control of the cloth and avoid running into other participants.

3. **Balancing and maintaining coordination while moving:** The game requires balance and coordination especially when running with the cloth overhead. The arms should be used to stabilise the movement and adjust the cloth's position overhead to help maintain control.
4. **The role of the game in the life of a Ghanaian child:** The African sail or parachute game plays a significant role in the traditional childhood of a Ghanaian child, contributing to their physical, social, cultural, and emotional development. The game:

Promotes physical development	<ol style="list-style-type: none"> 1. The game encourages strength, endurance and agility as participants run, turn and move with the sail. 2. It enhances coordination and balance, helping participants develop motor skills as they maintain the cloth overhead while moving. 3. It improves aerobic fitness through sustained movement and active play. 4. The game involves a lot of running, which helps improve cardiovascular endurance. As participants engage in continuous motion, their heart rate increases, leading to the development of stamina and fitness. The varied intensity of the running or movement contributes to improving aerobic capacity and muscle strength.
Fosters social skills	<ol style="list-style-type: none"> 1. The game provides opportunities for teamwork and collaboration, as participants often play in groups, learning to coordinate their movements and work together. 2. It teaches communication skills as participants plan and execute group movements or relay activities. 3. It encourages fair play and respect for others through interactions and shared rules during the game. 4. The game emphasises teamwork as participants work together in their groups to compete and win as a group. They learn to communicate, share ideas, support and cheer each other in a pursuit of a common goal. This nurtures a sense of community and belonging, helping to build social connections among participants.
Fosters cultural education	<ol style="list-style-type: none"> 1. The game connects participants to Ghanaian heritage, as the game often incorporates traditional cloth like kente or wax prints, which carry cultural and symbolic significance. 2. It instills a sense of pride and belonging, as the game reflects a shared cultural experience among peers. 3. The use of cloth to represent a sail or parachute ties back to Ghana's coastal fishing communities, where sails are integral to the operation of fishing boats. By recreating this action in the game, participants engage with the cultural heritage of the coastal Ghana, understanding the connection between nature (wind, sail) and the livelihood of the communities.

Fosters cultural education	4. The sail also represents many things in Ghanaian culture, such as the journey by water, freedom from slavery where our forefathers were transported across the ocean to the western world and, fishing for a living. Running with the cloth overhead reflects movement towards a common goal and aspirations, reflecting the collective effort required to move forward, much like how communities work together to achieve common goals.
Sparks creativity	<ol style="list-style-type: none"> 1. The game allows participants to express themselves through innovative movements with the sail, encouraging imagination and originality. 2. It provides opportunities to create patterns or movements, promoting artistic expression tied to cultural rhythms. 3. The game offers participants an opportunity to express themselves creatively, exploring different movements while using the cloth. It encourages imagination and spontaneous play, which is deeply rooted in African culture's focus on communal and expressive forms of entertainment.
Builds emotional resilience	<ol style="list-style-type: none"> 1. The game offers an outlet for joy and stress relief, as the playful nature of the game helps participants release energy and feel a sense of freedom. 2. It teaches problem-solving skills, as they navigate challenges like keeping the sail steady or coordinating movements with others. 3. It boosts self-confidence, as participants master the skill of handling the sail and participate actively in group activities.
Enhances connection to nature	<ol style="list-style-type: none"> 1. The game is played outdoors, which helps participants develop an appreciation for the environment, as they 'catch the wind' and experience the joy of moving in natural spaces. 2. In traditional Ghanaian childhood, the African cloth sail or parachute game is more than just play. It is a multifaceted activity that integrates culture, physical activity, creativity and community-building, forming an essential part of a child's holistic development.

Activity 6.1 Catching the wind: Storytelling

Listen to your teacher telling the following story.

A long time ago, in the heart of a lively Ghanaian village, life was full of energy and tradition. The village was alive with the talk of market women, the rhythmic pounding of fufu and the melodies of birds that danced in the skies above. But it was the laughter of participants that truly filled the air, carrying a sense of joy and wonder wherever it went.

One day, after their morning chores, the participants gathered at the edge of the village where the open fields stretched as far as the eye could see. Each child brought

a colourful cloth of bright yellows, deep reds, lemon greens, oranges and blues, some passed down from their elders and others freshly woven by their mothers. These cloths were not just pieces of fabric, but symbols of their heritage, their family and their dreams.

As the midday sun cast long shadows over the fields, the wind began to blow. The participants tied the cloths comfortably around their waists, lifting the free ends high above their heads. With the wind catching the fabric, the cloths rose like sails on mighty ships. "Look at me" one boy shouted, his cloth rising as he sprinted across the grass. "I am flying like an eagle"

Others joined in, spinning and weaving through the fields with their colourful sails painting the landscape with movement and life. Some imagined they were birds, gliding effortlessly on the wind, while others saw themselves as explorers, journeying to far-off lands on the sea. Together, they created a harmony of laughter and excitement, their cloths rippling and snapping like flags in the breeze.

But this game was more than just a play. It brought the participants together, teaching them how to move as one when they formed lines and circles, holding hands and coordinating their sails to catch the same gusts of wind. It reminded them of their shared heritage, the strength of unity and the beauty of their culture. Elders watching from the shade smiled knowingly, recognising that this simple game was weaving bonds that would last a lifetime.

As the sun began to set and the wind grew softer, the participants gathered in a circle, their sails draped over their shoulders. They shared stories of their imaginary adventures and laughed about who had the most "powerful" sail. Before heading home, one child stood up and said, "One day, when I have children, I will teach them this game too. It feels like freedom."

And so, the tradition of catching the wind was passed down, generation after generation, as a symbol of joy, unity and the boundless spirit of Ghanaian childhood.

Today, we will step into their shoes, embrace the wind and relive the magic of "catching the wind" together. Let us see how high our sails can fly.

Discussion

With your classmates, discuss the significance of the game, its origins and the role it plays in a traditional Ghanaian childhood.

Activity 6.2 African cloth parachute

1. In groups, discuss common African fabrics (Ghanaian fabrics) you know. Remember to include the meaning of the cloth patterns in your discussion. Make notes of the patterns and their meanings in your notebook.

For example:

- a. Kente: Represents cultural heritage.
- b. Adinkra: Means goodbye.

2. Warm-up

Spread your arms like sails, feeling the 'wind' around you. Your teacher will call out directions, move around following these directions. For example, run like the wind or turn with the breeze, move like an aeroplane, etc.

Note: *You do not need clothes to perform this warm-up.*

3. African cloth parachute

- a. Select your cloth you will use for the game.
- b. Watch a demonstration of how to tie the cloth securely around the waist and how to hold the top corners above the head for the best sail effect.
- c. Following the demonstration, practice tying and holding the cloth.
- d. Move the stand or walk around holding the cloth steady.
- e. What is the best position to stand in relation to the wind to catch the wind in your sail?

4. Running with the sail

For all of the following activities, be sure to observe safety measures by maintaining awareness of your surroundings and using proper techniques to avoid tripping or falling while running with the sail.

- a. Beeline run: In groups, in rows, hold the loose ends of the cloth above and behind your head, a little wider than shoulder width apart, run forward in a moderate speed in a straight course to a target.
- b. Slalom run: In groups, one behind the other, perform the slalom run using the sail at a moderate speed to a target.
- c. Fun game: In groups of five, partake in a 30-metre beeline run or slalom run with the African cloth sail. Winners from various groups will qualify to run in the final race to determine the first, second, third and fourth placings.

5. Cool down and reflection

- a. Follow your teacher or a classmate in a cool-down activity.
- b. With your classmates, discuss what went well and what could be improved with the activities covered in today's lesson.

REVIEW QUESTIONS 6

1. What are some common patterns found in African cloth? What does each pattern represent?
2. What is the African cloth parachute or sail game?
3. What are two important benefits of the African cloth parachute or sail game for children?

SECTION

7

**INDIVIDUAL AND
TEAM SPORTS -
PART THREE**



PHYSICAL ACTIVITY AND HEALTH

Sports Participation

INTRODUCTION

Volleyball was invented in 1895 by William G. Morgan, physical director of the Young Men's Christian Association (YMCA) in Holyoke, Massachusetts. It was designed as an indoor sport intended for older persons in a recreational setting who found the new game of basketball too vigorous. Morgan called the sport “**mintonette**,” until a professor from Springfield College in Massachusetts noted the volleying nature of play and proposed the name of “**volleyball**.” The original rules were written by Morgan and printed in the first edition of the Official Handbook of the Athletic League of the Young Men's Christian Associations of North America (1897). The game soon proved to have wide appeal for both sexes in schools, playgrounds, the armed forces, and other organisations in the United States, and it was subsequently introduced to other countries.

In 1916 rules were issued jointly by the YMCA and the National Collegiate Athletic Association (NCAA). The first nationwide tournament in the United States was conducted by the National YMCA Physical Education Committee in New York City in 1922. The United States Volleyball Association (USVBA) was formed in 1928 and recognised as the rule-making, governing body in the United States. From 1928 the USVBA, now known as USA Volleyball (USAV), has conducted annual national men's and senior men's (age 35 and older) volleyball championships, except during 1944 and 1945. Its women's division was started in 1949, and a senior women's division (age 30 and older) was added in 1977. Other national events in the United States are conducted by member groups of the USAV such as the YMCA and the NCAA.

Volleyball was introduced into Europe by American troops during World War I, when national organisations were formed. The Fédération Internationale de Volley Ball (FIVB) was organised in Paris in 1947 and moved to Lausanne, Switzerland, in 1984. The USVBA was one of the 13 charter members of the FIVB, whose membership grew to more than 210 member countries by the late 20th century.

KEY IDEAS

- **Serving in volleyball:** Starting the rally by sending the ball over the net into the opponent's court.
- **Underarm serve:** The underarm serve in volleyball is a serving technique where the player hits the ball with an underarm motion, using one hand to hit the ball from below the waist. The ball is usually tossed slightly into the air before being hit with the palm or the heel of the hand.
- **Digging in volleyball:** this is a defensive skill used to prevent or stop a ball from hitting or touching the ground after an opponent's attack, such as a spike.

- **Digging reception:** Digging reception in volleyball refers to the defensive skill of receiving a served ball. It involves using quick reactions and proper method, usually the forearms, to control and pass the ball accurately to a teammate or a setter.
- **Zones in volleyball:** The volleyball court is divided into six zones or positions. The zones are numbered 1 to 6 and each zone corresponds to a specific area of the court where players will position themselves during the game.
- **Rotational order:** The specific sequence in which players rotate around the court after each serve. The rotation ensures that all players move through all six zones as the game progresses.

UNDERARM SERVE AND DIGGING RECEPTION IN VOLLEYBALL

Basic Rules of Volleyball

There are some basic rules that have to be followed in the game of volleyball. **Table 7.1** presents these rules.

Table 7.1: Basic rules of volleyball

Team composition	<ul style="list-style-type: none"> • Each team consists of six players on the court at a time. • Teams are allowed substitutes, who can rotate in following specific rules.
Scoring system	<ul style="list-style-type: none"> • Matches are played using a rally scoring system, where a point is awarded on every rally regardless of which team served. • The first team to score 25 points with at least a two-point lead wins the set. • Matches are normally best-of-five sets; the fifth set, if necessary, is played to 15 points.
Service rules	<ul style="list-style-type: none"> • The server must serve the ball from behind the baseline. • The serve must cross the net and land inside the opponent's court without touching the net (net serves are allowed if the ball goes over). • Teams rotate clockwise after winning a point on the opponent's serve.
Ball contact	<ul style="list-style-type: none"> • Each team is allowed up to three touches to return the ball over the net. • A player cannot hit the ball twice consecutively (except during a block or the first touch). • The ball must not be held, lifted or carried.
Net rules	<ul style="list-style-type: none"> • The ball must pass over the net within the designated boundaries. • Players must not touch the net during play. • A player's body may cross under the net if it does not interfere with the opponent.

Rotation and positioning	<ul style="list-style-type: none"> • Players must maintain their rotational order during service. • After the serve, players can move freely but must return to their positions for the next rotation.
Boundary lines	<ul style="list-style-type: none"> • Balls landing on the boundary lines are considered in. • If the ball touches anything outside the boundary lines (e.g., walls, ceiling), it is considered out.
Attacking and blocking	<ul style="list-style-type: none"> • Back-row players cannot attack the ball above the net from in front of the attack line (10-foot line). • Blocking a serve is not allowed. • A block does not count as one of the three touches.
Timeouts and substitutions	<ul style="list-style-type: none"> • Each team is allowed two timeouts per set. • Substitutions can occur during stoppages but must follow rotation rules.

Fundamental Skills in Volleyball

Fundamental skills in volleyball are the core techniques and actions that form the foundation of the game. These skills are the essential elements players must develop to actively engage in and contribute to a volleyball match. Proficiency in these skills allows players to implement offensive and defensive strategies, collaborate effectively as a team and respond to different game situations. These skills are fundamental because they are required for every player, regardless of their position, to perform successfully in a volleyball game. Some examples of the fundamental skills in volleyball are presented in **Table 7.2**.

Table 7.2: Examples of the fundamental skills in volleyball

Serving	Starting the rally by sending the ball over the net into the opponent's court.
Passing	Receiving the ball and directing it to a teammate, usually using the forearm pass (bump).
Setting	Preparing the ball for an attack by accurately positioning it for a teammate to spike.
Spiking	Striking the ball forcefully downward into the opponent's court to score points.
Blocking	Preventing the ball from crossing the net after an opponent's attack.
Digging	Defending against an opponent's attack by keeping the ball in play through a low pass.

Serving in volleyball

Serving in volleyball is the act of starting a rally by sending the ball over the net into the opponent's court. It is an important skill used to initiate play at the beginning of a game, after a point is scored and following a side-out. The serve is performed from behind the baseline and its main objective is to make it difficult for the receiving team to control the ball, giving the serving team a potential advantage to win a point.

Common types of serves in volleyball

1. **Underarm serve:** The ball is held in one hand and struck with the opposite hand using an underhand motion. This serve is easy to execute and is commonly used by beginners.
2. **Overarm serve:** The ball is tossed into the air and struck with the dominant hand in an overhand motion. It allows for more power and control compared to the underhand serve.
3. **Jump serve:** A more advanced serve where the player tosses the ball into the air, jumps and hits it with force. This serve generates significant power and speed, making it harder for opponents to return.
4. **Float serve:** This is similar to the overarm serve but with minimal spin, causing the ball to "float" randomly in the air. It is challenging for the receiving team to anticipate its movement.
5. **Topspin serve:** An overarm serve where the player imparts spin on the ball, causing it to drop quickly after crossing the net. It is used to pressure opponents with its speed and sudden drop.

Let's now take a closer look at the underarm serve.

The underarm serve

The underarm serve in volleyball is a serving technique where the player hits the ball with an underarm motion, using one hand to hit the ball from below the waist. The ball is usually tossed slightly into the air before being hit with the palm or the heel of the hand. This serve is generally easier to control than other types of serves, making it a good option for beginners or for players who are less confident in their serving skills. The goal of the underarm serve is to send the ball over the net and into the opponent's court while minimising the risk of error.

How to serve underhand in volleyball

Table 7.3: How to serve underhand in volleyball

Stand behind the service line or the baseline with the non-dominant foot slightly forward and focus on the target area of the opponent's court.
Hold the ball steady at thigh-height in front of the non-dominant hand.
Make a fist with the dominant hand.
Bring the dominant arm straight back.
Step with the dominant leg forward and swing arm forward.
Hit the ball with the top of fist or palm send it over the net.

Part one: Positioning

Get the feet into position: Stand and position the non-dominant foot in front with the toes facing forward and the dominant foot behind with the toes pointing slightly out. Slightly shift the body weight to the dominant foot with the hips facing straight forward and not angled to the side.



Figure 7.1: Standing the right way behind the service line or the baseline

Ready the ball: Cup the non-dominant hand slightly and place the ball in it. Ensure the ball is securely balanced so it will not wobble or fall out of the hand. Keep the fingers slightly loose to distribute the weight of the ball to help it stay balanced. The ball should not be gripped with the fingers. It must stay stable but must still be able to fly out of the hand when hit.



Figure 7.2: Holding the ball the right way

Lower the ball: Bring the arm holding the ball across to the side of the body in front of the hitting arm. The ball should be at the height of mid-thigh. Straighten the arm with the ball in it and move it to the side by shifting the arm at the shoulder and not the elbow.



Figure 7.3: Holding the ball at the correct height

Lean the shoulders forward: Move the hips back and keep the upper back straight as the shoulders are brought towards the ball. This brings the body a little closer to the ball to have more control over it. As the hips move back, raise the toes of the front foot so the heel is touching the ground and the toes are pointing up.



Figure 7.4: Leaning at the right angle and the position of the hitting arm

Part two: Aiming

Choose the correct spot to send the ball: Choose a strategic place for the ball to land. Direct the ball to planned spot on the court. Aim for the deep right or deep left of the court. This will force passers to move out of formation. Aim for places between players. This will cause players to be confused about who should get the ball, which will improve the tactical advantage.

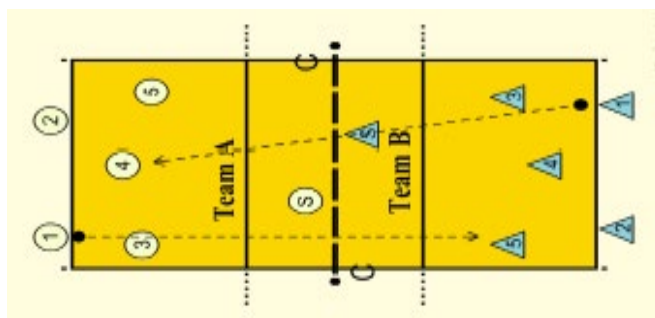


Figure 7.5: The deep right or deep left of the court to aim at when serving

Adjust the angle to the net: When aiming for the deep left, the shoulders should point left and the back foot should move slightly right, and vice versa. Trace a straight line with the eyes across the court. Bring the eyes from the chosen landing spot to the point on the bottom of the ball where the fist or palm will hit. If the head moves to the side to trace the line from the landing point to the contact point on the ball, then feet and shoulders must be adjusted so the body can face the chosen landing point.



Figure 7.6: Tracing the spot to send the ball with the eyes and where to hit the ball

Squeeze the hitting hand into a fist: Rotate the arm and closed fingers so that the inside of the wrist will face up. Picture the fist hitting the contact point on the ball and following a line to the point where the ball is to land. It is also possible to have the fist facing the side, with the wrist turned inside and thumb facing up.



Figure 7.7: How squeeze the hitting hand into a fist

Part three: Serving

Determine the arc of the ball: The desired arc of the ball depends on whether the ball lands deep on the opposing side or closer to the server. Hitting the ball with more force forward will let the ball fly lower and faster to the back of the court, while hitting the ball upward will let the ball fly higher and land closer to the net. Decide whether to send the ball forwards or upwards.

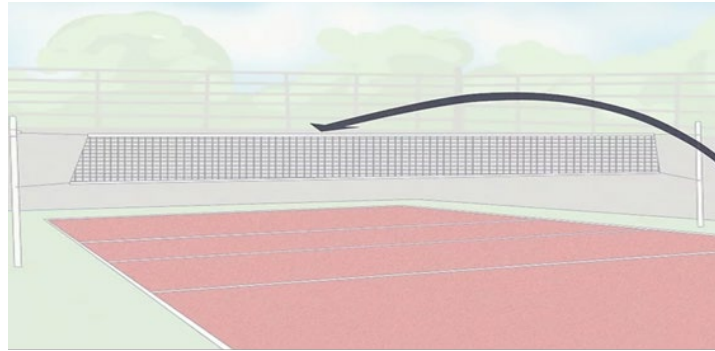


Figure 7.8: Deciding the movement of the ball

Draw the hitting arm straight back: The hitting hand is moved quickly like a pendulum and swung forward firmly, hitting the bottom of the ball with a closed fist. The ball should be hit just below the center so it will follow an upward path over the net. The speed of the swing should be increased just before it makes contact with the bottom of the ball.



Figure 7.9: How to hit the ball correctly

Swing the arm and step forward: The body weight should be shifted onto the non-dominant foot which is in front. The whole body moves forward and up, propelling the ball over the net.



Figure 7.10: How to swing the arm and step forward when serving

Follow through with the arm: Allow the arm to continue in an upward arc after hitting the ball. Bringing the arm all the way up will improve the chance of a straight and true flight path over the net. Keep the arm straight. It should swing straight up like a pendulum to a height equal to or just above the head. Recall the imaginary line traced from the landing point to the contact point on the ball with the fist tracing over that line as it follows through.

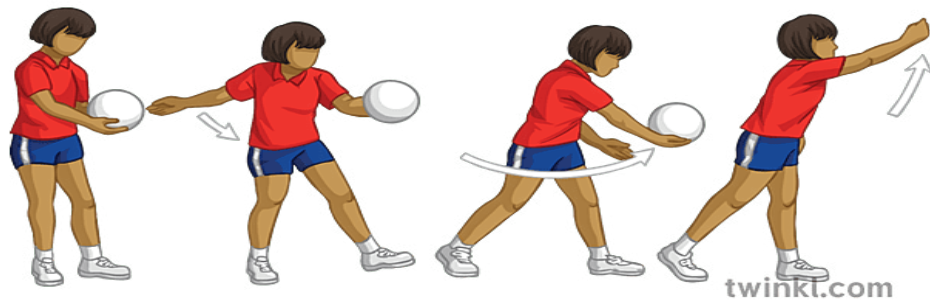


Figure 7.11: Following through with the hitting arm after serving

Now we have looked at how to perform the underarm serve, let's look at the skill of digging in volleyball.

Digging in volleyball

Digging in volleyball is a defensive skill used to prevent or stop a ball from hitting or touching the ground after an opponent's attack, such as a spike. It requires quick and sharp reflexes and accurate execution to maintain control of the ball to keep the ball in play to allow the team to transition from defense to offense.

Digging reception

Digging reception in volleyball refers to the defensive skill of receiving a served ball. It involves using quick reactions and proper methods, usually the forearms, to control and pass the ball accurately to a teammate or a setter. The aim is to ensure the serve is handled cleanly and directed in a way that allows the team to transition smoothly into offense.



Figure 7.12: Digging reception in volleyball

How to perform the dig

Table 7.4: How to perform the dig

Assume the ready position: Stay low with the feet shoulder-width apart, knees bent and hands ready. Keep the body weight slightly forward on the balls of the feet.
Read the play: Watch the hitter's body language and arm swing to anticipate where the ball will go. Be prepared to move quickly in any direction.
Move to the ball: Take short and controlled steps to position the body under or near the ball's path. Maintain balance to stay grounded for stability.
Create a platform: Extend both arms and lock the elbows to form a flat surface with the forearms and keep the hands together with thumbs aligned.
Contact and redirect the ball: Let the ball hit the forearms near the wrists while keeping the arms steady to absorb the impact. Use the legs to gently and slightly push upward to guide the ball towards a teammate or over the net into the opposing team's court.
Stay in the play: After digging, quickly return to a ready position to remain engaged in the rally.
Communicate and recover: When a ball is directed, call out clearly to claim responsibility for the ball. Return to a ready position after receiving and redirecting it or sending it over the net to the opponent's court to stay engaged in the rally.



Figure 7.13: How to get ready to receive a ball



Figure 7.14: The right way of forming a flat surface with the forearms to receive the ball

The Importance of The Underarm Serve in Volleyball

The underarm serve is important for the following reasons.

1. **It is a beginner-friendly technique:** The underarm serve is simple and easy to learn, making it ideal for beginners and young players who are still developing strength and coordination.
2. **It ensures consistency:** With a controlled motion and minimal difficulty, the underarm serve helps players consistently deliver the ball into play, reducing the chances of errors.
3. **It is effective for short and precise serves:** It allows for precise placement, enabling servers to target specific areas of the opponent's court, such as weak zones or spaces between players.
4. **It promotes team engagement:** The underarm serve starts the rally with a manageable ball for the receiving team, encouraging longer rallies and greater team interaction during practice or recreational play.
5. **It builds confidence for advanced skills:** Mastering the underarm serve gives players the confidence to progress to more advanced serves, such as the overhand or jump serve.

Activity 7.1 Ball control challenge in volleyball

Complete this activity in a group. Your group should have one ball.

1. You will be asked to perform certain tasks.
For example;
 - a. Balance the ball on your forearm.
 - b. Toss the ball lightly and catch it.
 - c. Pass the ball to another member of your group using only your forearms.
2. In your group, form a circle. The aim is to keep the ball in the air as long as you can without the ball dropping and hitting the ground.
3. Pass the ball around your circle using only your forearms.
4. Count how many consecutive touches your group achieves without the ball hitting the ground.
5. Share your success with your classmates. Which group had the most consecutive touches?

Activity 7.2 Rules and skills demonstration in volleyball

1. Can you recall the basic rules of volleyball? In a class discussion, share and discuss the rules of the game.
2. Why are the skills of the underarm serve and digging important in the game? Share your thoughts with your classmates.
3. Watch a demonstration of the underarm serve and digging reception. Keep a close eye out for the following:
 - a. Stance
 - b. Grip
 - c. Ball position
 - d. Platform formation
 - e. Hand position
 - f. Swing mechanics
4. If you have any questions following the demonstration, be sure to ask them before you start practising the skills.
5. Practice the movement for the skills either in a group or with a partner. You don't need a ball for this activity, as the focus here should be on the movements required to perform the skills.

Here are a few tips

Stance and grip

- Feet shoulder-width apart.
- Knees slightly bent and non-dominant hand holding the ball at waist height.

Practice the motion: Simulate the swinging motion without the ball (focus on the whole body, not just your non-dominant hand).

Ball toss

- Toss the ball slightly into the air using only your non-dominant hand.
- Practice for about five repetitions at the right height.

Combine the toss and the hit

- Simulate the toss and the hit movement without a ball.
- 'Toss' the ball slightly into the air using your non-dominant hand.
- Step forward with your dominant foot as you swing your dominant hand to strike the ball.
- Follow through, ensuring your hand finishes high.

Digging reception

- Stay low with the feet shoulder-width apart, knees bent, and hands ready.

- Keep your body weight slightly forward on the balls of your feet.
- Extend both arms and lock the elbows to form a flat surface with the forearms.
- Keep your hands together with thumbs aligned.

Feedback and Correction: Watch your group members or partner practice the movements, give feedback to help them adjust and improve their skills.

Activity 7.3 How to serve in volleyball

1. In a group, form a circle. You should have 3 metres between you and the person opposite.
2. With a ball, practice the underarm serve to members of your group.
3. If the ball comes to you, catch it and perform an underarm serve to another member of your group.

Now, let's practice on a court.

4. In your group, stand on one side of the net.
5. Practice serving the ball to the opposite court, focusing on hitting designated targets or zones.
6. Start close to the net and move further away as your accuracy improves. You can also start with larger targets and gradually make them smaller to increase difficulty.

Top tip: Focus on the toss, proper arm swing, ball contact and follow-through.

Activity 7.4 Digging reception and receiving

1. Form a group with your classmate, and you are going to practice digging reception.
2. Gently throw the ball to another member of your group using an underarm throw.
3. The receiver quickly gets into the digging stance and returns the ball to the thrower.
4. Rotate around your group until all members have had a chance to practice the dig reception.
5. As you become more confident, vary the ball placement (slightly left, right or short of the receiver).

Top tip: Focus on proper hand placement, bent knees and low posture. When moving to receive the ball, keep your movement smooth and remember to reset after each dig.

Digging and receiving

6. Form two teams, Team A and Team B.
7. A person from Team A serves the ball using the underarm serve, aiming to land the ball in Team B's backcourt.
8. Team B focuses on using digging to receive the serve, ensuring proper posture and hand positioning to control the ball and direct it back to the server.
9. After each serve, rotate positions clockwise. (Team A diggers move to Team B to become servers).

Activity 7.5 Serve and dig rally challenge

For this activity, you will be in teams of 3-5 players. You will use half the court and will need one ball to share between the two teams.

1. Serve the ball using the underarm serve to the opposing team.
2. The opposing team must return the ball using the digging technique.
3. In this game, teams can touch the ball up to three times (dig-dig-over); however, you must alternate touches within your team.
4. After every three serves, rotate players to ensure everyone practices both serving and receiving.
5. Teams switch roles (serving vs. receiving) after every rally.

Note: *Remember to cool down following the activities.*

6. With your classmates, discuss what went well and what you could improve. What did you enjoy most about the lesson? What is one thing you are going to focus on during the next lesson, where you will continue to practice your serving and digging reception skills?

Before we continue to practice our volleyball skills, let's do a quick recap of what we've covered so far.

HISTORY OF VOLLEYBALL

Volleyball was invented in 1895 by William G. Morgan in the United States. It was designed as a less physically demanding alternative to basketball, intended for older individuals in a recreational setting. Over time, it evolved into a competitive sport played worldwide and is now an Olympic sport. Key features of the game include teamwork, skill execution and strategy with six players per side.

Basic rules

1. **Boundaries:** The ball must land within the court boundaries to be in play; touching the boundary lines is also valid.

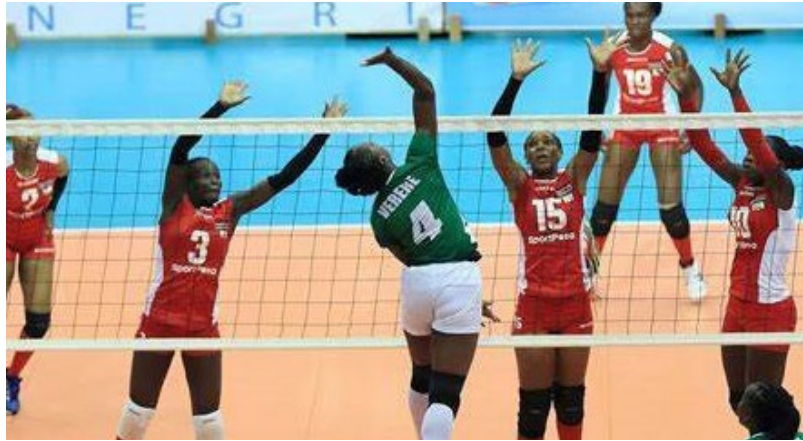


Figure 7.15: Volleyball game



Figure 7.16: Physically challenged volleyball match

Now, let's continue to practice our volleyball skills.

Activity 7.6 Digging accuracy in volleyball and a mini game.

This activity aims to improve your accuracy, control and strategic thinking when performing the underarm serve.

1. The court has been divided into different areas (or zones), and each area has been assigned a points value.
 - a. You have five serves to score as many points as you can by serving the ball into the zones.
 - b. Once each member of your group has completed the challenge, add up all your points to get your team total.
 - c. Share your total with your classmates. How did your team do?

Digging accuracy challenge

2. Complete this activity in a small group of 4-6 of your friends.
3. One member of your group will throw you the ball. Your job is to adopt the correct stance and receive and return the ball to a designated target area.
4. You get 1 point for each ball that lands in the target area.

- Remember to rotate roles so all members of your group have a chance to throw the ball and be the digger.

Top tip: Start with gentle throws that are high and easier to receive and return. You can then start to increase the difficulty for the digger by varying the ball toss. (For example, increase the speed, height and angle of the throw).

Mini game, 3v3

In groups of 3, play a game using the underarm serve and digging technique.

- After each rally, rotate positions within your team.
- The ball can be played up to times on the court before it moves to the opposite side of the court.
- The first team to get to five points wins the game.
- The next set of teams plays until all the groups have played.
- Winners from each match play against each other until we get the last team standing.

Note: Remember to cool down following the activities.

Did you achieve the one thing you were going to focus on in this lesson? (Remember you identified this at the end of your last lesson). Will you continue to practise your mini-game? volleyball skills? If yes, what plans will you put in place to allow you to do this?

ZONES AND ROTATIONAL ORDER ON THE COURT IN VOLLEYBALL

Understanding the Volleyball Court Layout

A volleyball court is a rectangular area measuring 18 metres in length and 9 metres in width. It is divided into two equal halves by a centre line and a net. Each side has a service area marked 3 metres away from the centre line, where players initiate serves.

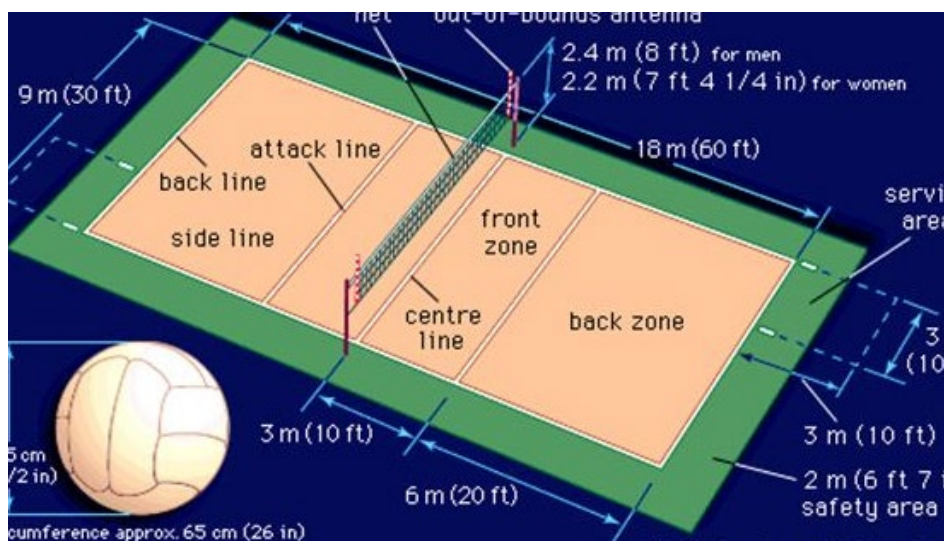


Figure 7.17: Volleyball court

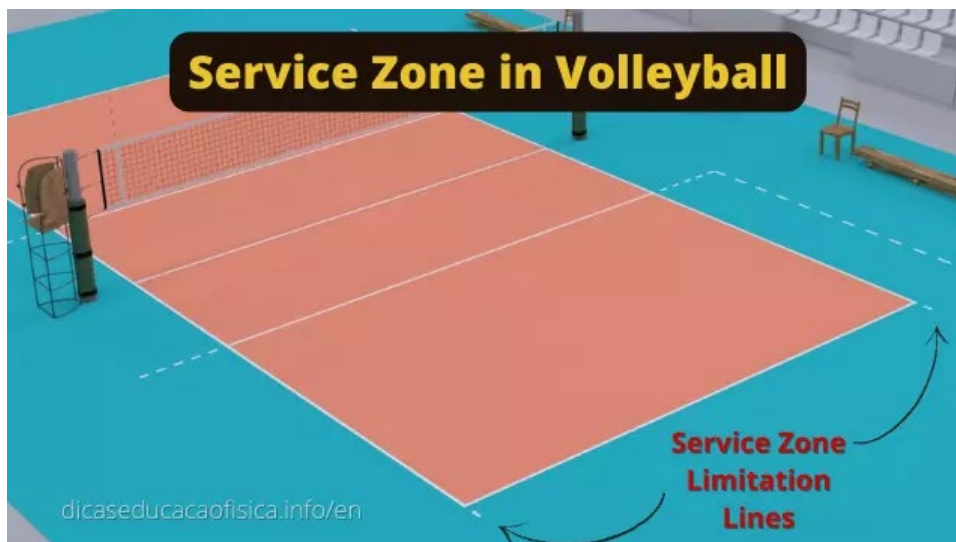
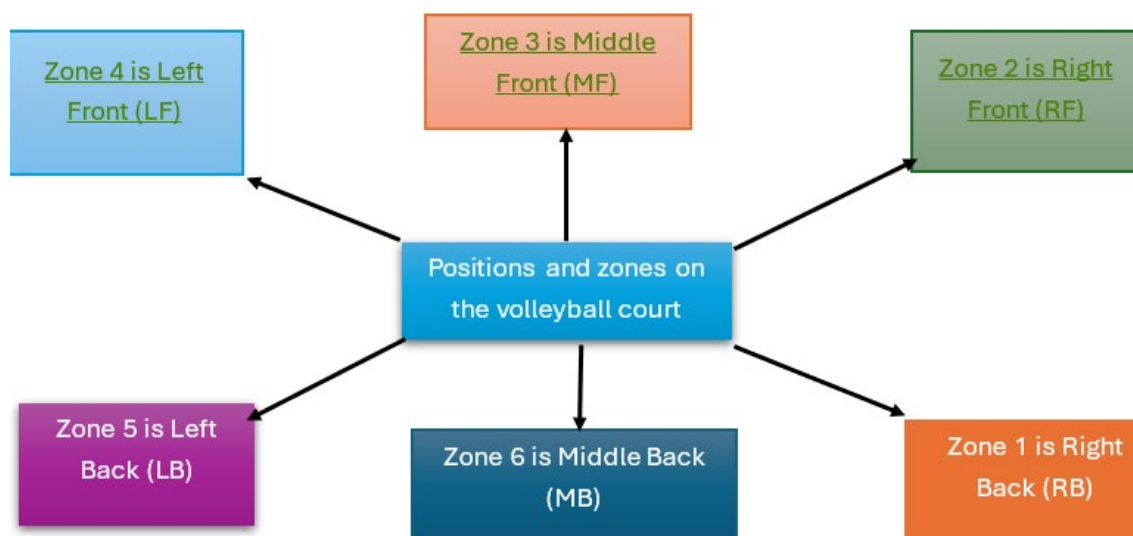


Figure 7.18: Volleyball court showing the service area or zone

Positions and zones on the court

The volleyball court is divided into six zones. These zones are also called positions. The zones are numbered 1 to 6, and each zone corresponds to a specific area of the court where players will position themselves during the game.



1. **Zone 1** is the serving position which is in the right-back corner of the court (when serving), the server starts the play there.
2. **Zone 2** is the right-front corner, which is where the player focuses on blocking or setting up an attack on the right side of the court.
3. **Zone 3** is positioned at the centre of the front row players in this zone the focus is on receiving serves or setting up attacks.
4. **Zone 4** is at the left-front corner similar to Zone 2 where players often take positions for blocking and attacking on the left side of the court.

5. **Zone 5** is located at the left-back corner. This is a defensive position on the back row where players focus on receiving serves and digging attacks.
6. **Zone 6** is at the middle-back row, players here mainly focus on defence and passing, including receiving serves and setting up plays from the back row. It is also where players move to in the rotation after serving.

Each zone has specific roles based on where the player is located in relation to the ball, their position, and the strategy.

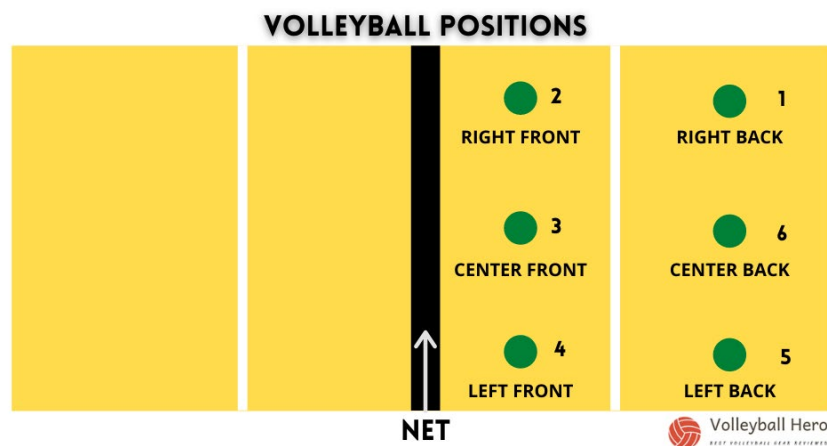


Figure 7.20: Volleyball court with the location of the various zones

Rotation and Rotational Order in Volleyball

In volleyball, rotation is the organised movement of players around the court in a clockwise direction after winning a side out or the serve. Rotational order refers to the specific sequence in which players must move to their assigned positions on the court during the game. This order ensures that all players rotate through each position on the court and take turns serving. When a team wins a side out or a serve, players rotate one position clockwise. For example, the player in Zone 1 (serving position) rotates to Zone 6 and the player in Zone 6 moves to Zone 5, the player in zone 5 moves to Zone 4, the player in Zone 4 moves to Zone 3, the player in Zone 3 moves to Zone 2 and the player in Zone 2 moves to Zone 1 in that order.

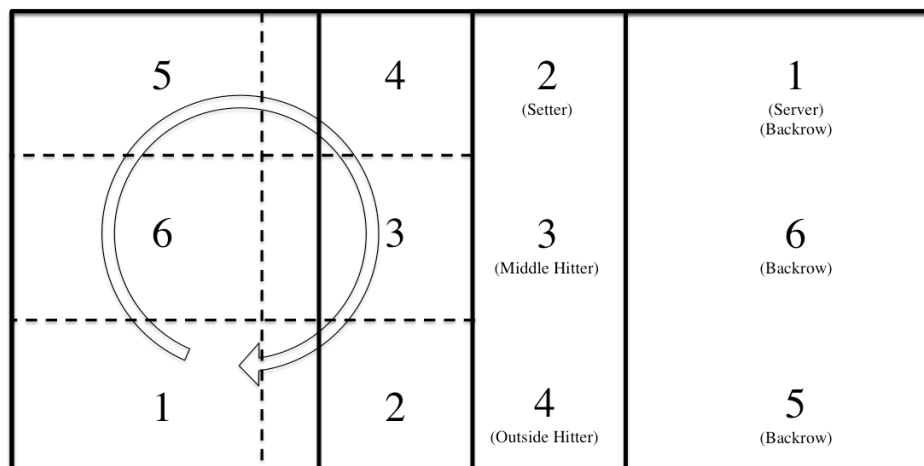


Figure 7.21: Order of rotation on the volleyball court

Rotational rules

Table 7.5: Rotational rules

Starting positions	At the beginning of the game, each team lines up in their respective starting positions. The front-row players (Zones 2, 3 and 4) are closer to the net, while the back-row players (Zones 1, 5 and 6) are farther from the net.
Maintaining rotation	After serving, players must always return to the correct rotational position. A player cannot be in the same zone for consecutive serves.
Rotation violation	A rotation violation occurs if players are not in the correct positions when the ball is served. This will result in a loss of the serve and a point for the opposing team.
Back-row play	Players in the back row (Zones 1, 5 and 6) cannot attack the ball above the net’s height from the front row (Zones 2, 3 and 4) and they cannot block or attempt to block a spike.



Figure 7.22: Volleyball game in progress



Figure 7.23: Sitting volleyball at the ParaVolley Africa Sitting Volleyball Zone Championships, 2024



Figure 7.24 Visually impaired volleyball at the Chugai hands-on Blind Sports Event 2018

Rotational fouls

Rotational fouls in volleyball occur when players fail to follow the proper rotation order or position themselves incorrectly during play. These fouls disrupt the fairness and structure of the game.

Types of rotational fouls

Table 7.6: Types of rotational fouls

Rotational foul	Explanation	Example
Out of rotation (overlap)	<p>This happens when players are not in their designated rotational positions at the moment the ball is served.</p> <p>This is when a back-row player (Zones 1, 6 or 5) is positioned closer to the net than the corresponding front-row player (Zones 2, 3 or 4) during the serve.</p>	<p>When a player in Zone 6 (middle-back) is standing closer to the net than the player in zone 3 (middle-front).</p>
Rotational order violation or incorrect sequence during rotation	<p>This occurs when a team does not follow the pre-determined rotation order submitted at the start of a set. If a player serves out of turn, it results in a rotational fault.</p>	<p>After winning a rally, the player in Zone 1 serves instead of the player who rotated into that zone.</p>

Consequences of rotational fouls

- Loss of rally:** The opposing team scores a point and gains the serve.
- Disruption:** The referee stops the game to identify the fault, correct player positions and ensures players return to the correct positions.

How to avoid fouls, teams must;

- Ensure accurate rotation tracking with the line-up sheet.
- Communicate effectively on the court and familiarise themselves with the rotation sequence and court positions.
- Understand positional responsibilities and rules thoroughly.

Responsibilities of Players in Each Zone

In volleyball, each court zone (1 through 6) comes with specific responsibilities based on the player's position and the team's strategy during play. The breakdown of the roles and responsibilities for players in each zone are as follows.

Back row (Zones 1, 6 and 5)

Table 7.7: Back row (Zone 1, 6 and 5)

Zone	Primary responsibility	Key duties
Zone 1 (right-back/ serving position)	Serve the ball (when serving) and defend the right-back area.	Cover tips and deep attacks to the right side of the court. Transition quickly to set up for defensive plays and passing.
Zone 6 (middle-back)	Defend the middle of the backcourt and assist in covering attacks.	Read opponents' attacks and position for digs. Provide accurate passes to the setter after a successful dig. Cover blocks or tips falling behind the front row.
Zone 5 (left-back)	Defend the left-back area and assist in passing during receptions.	Cover tips or attacks aimed at the left side of the court. Contribute to defensive coverage and receive serves effectively.

Front Row (Zones 4, 3 and 2)

Table 7.8: Front row (4, 3 and 2)

Zone	Primary responsibility	Key duties
Zone 4 (left-front)	Act as the left-side hitter (outside hitter) and participate in blocking.	<p>Attack balls set to the left side of the court.</p> <p>Block opponents' right-side attacks with the middle blocker.</p> <p>Cover tips and quick attacks near the left net area.</p>
Zone 3 (middle-front)	Act as the middle blocker and middle attacker.	<p>Block opponents' attacks, especially quick hits and spikes from their middle hitters.</p> <p>Execute quick offensive plays and spikes from the centre of the court.</p> <p>Provide coverage for the setter in case of miscommunication.</p>
Zone 2 (right-front)	Function as the right-side hitter (opposite hitter) and assist in blocking.	<p>Attack balls set to the right side of the court.</p> <p>Block opponents' left side (outside hitter) attacks.</p>

Understanding these responsibilities helps players align their efforts for both offensive and defensive strategies.

The Importance of Zonal Positioning and Rotation in Volleyball

Zonal positioning and rotation provide a framework that balances fairness, strategy and teamwork. They are important for maintaining the structure of the game, enhancing player skills and enabling a seamless transition between offensive and defensive plays. Zonal positioning and rotation in volleyball help to:

Ensure fair play

Equal opportunities: Rotation ensures that all players experience both offensive (front-row) and defensive (back-row) positions, distributing responsibilities fairly among teammates.

Prevents specialisation dominance: By rotating, no single player can dominate play from a particular position throughout the game.

Maintain game structure

Set rules and order: Zonal positioning organises players in a predictable manner, ensuring the game follows proper rules and flow.

Avoids confusion: Clear roles within each zone prevent chaos and overlap during play.

Facilitate effective team strategy

Offensive play: Players in the front row (Zones 4, 3 and 2) focus on attacking and blocking, while back-row players (Zones 5, 6 and 1) focus on defence and serve reception. This division ensures efficient play.

Defensive coverage: Proper zonal positioning helps cover the entire court, reducing gaps that opponents can exploit.

Promote skill development

All-round growth: Players rotate through all positions, developing versatile skills in attacking, blocking, serving, and defending.

1. **Prevent rotational fouls:** Proper adherence to zonal positioning and rotation order minimises the risk of fouls like overlaps or serving out of turn, which can result in point loss.

2. **Enhance team communication**

Coordination: Knowing the responsibilities of each zone fosters better communication and collaboration on the court.

Fluid transitions: Proper rotation allows smooth transitions between offensive and defensive plays.

3. **Boost defensive and offensive efficiency**

Strategic block placement: Front-row positioning ensures blockers are ready to counter the opposing team's attacks.

Backcourt defence: Back-row players are positioned to dig, receive serves, and defend against spikes.

Activity 7.7 Serve and Chase relay, and knowing zones

1. Complete this warm-up with a partner before starting the activity
 - a. One person leads by performing various activities. For example, jogging in place, jumping jacks, hopping, arm circles, high knees running, shoulder rolls and stretches, etc.)
 - b. The other person must mirror these actions as closely as possible.
 - c. After 1-2 minutes, switch roles.

Complete this activity in a group.

2. With your group, line up with a ball behind the baseline of a volleyball court.
3. The first person in your team serves the ball over the net and then sprints under the net to retrieve the ball.
4. They then run back to the team and give the ball to the next person in the line and then join the back of the team.
5. The next person repeats the activity until all members of the team have served the ball two times.

Zones

6. With your group from the activities above, move to each zone on a volleyball court.
7. Your teacher will call out a zone number, walk to this zone.
8. At each zone, discuss the main role of the person standing in this zone.

Scavenger hunt

Complete this activity in small groups of 3-4 of your friends.

9. Start by standing behind the starting line.
10. Your teacher will call out a zone number and an object.
11. One member from your group should move quickly to the zone to collect the object and return it to the starting line.
12. The winning group is the group with the most objects at the end of the activity.

Activity 7.8 Relay race and a mini game

Complete this activity in a group with your classmates.

1. Start by standing behind the starting line.
2. Your teacher will call out a series of zone numbers. (For example, 1, 5, 3).
3. One member from your group should run to the zones in the given order and return to the start line to tag the next person in the line.
4. Repeat until your teacher ends the activity.

Mini game

1. Assign one person as a Game Referee and another as a Zone Tracker.
2. The remaining members of your class form teams of 6 players.
3. Play a game using the following rules:
4. Start the game with a serve from Zone 1. After the serve, all players rotate one position clockwise. It is your team's responsibility to correctly maintain your rotational order throughout the game.

5. Before each rally, the referee will ask a player a question. Be ready to answer as if you answered correctly, and your team will earn a point. The questions you might be asked include:
 - a. What zone are you in?
 - b. Which zone will you move to next?
 - c. Why do you have to move there?
6. Continue to play the game following the rules of volleyball. Points are awarded for winning a rally.
7. If a team rotates incorrectly, the opposing team earns a bonus point.
8. During play, if you hear the Zone Tracker call out a zone, try and hit the ball into this zone. If the ball successfully lands in the zone, your team will earn a bonus point.
9. The first team to reach 15 points wins the game.

EXTENDED READING

Use the links below to watch videos on volleyball

- <https://www.bing.com/videos/riverview/relatedvideo?&q=VOLLEYBALL+TECHNIQUES&&mid=CBEF8A00A3D10AB868F0CBEF8A00A3D10AB868F0&&FORM=VRDGAR>
- <https://www.bing.com/videos/riverview/relatedvideo?&q=VOLLEYBALL+TECHNIQUES&&mid=DB21475499CB20903FB5DB21475499CB20903FB5&&FORM=VRDGAR>
- <https://www.bing.com/videos/riverview/relatedvideo?&q=VOLLEYBALL+TECHNIQUES&&mid=AD901D91A9BD20CBF635AD901D91A9BD20CBF635&&FORM=GVRPTV>

REVIEW QUESTIONS 7

1. List key steps of performing an effective underarm serve.
2. Demonstrate the underarm serve in volleyball.
3. Why is follow-through important in underarm serve?
4. Describe digging reception in volleyball.
5. Demonstrate digging reception in volleyball.

SECTION

8

HEALTH AND WELLNESS - PART THREE



PHYSICAL ACTIVITY AND HEALTH

Health and wellness

INTRODUCTION

First aid is the immediate assistance provided to an injured or ill person before professional medical help arrives. It is an important skill that can save lives, reduce the severity of injuries and promote recovery. First aid is not limited to healthcare professionals, anyone with basic training can provide first aid, making it a universal life saving skill. Understanding the principles of first aid equips individuals to respond effectively in emergencies and creating a safer environment for all. The success of first aid application depends on the timely response and the proper use of essential items. A well prepared first aid kit is key for addressing various injuries and emergencies, ranging from minor cuts and bruises to more serious conditions such as fractures or cardiac arrests.

KEY IDEAS

- **First aid:** First aid is the immediate or initial assistance or care given to an injured person or someone who is suddenly taken ill to stabilise their condition before taking them to the hospital or before professional medical assistance arrives.
- **First aid signs:** The first aid sign is a universally recognised symbol used to indicate the presence of first aid equipment, facilities or personnel.
- **First aid kits:** A first aid kit is a collection of medical supplies and equipment used to provide initial care for injuries or illnesses before taking the victim to hospital or a professional medical team arrives.
- **First aid essentials:** These are variety of supplies that are used to manage common injuries and medical emergencies.
- **First aid core principles:** There are five core principles of first aid; preserve life, prevent further harm, promote recovery, activate emergency medical services, provide comfort and support.
- **Injuries that often require first aid:** Common injuries that require first aid include cuts and wounds, sprains and strains and burns.
- **Cardiopulmonary resuscitation (CPR):** Cardiopulmonary resuscitation (CPR) is an emergency lifesaving procedure used when someone's breathing or heartbeat has stopped. It involves a combination of chest compressions and rescue breaths.

CONCEPT OF FIRST AID

First Aid

The origins of first aid can be traced back to ancient times when people used and relied on natural remedies and improvised methods to treat injuries and illnesses. Early civilisations like the Egyptians, Greeks and Romans recorded practices such as using honey or wine to clean wounds to prevent infection. These practices laid the foundation for what we now call first aid.

The formalisation of first aid began in the Middle Ages with the Knights Hospitaller, a religious and military order that provided care for travellers and soldiers during the Crusades. They established the first organised system of emergency care, focusing on treating injuries sustained in battle.

In the 19th century, modern first aid began to take shape with the creation of organisations dedicated to emergency care. The International Committee of the Red Cross, founded in 1863 by Henry Dunant, was instrumental in promoting first aid globally. In 1877, the British Red Cross and St. John Ambulance were established to train the public in providing basic medical assistance during emergencies.

The term 'first aid' was officially introduced in 1878 by Peter Shepherd, a military surgeon who collaborated with St. John Ambulance to teach soldiers and civilians how to administer immediate care before professional medical help arrived. This concept quickly spread across Europe and North America. The World Wars marked a significant expansion of first aid training, with both soldiers and civilians learning vital techniques to address war-related injuries. In the post-war period, these skills were adapted for everyday emergencies, including workplace and household accidents.

Today, first aid is recognised as an important skill worldwide. Standardised training programmes offered by various organisations have made life-saving knowledge accessible to the general public. Advances in medical science and technology have further refined first aid techniques, ensuring that even basic interventions can effectively save lives and minimise complications. As first aid continues to evolve with new methods and tools, it remains a cornerstone of public health and safety, equipping individuals to respond confidently in emergencies.

The first aid sign

The first aid sign is a universally recognised symbol used to indicate the presence of first aid equipment, facilities or personnel. It often takes the form of:

A green background with a white cross: This is the most widely used design internationally, as specified by the International Organisation for Standardisation (ISO 7010).

The green background represents safety. The white cross symbolises medical Aid or assistance.



Figure 8.1: First aid sign: A white cross on a green background

In some countries or contexts, an alternative design of a **red cross on a white background** is also used. The red cross is a symbol for one of the largest groups in the world, The International Red Cross. The Red Cross stands simply to protect human life, ensure respect between humans and alleviate human suffering and not discriminating between race, nationality, religion, political views and others. The symbol itself was approved as the group's symbol in 1864 and has remained that way since then and is legally protected by the International Red Cross and Red Crescent Movement. The red cross was chosen as the symbol by using Switzerland's flag and reversing the colours. The Swiss have historically been a neutral country, exactly what the Red Cross was looking to do. The Red Cross symbol is now known worldwide and is generally not used for anything else.



Figure 8.2: First aid sign: A red cross on a white background

The meaning of the first aid sign

1. **Accessibility:** It indicates where first aid supplies or services are available. (e.g., first aid kits, medical cabinets).
2. **Emergency preparedness:** It helps people quickly locate help during medical emergencies.
3. **Universal understanding:** The design ensures that individuals from different regions and linguistic backgrounds can recognise it instantly.
4. **Safety and health awareness:** It promotes a culture of safety by highlighting the availability of first aid support. The symbol is commonly seen in workplaces, public spaces, schools and vehicles equipped with first aid resources.

What is First Aid

First aid is the immediate or initial assistance or care given to an injured person or someone who is suddenly taken ill to stabilise their condition before taking them to the hospital or before professional medical assistance arrives. It involves simple yet important interventions aimed at preserving life, preventing the condition from worsening and promoting recovery.

The principles of first aid

Table 8.1: Principles of first aid

Principle	Description
Ensure safety	Look around for potential hazards and confirm the scene or area of the incident is safe for both the rescuer and the injured individual before approaching the injured person. Wear personal protective equipment like gloves and a face mask if available to avoid contact with blood or bodily fluids to reduce infection risk.
Assess the casualty's condition or situation	<p>Check the responsiveness: Gently tap the casualty and ask, 'Are you okay?' If they respond, assess the nature of their injury or illness, and if unresponsive, proceed with further checks—for example, breathing, circulation, etc.</p> <p>Look for injuries: Identify visible wounds, bleeding or deformities.</p>
Establish communication	Ask for their name and use it during the conversation. Encourage them to talk about how they feel or describe what happened. Listen actively without interrupting.
Provide physical comfort	Help them sit or lie in a comfortable position, depending on their injury. Use clothing or a blanket to keep them warm if they feel cold, and support the injured limbs or area to reduce discomfort.

Reassure the casualty	Keep the person calm to prevent shock by speaking in a calm and smooth voice and using positive and reassuring phrases like 'you are going to be fine' or 'help is on the way and will arrive soon', etc.
Stay calm and act quickly	Maintain composure to make rational decisions and administer effective Aid, and always follow the 'DRABC' protocol or the 'ABC' rule.
Minimise movement	Encourage the casualty to stay still to prevent worsening injuries and avoid moving them unless absolutely necessary, such as to prevent further danger.
Reduce stress in the environment	Keep the surroundings of the casualty calm and free of loud noises or unnecessary distractions. Move bystanders away to give the person space and privacy.
Use available resources	Utilise materials at hand, such as first aid kits, clothing or improvise for other items to provide temporary relief or stabilisation.
Respect the casualty's dignity and consent	Ask for consent if the injured person is conscious and capable of responding. Avoid exposure of their nakedness, which may cause unnecessary discomfort or embarrassment.
Explain your actions if the person is conscious	Let them know what you are doing. For example, 'I am applying pressure to stop the bleeding' or 'I am cleaning around the cut or wound to dress it'. This helps them feel informed and in control, to reduce hopelessness.
Stay positive and empathetic	Avoid showing panic, fear or frustration even if the situation is very bad. Be patient and kind, even if the casualty is distressed or irritable.
Seek professional help	Call for emergency medical services (EMS) promptly while providing immediate care.
Do no harm	<p>Do no harm in First aid means that any actions taken by the First aider should not worsen the condition of the injured or sick person. It emphasises the importance of:</p> <p>Avoiding unnecessary interventions: Performing only the first aid procedures that a first aider is trained to do and refraining from attempting advanced medical techniques that could cause harm.</p> <p>Ensuring safety: Using proper techniques and tools to prevent additional injuries to the victim or the first aider.</p> <p>Using clean and sterile materials: Preventing infections by using appropriate items from the first aid kit. This principle underscores the responsibility of first aiders to act carefully and within their level of competence to protect and support the individual in need.</p>

The 'DRABC' protocol

Danger: Check for hazards and be sure the environment is safe.

Response: Assess the casualty's responsiveness.

Airway: Ensure the airway is open and clear.

Breathing: Check if the casualty is breathing.

Circulation: Check for any significant blood loss.

The 'ABC' rule

Airway: Ensure the airway is clear.

Breathing: Check if the person is breathing and provide rescue breaths if needed.

Circulation: Ensure the heart is pumping and blood is in circulation. If the heart is not pumping, restore circulation through chest compressions if necessary.

Emergency preparedness

1. Always have a well-stocked first aid kit at home, school, work and in your vehicle.
2. Keep emergency numbers handy.
3. Familiarise yourself with first aid station locations.

The importance of first aid

Table 8.2: The importance of first aid for the injured or sick person and to the first aider

Importance to the first aider	Importance to the injured or sick person
Empowerment and confidence: Having first aid knowledge helps a first aider feel more confident and empowered in emergency situations. This can reduce anxiety and stress when responding to an injury or medical emergency.	Preserves life: First aid helps to prevent the condition of the injured or sick person from worsening, ensuring their survival until professional medical help arrives. Immediate actions like CPR or stopping bleeding can make a significant difference to the health condition of the person.
Quick response: Knowing first aid enables the first aider to provide timely and effective assistance until professional medical help is available, which is key in saving lives or minimising the severity of an injury or health condition.	Prevents further injury or illness: Proper first aid prevents further harm by stabilising the person and preventing additional complications. For instance, immobilising a broken bone reduces the risk of aggravating the injury.

<p>Improved decision-making: First aid training enhances a person's ability to assess situations quickly and make informed decisions about what actions to take, whether it is administering CPR or stopping bleeding.</p>	<p>Reduces pain and discomfort: Administering first aid helps manage pain and discomfort by addressing the immediate issue. Applying ice to a sprain or giving pain relief assistance makes the injured or sick person more comfortable while awaiting medical attention.</p>
<p>Prevention of further harm: First aid skills allow the first aider to prevent the worsening of an injury by stabilising the condition or removing potential hazards from the situation.</p>	<p>Promotes recovery: First aid initiates the recovery process by providing basic treatments that support healing, such as cleaning wounds or covering them to prevent infection.</p>
<p>Job and social responsibility: In many workplaces or organisations, knowing first aid is a professional requirement. It also allows the first aider to serve as a helpful member of the community by assisting in emergencies outside of work.</p>	<p>Boosts confidence and comfort: Providing first aid gives reassurance to the injured or sick person that they are being cared for, reducing anxiety and stress, which could otherwise worsen their condition.</p>
<p>Skill development: First aid training helps develop critical thinking, problem-solving and communication skills, which are valuable in both emergency and everyday life situations.</p>	<p>Prevents infection: Cleaning wounds and applying proper dressings helps prevent infection, which could lead to more severe health issues if not treated early.</p>
<p>Self-satisfaction: Helping someone in need is personally rewarding. Knowing that one has the potential to save a life or minimise injury gives a sense of fulfilment and purpose.</p>	<p>Helps in mental and emotional support: In addition to physical care, offering calm reassurance and showing empathy have a significant positive impact on the mental and emotional state of the injured or sick person, which is essential for overall recovery.</p>
<p>Health and safety awareness: First aid training also raises awareness of general health and safety practices, which helps the first aiders avoid accidents and promote a safer environment for themselves and others. First aid knowledge benefits the first aiders by equipping them with life-saving skills, confidence and a sense of responsibility.</p>	

Characteristics of a good first aider

First aiders possess several important characteristics that enable them to respond appropriately and efficiently in emergencies. A good First aider must be someone who is:

1. **Calm under pressure:** An effective first aider remains calm, composed and focused, even in stressful situations. This helps reduce panic and ensures they can think clearly and make sound decisions.
2. **Quick in thinking and making decisions:** First aid situations often require rapid decision-making. An effective first aider can assess the situation quickly, prioritise actions and choose the most appropriate response on the spot.
3. **A good observer:** Being able to observe and assess the condition of an injured or ill person is essential. An effective first aider notices changes in the person's appearance, breathing, consciousness level and other signs that can guide their actions and prompt action.
4. **A good communicator:** Effective communication is crucial, both for relaying important information to emergency services and for giving instructions to the injured person or others around them. A first aider must also be able to listen carefully to any details the victim or witnesses provide and convey them clearly and accurately to the professionals who may need them to help with treatment. A first aider must be able to communicate clearly with bystanders to seek help or delegate tasks while waiting for medical assistance or transport to transfer the person to the hospital.
5. **Empathetic and compassionate:** A good first aider shows care and concern for the person in need. They provide comfort and reassurance, helping to reduce the emotional distress of the injured or sick person.
6. **Good at paying attention to detail:** First aid involves following protocols carefully. A detail-oriented first aider ensures that they provide the correct treatment in the correct sequence and do not overlook important signs or symptoms.
7. **Physically fit:** First aid sometimes requires physical tasks, such as moving an injured person, performing CPR or managing heavy bleeding. A physically fit first aider is more capable of handling these tasks effectively. Therefore, a first aider must be physically fit to be able to undertake all tasks effectively.
8. **Knowledgeable:** An effective first aider is well-trained and knowledgeable about first aid techniques and procedures. They are familiar with emergency response protocols, CPR, wound care and other essential skills.
9. **Patient:** Some situations may require extended periods of care, such as monitoring the injured or sick person until a medical professionals arrive. A good first aider will exercise patience and stay focused on providing care for as long as it takes for the needed help to arrive.

10. **Confident:** Confidence in the ability to help is key for a first aider. A confident first aider is more likely to take the necessary steps promptly and effectively, rather than hesitating out of uncertainty and risking the life of the victim.
11. **Good at judging situations accurately:** An effective first aider exercises sound judgment in every situation. They know when to take action and when it is necessary to seek professional medical help.
12. **A good team player and collaborator:** While a first aider may be the first to respond to an emergency, they often work as part of a team. Being able to work well with others, such as fellow responders or emergency medical services, is an important characteristic in saving lives.
13. **Adaptable:** First aid situations can vary greatly, and a good first aider must be able to adjust their approach depending on the circumstances, environment or the condition of the injured or sick person.

These are some of the qualities that enable a first aider to provide effective and appropriate care in emergencies and ultimately achieve very good results for those who are injured or ill.

First Aid Kit

A first aid kit is a collection of medical supplies and equipment used to provide initial care for injuries or illnesses before taking the victim to hospital or a professional medical team arrives. The main purpose of a first aid kit is to provide essential medical supplies and equipment to treat injuries or illnesses until professional medical help is available. The kits include items for treating common injuries as well as supplies for basic medical procedures like cleaning wounds and administering CPR. First aid kits are very important in various environments such as homes, schools, workplaces and vehicles to ensure a quick and effective response to emergencies.



Figure 8.3: First aid items



Figure 8.6: Performing the rescue breath during CPR

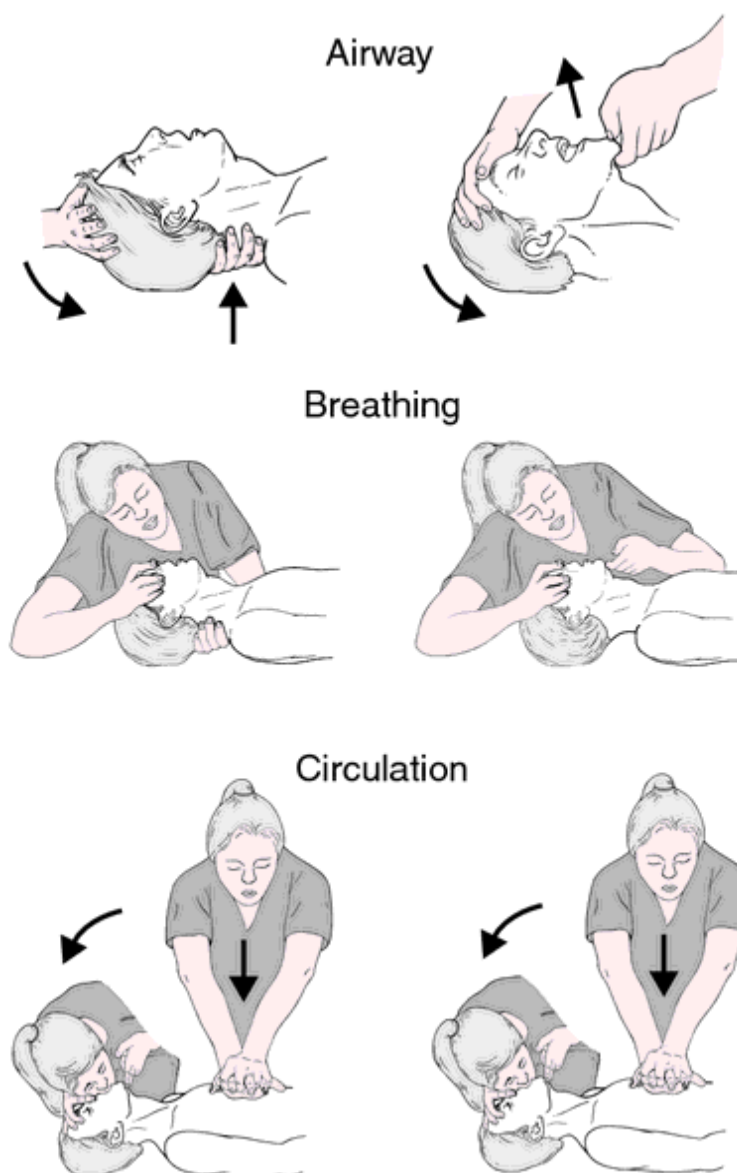


Figure. 8.7: Performing cardiopulmonary resuscitation

First aid essentials (items)

First aid items are a variety of supplies that are used to manage common injuries and medical emergencies.

Table 8.3: First aid items

First aid essential items	Uses
Sterile gauze pads and dressings	For covering cuts and wounds to absorb blood or fluid from injuries.
Adhesive tape (Plasters)	For covering small cuts, blisters and abrasions and for securing gauze, bandages or dressings in place.
Antiseptic wipes or solution	For cleaning wounds to prevent infection.
Cotton wool or cotton balls	For cleaning wounds or applying medication.
Alcohol pads or methylated spirit	For disinfecting tools or skin in preparation for medical procedures.
Scissors	For cutting tape, gauze or clothing in an emergency.
Tweezers	For removing splinters, stingers or foreign objects from cuts and wounds.
Bandage	For wrapping sprains or strains or to apply pressure to control bleeding.
Instant cold packs	For reducing swelling, inflammation and pain from sprains, strains or other injuries.
Heat pack or hot water bottle	For soothing muscle pain or cramps.
CPR face shield or mask	For protecting both the first aider and the injured or sick person during resuscitation.
Burn gel or cream	For soothing and protect minor burns.

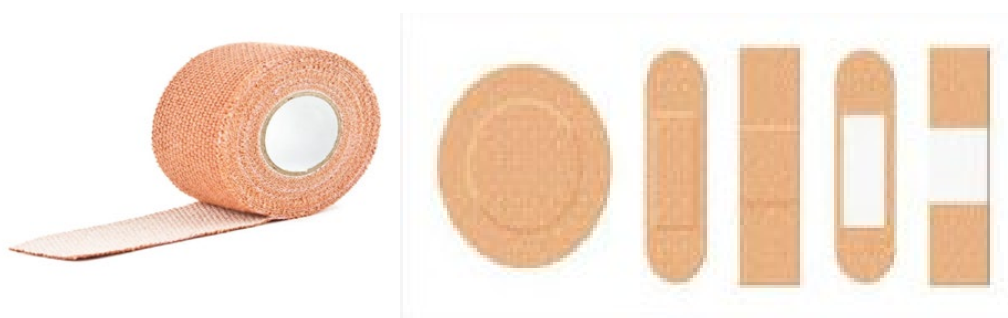


Figure 8.8: Adhesive tape (Plasters)



Figure 8.9: Sterile gauze pads and dressings



Figure 8.10: Bandages



Figure 8.11: Cotton wool



Figure 8.12: Wooden splints



Figure 8.13: Disposable gloves



Figure 8.14: Tweezers

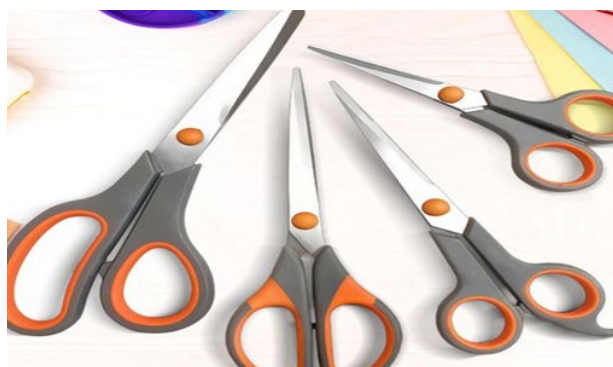


Figure 8.15: Scissors



Figure 8.16: Hot water bottle

Activity 8.1 A throwback on First Aid

1. In groups, share any prior knowledge or experience you have on first aid.
2. With your group, discuss and share your thoughts on the following scenarios.

Scenario 1: You are playing with your friends during break time in the school park when you witness one of them trip and fall while running. Your friend seems to have twisted their ankle and is in pain. What would you do in this situation?

Scenario 2: During a school sports event, one of your classmates collapses on the field. She is conscious but appears to be struggling to breathe. How would you assist her?

3. Research using the internet or other available resources. Conduct your research and make notes of your findings.
 - a. Appoint one member of your group to share your findings with other groups. Be ready to ask questions as other groups make their presentations.
 - b. Make a note of new information from the other group's presentations.

Topics

Group 1: History and definition of first aid.

Group 2: Basic principles of first aid.

Group 3: The importance of first aid for the injured or sick person.

Group 4: Characteristics of a good first aider.

4. Examine items that can be found in a standard first aid kit. (Note: If you do not have the items to examine, use the internet to search for items that can be found

in a first aid kit). Identify items you think are important and explain what each item is used for.

Make a note of these in your notebook. Look at the table as an example.

Important items for a first aid kit	What is the item used for?
<ul style="list-style-type: none"> • • • Etc.	

- In pairs, list items you believe should be in your first aid kit.
- Research and list ten principles that a First Aider must follow when giving first aid care. Explain each of these principles. List this down in a table format (as shown below) in your notebooks.

a.	
b.	
c.	
d.	
e.	
f.	
g.	
h.	
i.	
j.	

- In groups, discuss why it is important to give first aid care.
 - How can first aid contribute to saving lives?
 - Why is it important for everyone to acquire basic first aid skills?
 - Make notes in your notebook and share your thoughts with your classmates.
- Make first aid technique posters that illustrate key first aid techniques for each of the above. (i.e., CPR steps, Heimlich Manoeuvre steps and the steps on how to apply pressure to a wound).
- Practice these techniques on a mannequin or pillow.

In groups, discuss what you have learnt and what you need to find out more about.

Take-Home Activity

Attend a first aid technique workshop in your vicinity.

APPLYING THE KNOWLEDGE OF FIRST AID

Storage and Accessibility of First Aid Kits

Proper storage and accessibility of first aid kits are key to ensuring they are ready for use during emergencies.

Storage guidelines

Table 8.4: Storage guidelines

Keep in a designated location	Store first aid kits in clearly marked and easily identifiable locations, such as in wall cabinets, labelled drawers or specific shelves.
Avoid extreme conditions	The kit should be kept in a cool, dry place to prevent damage to its contents, especially medications or adhesive items.
Protect items from contamination	Waterproof and dustproof containers should be used to keep items sterile and clean.
Regular maintenance	Periodically inspect the kit to check for expired items, depleted supplies or damaged equipment and replenish as needed.

Accessibility requirements

Table 8.5: Accessibility requirements

Easily reachable	First aid kits should be placed where they can be quickly accessed by all, such as in common areas near exits or in frequently used rooms.
Labelling or visible markings	Intentionally label or use recognisable symbols (e.g., a white cross on a green or red background) to indicate the location of first aid kits for easy accessibility.
Multiple locations	For large spaces like schools, workplaces or big organisations, first aid kits should be distributed across various strategic locations to reduce response time.
Portable options	Portable first aid kits should be kept in vehicles, outdoor areas or during field activities to cover situations away from fixed storage points.

Special considerations

1. **Customised kits:** Tailor the contents of first aid kits based on the environment (e.g., workplace hazards, home use and outdoor activities).
2. **Training awareness:** Everyone should know where first aid kits are stored and how to access them during emergencies.
3. **Emergency plans:** First aid kit locations in emergency response plans should have maps or guides, if necessary, for easy location identification and access. By prioritising proper storage and accessibility, First aid kits remain effective tools for mitigating injuries and responding promptly in emergencies.

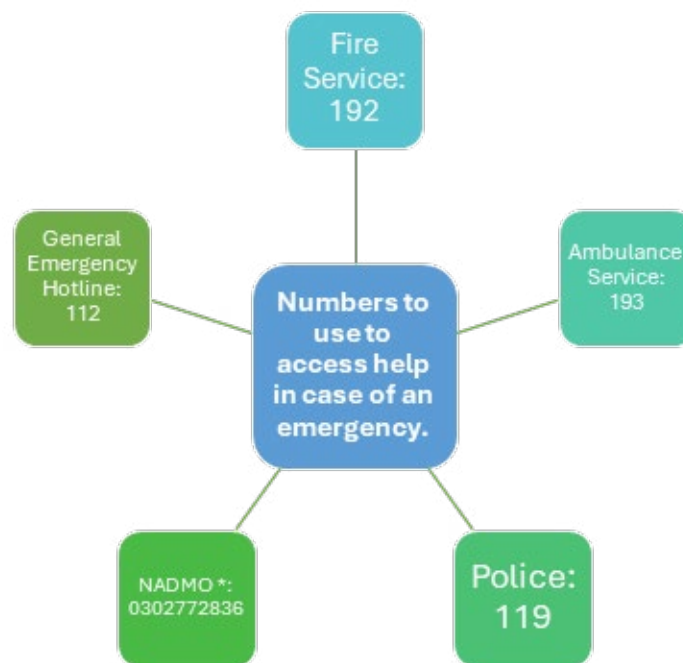


Figure 8.17: Emergency numbers

Note: The general emergency hotline can connect to police, fire or ambulance services in many areas within the country.

Common Injuries and Emergencies with Their First Aid Procedures

Proper first aid procedures are important for effectively managing common injuries and minimising complications. Here are first aid guidelines for some frequently encountered injuries and emergencies.

Note: For all the following, the casualty must not be approached if your own safety is at risk. The area or situation should be assessed and confirmed safe before approaching the casualty.

Cuts and wounds

Cuts and wounds are injuries that involve damage to the skin and underlying tissues such as muscles, tendons or blood vessels, which are often caused by trauma, falls, or sharp objects like knives, broken bottles or glass or metal. Cuts and wounds can range from minor to severe and may be open, exposing tissues beneath the skin or closed, where the skin remains intact but underlying structures are damaged.

Types of cuts and wounds

Open cuts and wounds

1. **Abrasion:** A surface-level or superficial damage caused by scraping, where the skin is rubbed off.
2. **Incision:** A clean and straight cut from a sharp object like a knife or glass.
3. **Laceration:** A deep jagged or irregular tear of the skin and underlying tissues.
4. **Puncture wound:** A small, deep wound caused by pointed objects like a nail or a gunshot.
5. **Avulsion:** A more severe wound caused by a forceful tearing away of the skin or tissue, often exposing muscles or bone.
6. **Amputation:** A complete or partial cutting away of a body part.



Figure 8.18: An abrasion, an open wound

Closed wounds

1. **Bruise and contusion:** Damage to blood vessels under the skin that causes discolouration to the affected part.
2. **Hematoma:** A large collection of blood trapped under the skin or tissues.



Figure 8.19: Bruise and contusion, a closed wound

First aid procedure for open cuts and wounds

Control bleeding

1. **Ensure safety:** Ensure the environment is safe before approaching the injured person, and wear gloves to avoid contact with blood to reduce infection risk
2. **Reassure the casualty:** Keep the person calm and in a comfortable position to prevent shock.

Clean the wound

1. For minor cuts or wounds, rinse them under clean running water to remove dirt or debris.
2. If dirt or debris still remains, use tweezers sterilised with alcohol or methylated spirit to remove it.
3. Apply firm but gentle pressure using a clean cloth or sterile gauze, or bandage to stop bleeding.
4. Rinse or elevate the wound above the heart level if the injury is on the limb.
5. Cover the cut or wound with a sterile dressing or adhesive bandage.
6. If the first dressing becomes soaked, add more on top. Do not remove the original one to avoid disrupting clotting.

Call for medical assistance

If the wound requires further treatment, immediately call for medical help or take the victim to the hospital.

First aid procedure for closed wounds

Using the RICE Method: Rest, Ice, Compression and Elevation.

Rest

Rest the affected area and avoid putting strain or weight on the part. Rest support other first aid measures like icing and compression by maintaining stability and reducing stress on the area.



Figure 8.20: Resting after sustaining injury

Apply ice

Apply an ice pack wrapped in a cloth on the affected part for 15 to 20 minutes to reduce swelling and inflammation. Ice causes blood vessels to contract and narrow, which reduces blood flow to the affected area. This limits the amount of fluid and inflammation at the injury site. Cold numbs the nerve endings in the injury site, reducing pain signals sent to the brain. Avoid the use of ice on open wounds unless advised by a medical professional.



Figure 8.21: Applying ice to an affected body part

Apply compression

Apply direct pressure to the affected area or damaged blood vessels (not too tight) to help reduce or stop bleeding by aiding the natural blood clotting process. This can be applied to other injuries, too. However, avoid applying compression to fractures properly before immobilising the bone. Also, avoid compressing open wounds unless it is to control bleeding with a sterile dressing.



Figure 8.22: Compressing after injury

Elevation

Raise the injured part or area to reduce blood flow to the area to prevent excessive swelling and minimise pain and discomfort. Elevate only if it does not cause further pain or injury. Use a pillow or other suitable item to raise the affected body part.

ELEVATION



Figure 8.23: Elevation of an injured leg

Burns and scalds

First aid procedure

1. **Ensure safety** by removing the person from the source of burn (e.g., fire, hot oil, liquid, vapour or steam). Turn off the power supply if it is an electrical burn before touching the person.
2. **Assess the situation** to know the type of burn that has occurred.
3. **Avoid applying ice**
4. **Protect the burn**
 - a. Carefully remove jewellery, clothing or belt near the burn before swelling starts.
 - b. If clothing is stuck to the burn, leave it in place to avoid further injury.
 - c. Cover the location of the burn with a sterile non-stick dressing, clean cloth or cling film.
 - d. Avoid fluffy materials like cotton wool, which may stick to the wound.
5. **Reassure the person** by keeping them as calm and comfortable as possible.
6. **Seek immediate medical help if the burn is;**
 - a. Larger than the person's palm.
 - b. Severe and affects the face, hands, feet, groin or major joints.
 - c. A third-degree burn.
 - d. Caused by chemicals or electricity.
7. **What not to do**
 - a. Do not break blisters: This will increase the risk of infection.
 - b. Do not apply ointments or butter: These traps heat and may worsen the burn.
 - c. Do not use cream without medical advice, especially on serious burns.

Types of burns

1. **First-degree burns:** Red, painful skin burns that affect the outer layer of the skin.



Figure 8.24: First-degree burns

2. **Second degree burns:** Blistering, swelling and intense pain that affects deeper layers of the skin.



Figure 8.25: Second-degree burn

3. **Third-degree burns:** A severe white or burnt skin that comes with numbness and affects all layers of the skin.





Figure 8.26: Third-degree burns

Fractures (Broken Bones)

First aid procedure

1. **Ensure safety.** Ensure the area where the incident occurred is safe before approaching the injured person.
2. **Assess the situation** for a fracture or fractures.

Signs of a fracture

- a. Pain and swelling of the affected part.
 - b. Deformity or an unusual angle of a limb or part.
 - c. Difficulty or inability to move the affected area.
 - d. Bruising or open wounds (in case of open fractures).
3. **Call for help**
Call emergency services immediately if you have any of the points discussed below.
 - a. The fracture is open (the bone(s) is/are protruding through the skin).
 - b. The person is in severe pain or shows signs of shock (e.g., pale, cold and sweaty skin, breathing shallow and irregular, the heart beats faster but with reduced force, the person is confused, restless or anxious, drowsy or unconscious).
 - c. The fracture involves the head, neck, spine or pelvis.

4. Immobilise the injury

- a. Avoid moving the person unless necessary for safety.
- b. For closed fractures immobilise the injured area with a splint or by keeping it in its current position. A splint can be made from rigid materials such as wood, cardboard or rolled up clothing.
- c. Secure the splint above and below the fracture using bandages, cloth or any other material that hold the splint in place.
- d. Do not attempt to realign or push a bone back into place.
- e. Place a cold pack wrapped in a cloth over the area to reduce swelling if the fracture is closed.

5. For open fractures, stop any bleeding

- a. Apply gentle pressure around the wound (not directly on the exposed bone) with a sterile bandage or clean cloth.
- b. Cover the wound with a sterile dressing without pressing on the bone.

6. Prevent shock

- a. Help the person to lie down.
- b. Cover them with a blanket or cloth to keep them warm.
- c. Reassure them of help and recovery to keep them calm.

7. Monitor while waiting for help or a vehicle to transport them to the hospital

- a. Check for circulation (look for signs of numbness, tingling or discolouration below the fracture).
- b. Do not allow the person to eat or drink anything, especially if surgery might be needed.
- c. Seek immediate medical attention or transport the victim to a nearby hospital.

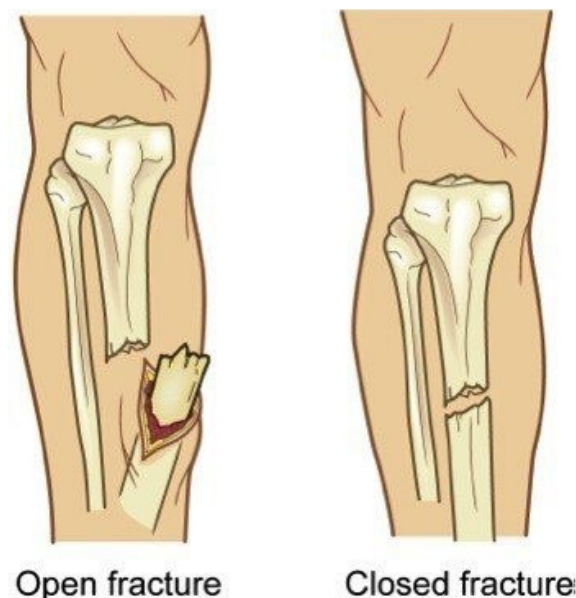


Figure 8.27: Open and closed fractures



Figure 8.28: Immobilising a fracture using locally made splints

Choking

First aid procedure

For Adults and Children (over 1 year)

1. Assess the situation

Ask the person, “Are you choking?”. If the person can speak, cough or breathe partially, encourage the person to cough hard or forcefully to clear the blockage.

2. Call for help

Call for emergency medical help or take the person to the hospital immediately if the person cannot breathe, cough or speak.

3. Perform the Heimlich manoeuvre (abdominal thrusts)

- a. Stand behind the person and wrap my arms around their mid-section.
- b. Place a fist just above the navel and below the ribcage with the thumb inward.
- c. Perform the thrusts by grasping your fist with the other hand and give a quick inward and upward thrust. Repeat until the object is expelled or the person starts breathing again.
- d. If the person becomes unconscious, gently lower them to the ground and perform CPR, starting with chest compressions. Regularly check the mouth for obstruction between compressions.



Figure 8.29: How to stand, hold and position the hand when performing the Heimlich manoeuvre or abdominal thrusts

For infants (under 1 year)

1. **Assess the situation**

If the baby is coughing or crying, encourage them to keep coughing. Do not interfere. If they are silent or turning blue, take action immediately.

2. **Call for help**

Shout for help and call emergency services or rush them to a nearby hospital emergency unit.

3. **Perform back blows or slaps to dislodge the object**

Hold the baby face down along the forearm, supporting their head and jaw with the hand. Give five (5) firm back blows or slaps between the shoulder blades using the heel of the hand.

4. **Perform chest thrusts**

Flip the baby and turn them face up while supporting their head with one hand. Use the two index fingers to press on the breastbone (just below the nipple line) 5 times.

5. **Repeat the back blows or slaps and the chest thrusts**

Alternate between 5 back blows or slaps and 5 chest thrusts until the object is removed or the baby starts breathing.

6. **If the baby becomes unconscious, perform CPR, starting with chest compressions and checking the mouth for obstruction between compressions.**

7. **Call for medical help.**

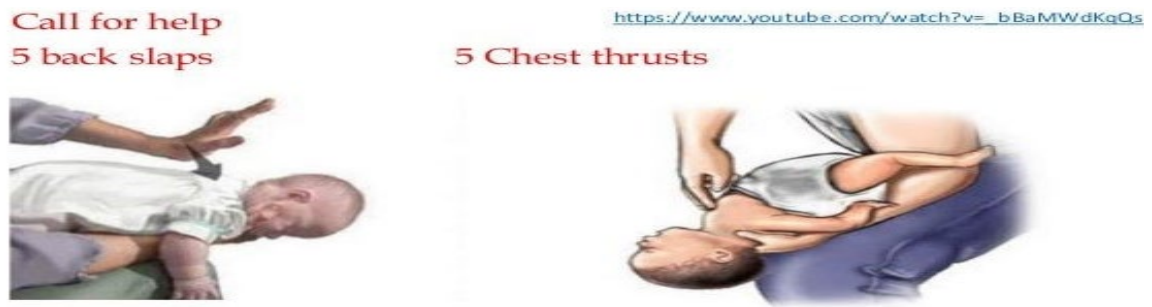


Figure 8.30: Helping choking infant

Nosebleeds

First aid procedure

1. Keep the person calm and assure them of a speedy recovery to prevent further increase in blood pressure which can worsen the bleeding.
2. Help the person to sit upright and lean forward slightly without tilting the head back to prevent blood from running down the throat which could cause choking or stomach irritation.
3. Pinch the nostrils with the thumb and index finger. Pinch the soft part of the nose (just below the bony bridge). Maintain firm pressure or hold the nostrils together for 5 to 10 minutes without releasing to allow the blood to clot.
4. Ask the person to breathe through the mouth while applying the pressure.
5. Apply a cold pack to the bridge of the nose to constrict blood vessels and slow down the bleeding.
6. Monitor and repeat the procedure. After 15 minutes, check if bleeding has stopped. If not, reapply pressure for another 10 minutes.
7. Seek medical assistance if bleeding lasts longer than 20 minutes or is profuse and if the person is feeling dizzy, weak or has difficulty breathing.
8. Aftercare: Advise the person to avoid blowing their nose or engaging in strenuous activities for several hours to prevent rebleeding.

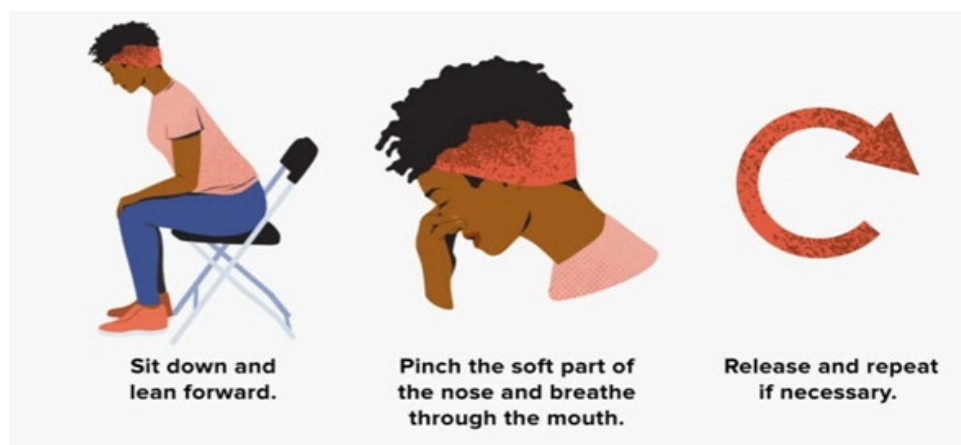


Figure 8.31: How to stop nosebleeds

Poisoning

First aid procedure

The first aid procedure for poisoning depends on the type of poison and the method of exposure (for example, ingestion, inhalation, skin contact or injection).

General steps or procedure

1. Assess the situation

- a. Identify the poison and the time of exposure, if possible.
- b. Remove self and victim from any source of danger (e.g., gas, fumes or spills of poison).
- c. Move the person to fresh air if poisoning occurred from fumes.
- d. Avoid direct contact with the poison.

2. Check the victim's condition

- a. Look for symptoms of nausea, vomiting, difficulty breathing, unconsciousness, seizures or burns around the mouth or body.
- b. If they are unresponsive, check for breathing and pulse.

3. Call for emergency help

- a. Contact emergency services or a poison control centre immediately or rush the person to a nearby hospital.
- b. Provide details of the poison at the hospital if known (e.g., substance, amount, and time of exposure).

Specific First aid procedure based on exposure

1. Ingested poison (e.g., cleaning agents, medications)

- a. Do not induce vomiting unless directed by a healthcare provider.
- b. If the victim is conscious, rinse their mouth with water and provide small sips of water or milk if the poison is not corrosive.
- c. Call for help.
- d. Collect the container or sample of the substance for identification.

2. Inhaled poison (e.g., carbon monoxide or fumes)

- a. Move the victim to fresh air immediately.
- b. Loosen tight clothing to Aid breathing.
- c. Monitor breathing and be ready to perform CPR if necessary.
- d. Call for help.

3. **Poison on skin (e.g., pesticides or chemicals)**

- a. Remove contaminated clothing.
- b. Rinse the affected skin with running water for 15 to 20 minutes.
- c. Avoid scrubbing the area.

4. **Poison in the eyes**

- a. Flush the eyes with clean lukewarm water for at least 15 to 20 minutes.
- b. Avoid letting the water flow into the unaffected eyes.
- c. Call for help.

5. **While waiting for help**

- a. Stay calm and keep the victim comfortable by giving them assurance.
- b. Turn them onto their side if they are vomiting to prevent choking.
- c. If unconscious but breathing, place them in the recovery position (on their side).

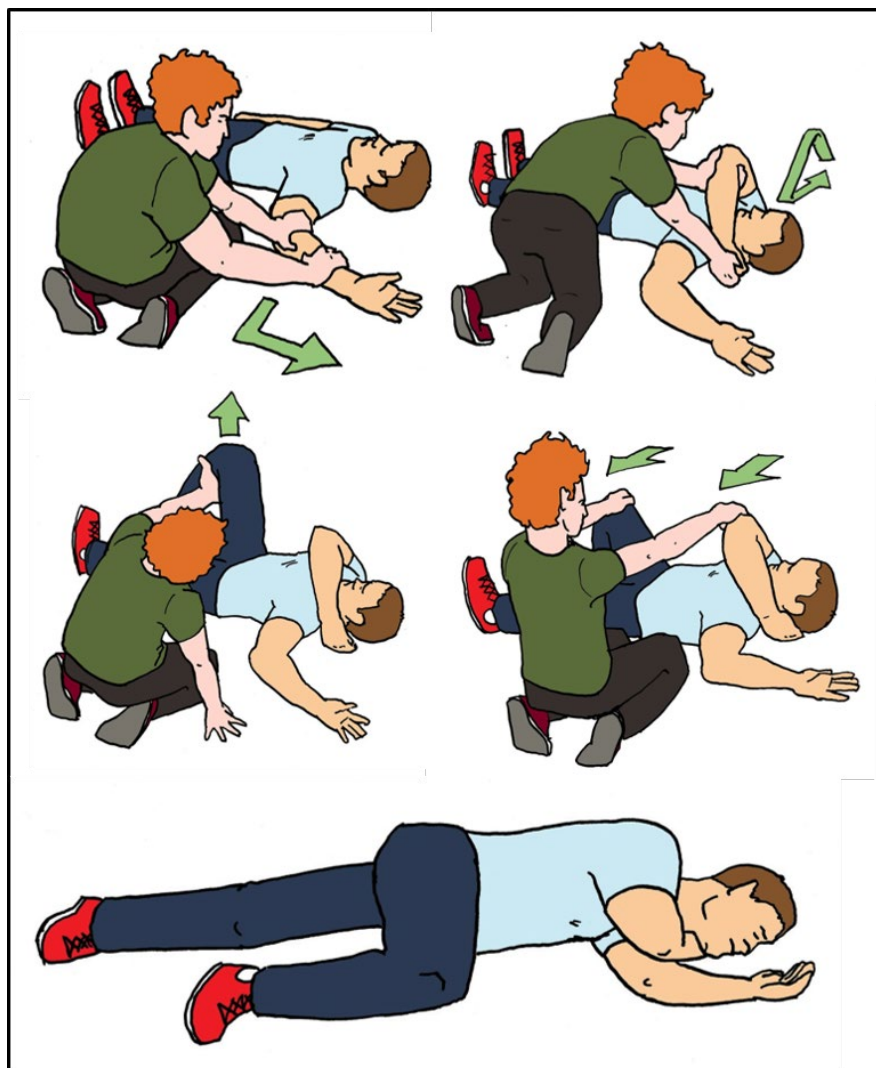


Figure 8.32: Recovery position

Fainting

First aid procedure

1. Gently lower the person to the ground to prevent injury if falling.
2. Lay the person flat on their back.
3. Elevate the legs about 12 inches (30 cm) above heart level to improve blood flow to the brain.
4. Loosen any tight clothing, such as belts or collars, and ensure fresh air circulation.
5. If unresponsive or not breathing for more than a minute, begin CPR and call for emergency medical assistance.
6. If they regain consciousness within a minute, reassure them and help them stay lying down until they feel better.
7. Open windows or use a fan to improve air circulation.
8. If dehydration is suspected, offer small sips of water once they are fully alert.
9. Call for medical assistance or rush the person to the hospital.

What not to do

Do not:

1. Slap or shake the person.
2. Burn pepper around them.
3. Play loud music or hurt anything intending to wake them up or revive them.
4. Pour hot ointment or anything peppery into their nostrils.
5. Give them food or drinks until they are fully conscious.
6. Attempt to raise them to a sitting or standing position too quickly.



Figure 8.33: Lie flat on the back and legs elevated to improve blood flow to the brain during fainting

A Dislocation

Dislocation occurs when a bone is forced out of its normal position in a joint. Commonly affected joints include shoulders, fingers, elbows, knees and hips.

First aid procedure

Assess the situation

1. **Observe the signs:** Dislocations are often painful and accompanied by swelling, bruising and sometimes an abnormal-looking joint.
2. **Confirm immobility:** The joint may look visibly deformed or out of place and be difficult or impossible to move.
3. **Do not attempt to realign the joint:** Aligning the bone may cause further damage to surrounding tissues, nerves or blood vessels.

Immobilise the joint

1. **Keep the joint in the position found:** Do not try to move or straighten the joint.
2. **Support the area:** Use a sling for a shoulder or elbow dislocation. Place rolled-up towels or cushions around the joint to keep it stable. For lower body dislocations (e.g., knee or hip), encourage the person to remain still.

Apply a cold compress

Purpose: Reduces swelling and pain.

How to apply;

1. Wrap an ice pack or a bag of frozen vegetables in a cloth (do not apply ice directly to the skin).
2. Hold the compress gently over the injured area for 15–20 minutes every hour.

Manage pain and shock

1. **Monitor for shock:** Symptoms of shock include cold, clammy skin, rapid breathing, or fainting. If these occur, lay the person down with their feet elevated (if it does not worsen their pain).
2. Keep them warm and calm.

Seek medical help immediately

Call emergency services or arrange transport to the hospital.

Avoid these actions

1. **Do not force the joint back into place:** This can damage blood vessels, nerves or ligaments.

2. **Do not give food or drink:** If surgery or sedation is required, the stomach should be empty.
3. **Do not move the person unnecessarily:** This can worsen the injury.

Special Considerations

Shoulder dislocation

1. **Arm position:** Keep the arm close to the body using a sling or by resting it on a pillow.
2. **Support:** A triangular bandage can stabilise the arm.

Finger dislocation

Splinting: Tape the dislocated finger to the adjacent finger for temporary support. Avoid bending or pulling the finger.

Hip dislocation

Minimal movement: Do not allow the person to sit or walk. Keep them lying flat on their back with cushioning under the affected leg.

Activity 8.2 Why is first aid necessary?

1. What comes to mind when you see the words FIRST AID? Share your thoughts in an all-class discussion.

Work with classmates, research the following:

- a. Storage guidelines for items in your first aid kit.
 - b. Accessibility guidelines for first aid kits.
 - c. Discuss your findings with your classmates.
2. Research to investigate one of the categories below. Your teacher will let you know which category to research.
 - a. Sports injuries (e.g., sprains and strains).
 - b. Workplace injuries (e.g., fractures and dislocations).
 - c. Home-related injuries (e.g., burns and cuts).
 - d. School or playground injuries (e.g., nosebleeds and choking).

Answer the following questions for your assigned category

- i. What are the common types of injuries in this category?
- ii. What activities or situations lead to these injuries?
- iii. What are the treatments or first-aid measures for these injuries?
- iv. What is the nature of the injury (e.g., what causes cuts or sprains)?

- v. What is the step-by-step first-aid treatment to apply?
 - vi. What materials or equipment are needed for treating them? (e.g., bandages, ice packs).
3. Present your findings to your class. Be ready to ask questions as the other groups are presenting their research to you.

Role play

4. In groups, act out scenarios where you 'treat' a classmate using safe and simulated techniques.

Note: *This is a pretend emergency, and you must not do anything that may cause injury to you or your classmates.*

Example scenarios

- a. Cleaning and bandaging a minor cut.
 - b. Demonstrate the R.I.C.E. (Rest, Ice, Compression, Evaluation) method for a sprain.
 - c. Demonstrate how to stop a nosebleed using the pinch-and-tilt method.
 - d. Demonstrate how to protect and immobilise a fracture before seeking help.
5. Assign roles to members of your group. You will need: Overall effectiveness of the response.
 6. Present your experience to your classmates.
 - a. What was your injury?
 - b. What first aid items did you use and why?
 - c. What went well?
 - d. What was challenging?

How confident am I in my ability to respond in emergencies after the lessons in first aid? What will I do to build my confidence and improve my knowledge of first aid?

REVIEW QUESTIONS 8

1. What is the primary purpose of first aid?
2. Identify seven items commonly found in a first aid kit.
3. Explain the five core principles of first aid.
4. Describe three common injuries that often require first aid treatment.
5. What is the ratio of compressions to breaths in CPR for adults?

SECTION

9

TEAM SPORTS - PART FOUR



PHYSICAL ACTIVITY AND HEALTH

Sports Participation

INTRODUCTION

The History of Hockey in the World

Hockey is one of the oldest known sports, with its origins tracing back to ancient civilisations. Early forms of the game date as far back as 2000 BCE in Egypt, where carvings show people playing with sticks and a ball. Similar stick and ball games were also played in ancient Greece, Persia, and China. The modern form of field hockey, or simply hockey as it is known today, began to take shape in England during the 19th century. British soldiers and settlers introduced the game to various parts of the world. The first formalised hockey club, the Blackheath Hockey Club, was established in London in 1861. Rules were standardised in 1875, leading to the game's widespread popularity. In 1908, hockey made its debut as an Olympic sport for men at the London Games, with women's hockey joining much later in 1980. The Fédération Internationale de Hockey (FIH), the sport's global governing body, was established in 1924, paving the way for the organisation of international competitions, including the Hockey World Cup and the Champions Trophy. Today, countries like India, Pakistan, the Netherlands, Australia, Germany, and Argentina dominate the global hockey scene.

History of Hockey in Africa

Hockey was introduced to Africa during the colonial period as European settlers and colonial administrators brought the sport to the continent. Countries like South Africa, Kenya, and Egypt were among the first to adopt the game, mainly in schools and colonial sports clubs. South Africa played a significant role in developing hockey in Africa and has historically been one of the continent's strongest hockey nations. Kenya gained prominence in the mid-20th century, participating in international tournaments such as the Olympics during the 1950s -70s, where they showcased their talent against global hockey powerhouses. Egypt has also maintained a strong hockey presence in North Africa, particularly through local leagues and national competitions. The African Hockey Federation (AfHF) was established in 1970 to oversee the growth and governance of hockey on the continent. African nations now compete in continental tournaments such as the African Hockey Cup of Nations, which serves as a qualifying event for global competitions. Despite limited resources and infrastructure in many parts of Africa, the sport continues to grow, with increasing efforts to develop grassroots hockey programmes and improve participation among youth and women.

History of Hockey in Ghana

Hockey in Ghana was introduced during the colonial era by the British, who used the sport to engage with communities and schools. The game quickly gained popularity, particularly in major cities such as Accra and Cape Coast. In 1961, the Ghana Hockey Association (GHA) was established to promote and manage the sport in the country. Hockey became a formalised sport within Ghana's educational system and clubs, leading to its steady growth.

Key milestones in Ghana's hockey history include:

1968: Ghana participated in the Olympics for the first time, marking a major achievement for the nation's hockey profile.

2009: Ghana hosted the African Hockey Cup of Nations in Accra, which helped showcase the country's commitment to developing the sport and improving facilities, including the construction of the National Hockey Stadium.

Over the years, Ghanaian hockey teams, including men's, women's, and youth sides, have participated in regional and continental competitions. Hockey remains one of Ghana's notable sports, particularly in schools and among security services like the police and armed forces, which maintain strong hockey teams. Efforts to promote hockey among women and youth continue, with initiatives to improve coaching, infrastructure, and player development.

Hockey has a rich history globally, rooted in ancient traditions and modernised in England. Africa embraced the sport during colonial times, with nations like South Africa, Kenya, and Egypt leading its development. In Ghana, the sport has grown progressively since its introduction, achieving regional success and fostering a strong hockey culture across schools and communities.

KEY IDEAS

1. Core skills in hockey are the fundamental techniques that enable players to perform successfully and excel in the game. These skills form the building blocks for both individual performance and team success. Mastering these abilities ensures better control, precision, and decision-making on the field.
2. In field hockey, the grip refers to how a player holds the hockey stick to control the ball and pass or hit the ball effectively. Proper grip is fundamental to mastering key techniques, as it provides stability, control, and flexibility during play.
3. Dribbling in hockey is the skill of moving the ball along the field or ground using small and controlled taps or pushes with the stick to advance the ball across the field. It is a skill that enables players to dodge and avoid opponents to maintain possession and to create scoring opportunities.
4. Hitting in hockey is a skill used to strike the ball powerfully over a long distance or with force toward a specific target using the flat side of the stick. It is primarily used for long-distance passes, clearing the ball from the defensive zone, shooting at goal and executing penalty corners.

RULES, GRIP AND PUSHING IN HOCKEY

The Basic Rules of Hockey

Number of Players in a team	Each team consists of 11 players on the field, including a goalkeeper. Substitutions are allowed during the game.
Match duration	A match is played in four quarters, each lasting 15 minutes. There are breaks between quarters, including a 10-minute halftime interval.
Starting the game	The game begins with a centre pass from the halfway line. The ball must be passed to a teammate, and the opposing team must stay at least 5m away.
Restarts	After a goal, play restarts with another centre pass. For sideline balls, free hits, or penalty corners, the ball must be stationary before being played.
Scoring goals	A goal is scored when the ball is played into the opposing team's goal, crossing the goal line completely. The ball must be struck or touched by an attacker within the shooting circle (or D).
Ball in play	The ball remains in play as long as it stays within the field boundaries. If it goes out, the play restarts with one of the following: <ul style="list-style-type: none"> • Sideline hit: Awarded to the opposing team when the ball crosses the sidelines. • Long corner: Awarded to the attacking team if the ball is unintentionally played over the backline by a defender. • 16-yard hit: Awarded to the defending team when the attacking team causes the ball to go out over the backline.

Fouls and violations

Players must not;

1. **Use the back of the stick:** Only the flat side of the stick can be used to hit the ball.
2. **Raise the stick dangerously:** High swings or dangerous stick usage are prohibited.
3. **Obstruct play:** Blocking opponents from reaching the ball with the body, stick, or any other means is not allowed.
4. Play the ball above the shoulder, except when attempting to stop or deflect a mid-air ball.
5. **Shield the ball:** Players cannot use their bodies to shield the ball from opponents.
6. **Commit physical contact:** Pushing, tripping, or intentionally interfering with an opponent is a foul.

Penalty situations

Free hit	Awarded for minor fouls outside the shooting circle. The ball must travel 5m before entering the circle.
Penalty corner	<p>Awarded for defensive fouls within the shooting circle or deliberate offences in the defensive 23m area.</p> <p>The attacking team places the ball on the backline, 10m from the goal.</p> <p>Defenders are positioned behind the goal line, with only the goalkeeper guarding the goal.</p>
Penalty stroke	Awarded for serious fouls preventing a certain goal. The attacker takes a direct shot at the goal from the penalty spot with only the goalkeeper defending.

Offside rule

Hockey no longer has an offside rule. Players can position themselves anywhere on the field, encouraging attacking play.

Substitution

Substitutions are rolling and can occur at any time except during a penalty corner. Players entering must do so from the substitution area.

Umpiring and discipline

Two umpires control the game, ensuring that the rules are followed. If a violation is committed, penalties include:

1. **Green card:** A warning, resulting in a 2-minute suspension.
2. **Yellow card:** Temporary suspension for 5–10 minutes.
3. **Red card:** Permanent suspension for severe violations, leaving the team with one less player.

The Hockey Stick

Used to control, pass, and hit the ball, the hockey stick is the most essential piece of equipment in field hockey. It is normally made from wood, fibreglass, carbon fibre, or a combination of these materials to provide durable, strong, and flexible sticks.



Figure 9.1: Hockey stick

Structure and features of the stick

The stick has two main parts, namely the handle and head

1. **Handle:** The handle is the long and straight upper part of the stick.
2. **Head:** The head is the curved lower end that is used to play the ball with a flat side (used for hitting and controlling the ball) and a rounded back. The flat side of the stick is the only part used by both field players and goalkeepers to play the ball.

Shape and size: Hockey sticks come in various lengths and weights to suit players' height, position and playing style. The standard length of a hockey stick ranges from 28 to 38.5 inches.

Toe: The toe is the part of the head that makes contact with the ball. The toes are shaped or designed differently for different playing styles.

Bow: The bow is the slight curve along the stick's length that helps with ball control, lifts and drag flicks.

Heel: The heel of the hockey stick is the rounded section where the shaft (handle) meets the head. It is located at the back of the flat side of the head, which acts as a pivot point when the stick moves between different angles for hitting, dribbling or tackling.

Scoop: The scoop of the hockey stick is the slightly concave curve or the indentation along the playing surface on the head or shaft of the stick. This designed part is to improve ball control, precision and the execution of specific skills like lifting or flicking the ball.

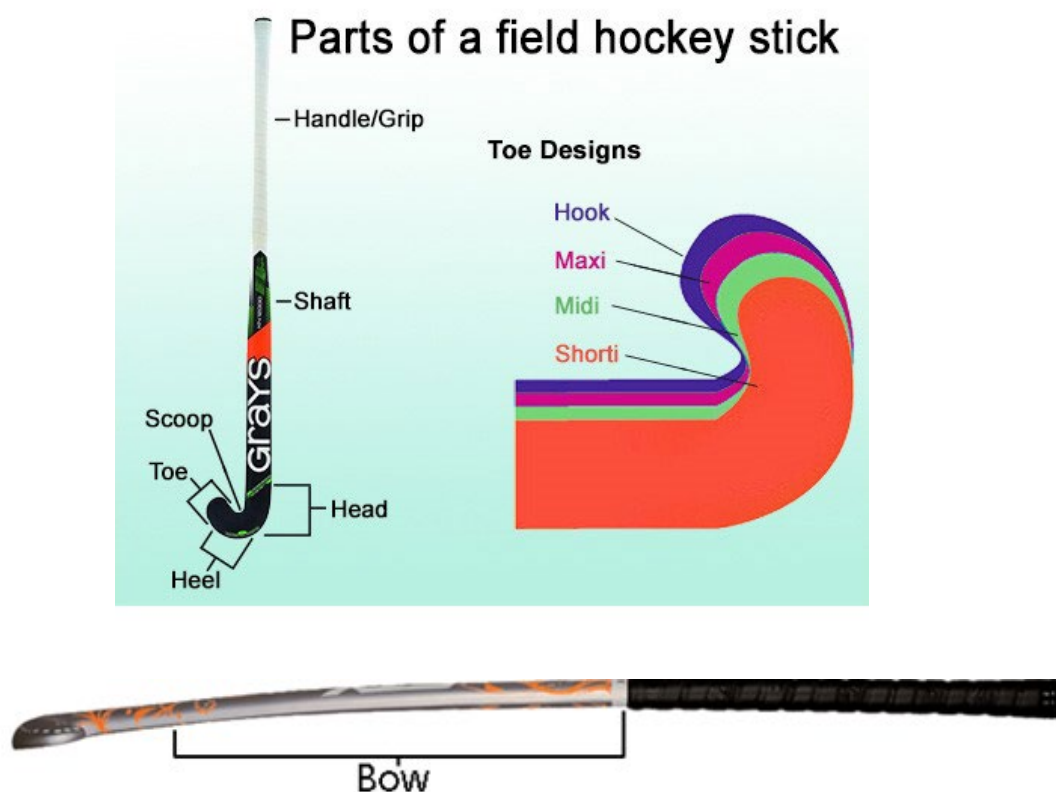


Figure 9.2: Parts of the hockey stick

The Hockey Ball

The hockey ball is a small, hard and durable sphere used in field hockey. It is designed to roll smoothly on various playing surfaces, including grass, turf and artificial pitches.

Material

The ball is normally made of hard plastic with a hollow or solid core, which ensures durable and consistent performance.

Size and weight

The circumference of the ball is around 224-235mm.

The weight of the ball ranges between 156-163 grams.

Surface

The surface of the ball has a dimpled texture to reduce friction and improve control on wet or artificial surfaces.

Colour

Traditionally the colour of the ball is white, but other colours like orange or yellow are also used for better visibility in different playing conditions.

The hockey ball's design ensures speed, accuracy and consistency which makes it suitable for high-paced and skilful gameplay.



Figure 9.3: Different colours of hockey balls

Core Skills in Hockey

Core skills in hockey are the fundamental techniques that enable players to perform successfully and excel in the game. These skills form the building blocks for both individual performance and team success. From grip and hand positioning to more advanced techniques like dribbling, passing, hitting and tackling. Mastering these abilities ensures better control, precision, and decision-making on the field. Developing

core skills not only enhances technical proficiency but also improves players' confidence, tactical awareness and overall gameplay. Whether playing in attack, midfield, defence or as a goalkeeper, understanding and applying these essential skills is key to excelling in hockey.

The grip and hand position

In field hockey, the grip refers to how a player holds the hockey stick to control the ball, pass or hit the ball effectively. Proper grip is fundamental to mastering key techniques, as it provides stability, control and flexibility during play. There are different types of grips in field hockey, and each serves a specific purpose depending on the skill or situation.

Types of grips in hockey

Grip	Description	Purpose	Hand position
Basic grip	The basic grip, which is also known as the standard or the double 'V' grip, is the most common and the fundamental way to hold the stick used for dribbling, pushing, passing, hitting, slapping or shooting.	The purpose of this grip or hold is to provide stability, accuracy, flexible movement, better ball control, quick transitions between skills and greater power when executing hits or shots	The hand position for this basic grip is holding the stick with the left hand placed at the top of the stick firmly with the knuckles pointing forward (creating a 'V-shape' between the thumb and the index finger or forefinger, which aligns with the flat face of the stick). This hand mainly controls the direction of the stick. While the right hand is placed lower down on the stick, slightly looser (roughly halfway), the stick.
Reverse grip	This is a technique where the stick is held in a non-standard way, with the hands positioned in reverse compared to the usual grip or hold.	This grip is used when players need to control, pass, or stop a ball or puck a ball while using the back of the stick.	The left hand remains at the top of the stick and grips it firmly. The wrist rotates so the flat side of the stick faces outwards, enabling the player to use the reverse side with the knuckles of the left hand facing upwards and the thumb and forefinger creating a secure 'V-shape' along the handle. The right hand is placed lower on the stick, just above the middle or closer to the head, depending on the required precision. The right hand lightly guides the stick while allowing enough flexibility to manoeuvre the ball. The palm of the right hand faces downwards with fingers wrapped loosely around the handle to facilitate control.

Watch the following video on the types of grips used in hockey:

[Hockey Drills Grips Coaching Skills Hockey Coach | Sportplan](#)



Figure 9.4: Basic grip, standard grip or the double ‘V’ grip

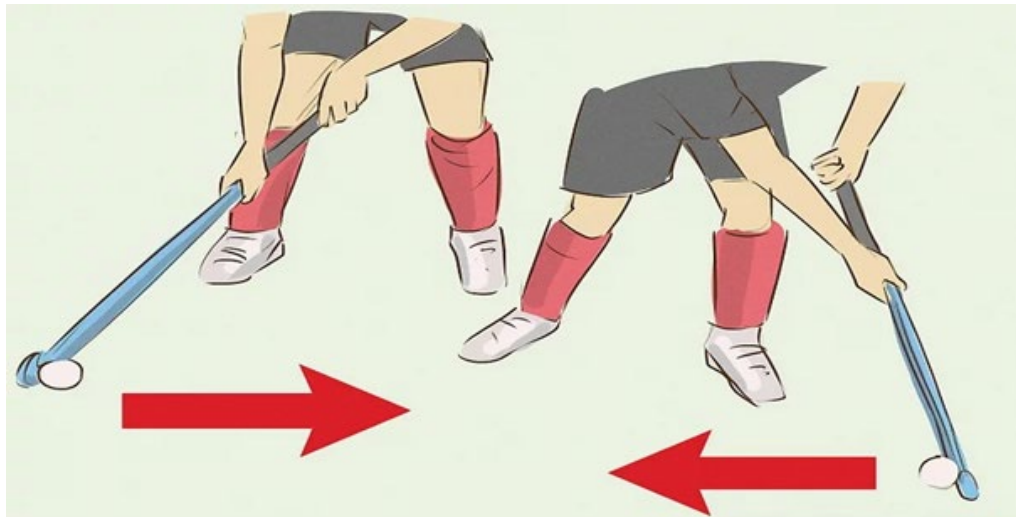


Figure 9.5: The reverse grip

Basic stance

The basic stance in hockey is the ready position that allows players to maintain balance, react quickly and execute skills effectively. A proper stance ensures stability, control and the ability to transition smoothly during play.

Key components of the basic stance in hockey

1. Body position

- a. **Feet:** Feet are positioned shoulder-width apart to create a stable base of support. This stance helps players maintain balance and prevents tipping over when moving or engaging in physical challenges. Feet should point slightly forward to allow easy pivoting and directional changes.
- b. **Knees:** Knees are bent at a comfortable angle to ensure flexibility and reduce strain on the lower body. Bent knees lower the centre of gravity which increases stability and allows for quicker reactions to sudden changes during play.
- c. **Hips:** Hips are slightly pushed backward with the body leaning forward slightly. This posture ensures readiness to lunge or sprint in any direction.
- d. **Weight distribution:** The body weight is balanced evenly on both feet with weight shifted slightly forward onto the balls of the feet to enable quick directional changes. This positioning keeps players light on their feet, allowing for swift movements and explosive bursts of speed when necessary.
- e. **Stick position:** The stick is held using the basic grip with the left hand firmly at the top of the stick and the right hand placed lower to guide its movement. The flat side faces down and is positioned in front of the body close to the ground, angled towards the ground for quick engagement with the ball. The basic grip ensures flexibility and control, allowing players to quickly engage with the ball. The stick angle should be low enough to intercept passes or tackle opponents effectively while still enabling the player to move freely without overstretching the arms.

2. Upper body

- a. **Back:** The back is straight but slightly leaning forward. This position avoids strain on the lower back while providing a strong posture for quick movements. A rounded back can hinder agility and lead to muscle fatigue.
- b. **Head:** The head should be kept up to maintain spatial awareness. Looking forward allows players to scan for teammates, opponents and potential plays. Constantly looking down at the ball limits situational awareness and delays decision-making during the game.
- c. **Hands:** The hands hold the stick firmly but not rigidly. A relaxed grip allows for smoother transitions. Gripping too tightly can restrict movement and exhaust the hands over time.
- d. **Arms:** The elbows are bent slightly, keeping the arms flexible and ready for action. Stiff or overly extended arms can reduce control and reaction speed. This positioning allows for better manipulation of the stick, especially when performing precise actions such as quick passes, tackles or subtle dribbles. Arms are held close to the body to maintain control and reduce openness to challenges from opponents.

The purpose of the basic stance

The main aim of the basic stance is to;

1. **Improve mobility:** Maintaining a semi-crouched position with weight on the balls of the feet allows players to move quickly in any direction, whether forward to attack, backwards to defend or sideways to intercept.
2. **Provide better balance:** Good balance gives a wide, stable base, which helps prevent players from losing their footing during play.
3. **Get players ready:** The basic stance ensures players are always prepared to respond to game situations. This helps players to be in a position to intercept, defend, or attack.
4. **Enhance control:** A good stance allows players to maintain better control of their stick and the ball. This ensures players are prepared to handle the ball or make quick decisions under pressure, accurately passing to teammates or executing skilful tackles without committing fouls.

Common mistakes to avoid include

1. **Standing too upright:** Players who stand straight with locked knees are slower to react and struggle with balance, leading to reduced speed and agility. An upright stance reduces the ability to lunge for tackles or respond quickly to opponents' movements.
2. **Weight on heels:** Placing weight on the heels limits quick movements and makes it harder to shift direction, making it harder to react quickly. Players with weight distributed incorrectly are more likely to be outpaced or lose balance when attempting tackles or sprints.
3. **Stick too far from the body:** Holding the stick away from the body reduces control and precision. A distant stick makes it harder to intercept passes or dribble effectively, increasing the likelihood of losing possession.
4. **Looking down too often:** Constantly watching the ball instead of scanning the field limits spatial awareness, which causes players to miss opportunities to pass, intercept, or position themselves effectively when they do not keep their heads up.

Passing in Hockey

Passing in hockey is the act of transferring the ball from one player to another during a game. It is a skill used to maintain possession, create scoring opportunities, and advance the ball strategically across the field. Effective passing is important for teamwork, coordination, and tactical play, as it allows players to outwit opponents and maintain control of the game.

Types of passes

Different passes are used based on the game situation and the distance between players.

The types of passes are listed below.

Push pass	This is a short, accurate pass where the ball remains in contact with the stick throughout the motion. It is mostly used in close-quarters play or penalty corner injections.
Hit pass	This is a more powerful pass, where the ball is struck with a swinging motion of the stick. It is suitable for long-distance passes or clearing the ball from the defensive area.
Slap pass	This is a pass that involves a shorter backswing than a hit, providing moderate power and better control. It is often used for medium-distance passes and when aiming for precision.
Flick pass	This is a lofted pass that lifts the ball off the ground, often used to bypass opponents. It requires good technique to control the lift and direction.
Aerial pass	A high, long-distance pass that sends the ball over the heads of players. It is useful for switching play or escaping heavy pressure in crowded areas.
Bunt pass	This is a technique used to pass the ball to a teammate while maintaining control and precision. It involves using the flat side of the stick to gently tap or bunt the ball rather than hitting it with force.

Elements of a good pass

Accuracy	This is sending the ball to reach the intended teammate or target without interception or deviation. Aim for the stick or an area where the teammate can easily receive the ball.
Power	This is the force applied to the ball to match the situation. A strong hit is necessary for long passes, while a light push is suitable for close-range play.
Timing	This is passing the ball at the right time to maximise its effectiveness. Delayed passes can lead to missed opportunities or interceptions.
Direction	This is delivering a guided pass to teammates towards advantageous positions, such as open spaces or attacking zones for possible shooting.

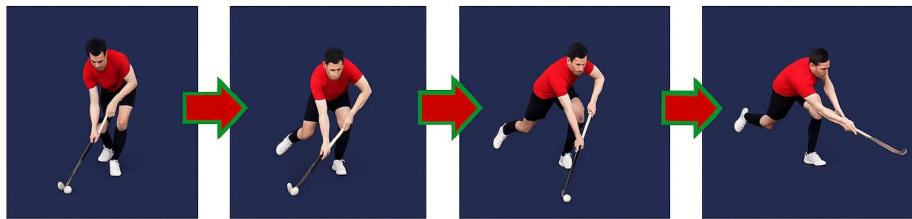
Common mistakes in passing

1. **Inaccuracy:** Poorly aimed passes that result in turnovers.
2. **Weak power:** Insufficient force that makes the ball easy to intercept. Use appropriate power based on distance.
3. **Telegraphing the pass:** Indicating the intentions to pass too early, allowing the opponents to anticipate and intercept. Use deceptive body movements to disguise passes.
4. **Lack of communication:** Failing to communicate with teammates leads to missed opportunities or misinterpretations.

Push pass

The push pass in hockey is a short, controlled, and precise pass that involves a smooth motion where the ball being pushed stays in contact with the stick, allowing for better accuracy and control. The push is ideal for short, quick, and accurate passes to teammates during a fast-paced game. It is often used in tight spaces where other techniques like hitting or slapping may not be suitable. It is commonly used to inject the ball during penalty corners as it provides the precision needed to set up scoring opportunities.

Push Pass Technique



1) Keep eyes on the ball, with feet apart and knees bent.

2) Back foot is roughly in line with the ball

3) Stick in contact with the ball as weight shifts from back to front foot

4) Push the pass towards the target



Figure 9.6: Correct stance, stick and ball placement

Executing the push pass in hockey

1. Starting position

- a. **Grip:** Hold the stick using the basic grip with the left hand placed at the top of the stick, firmly, the right hand placed just above the middle, closer to the head, with the flat side facing down and positioned in front of the body.

- b. **Body position:** Take the basic stance by standing with feet shoulder-width apart, knees slightly bent, hip slightly pushed backwards with the body leaning forward slightly, and the body weight evenly balanced on both feet.
- c. **Ball placement:** Place the ball slightly in front of the body to ensure a full and effective motion while keeping control of the ball. Avoid placing the ball too far forward or close to the body, as this limits the stick's range of motion and reduces the power and accuracy of the push.
- d. **Stick position:** Position the stick in front of body but close enough to remain in control during the forward motion. Hold the stick at a slight angle to keep it close to the ground, ensuring the ball remains on the grass throughout the push. Keep the flat side of the stick in full contact with the ball at all times during the motion. This helps maintain control and improves accuracy. Correct stick handling ensures effective contact and control over the ball.

2. The push motion

The actual movement of the push involves coordinated actions between the upper body, lower body and stick.

- a. **Weight transfer:** Shift the weight of the body from the back foot to the front foot as the ball is pushed forward. This transfer of weight adds power to the push while maintaining balance. The shift should be smooth and controlled, avoiding sudden movements that may affect accuracy.
- b. **Arm and wrist action:** The controlled forward movement of the arms and the stick should be used to guide the ball forward. The engaged wrists should maintain constant contact between the stick and the ball to ensure smooth motion. Avoid jerking or snapping the wrists, as this can lead to inconsistent push or passes.
- c. **Ball contact:** The ball should remain in contact with the stick throughout the push. This ensures better control and allows for more precise passes. Avoid 'tapping' the ball, as this can disrupt the smoothness of the push and reduce accuracy.
- d. **Follow through:** A proper follow-through completes the motion and ensures accuracy and direction.
- e. **Arm extension:** Extend the arms fully in the direction of the push, following the path of the ball. Ensure the stick remains low and close to the ground to keep the ball on the ground or grass.
- f. **Body alignment:** The body should naturally follow the motion of the push with the weight shifted onto the front foot.



Figure 9.7: The push motion in field hockey

Tips for effective pushing

1. **Maintain control:** Keep the ball close to the stick throughout the motion to avoid losing possession. This is especially important in tight spaces or during high-pressure gameplay.
2. **Engage the entire body:** Use legs, hips, shoulders and arms to generate power and precision. The pushing technique relies on coordinated body movement not just arm strength.
3. **Practice accuracy:** Aim for specific targets during training to improve precision. Practising over time will enhance the ability to deliver accurate passes during matches.
4. **Adjust power as needed:** Use more force for longer passes, but maintain control. For short passes, focus on precision over power.

Common mistakes to avoid

1. **Lifting the ball:** This happens when the stick angle is too steep, or the motion is jerky. Always keep the stick low to the ground and to maintain a smooth motion. Lifting the ball unnecessarily can disrupt play or lead to fouls.

2. **Weak push:** A weak push occurs when there is insufficient weight transfer or wrist engagement. All the time focus on using the entire body to generate power.
3. **Poor ball placement:** Starting with the ball too far forward or too close to the body restricts the range of motion, reducing power and accuracy. Correct placement allows for an optimal push.
4. **Abrupt movements:** Jerking the stick forward or stopping the motion too soon affects accuracy and reduces the smoothness of the push. Always complete the motion with a proper follow-through.



Figure 9.8 Pushing in hockey



Figure 9.9: Pushing in field hockey

Activity 9.1 Introduction to Hockey

1. Follow the given instructions below to warm up for today's lesson.
 - a. **Green light:** Jog around a path set out by your teacher.
 - b. **Yellow light:** Walk slowly.
 - c. **Red light:** Freeze in place.
 - d. **Roundabout:** Spin in place.
 - e. **U-turn:** Reverse direction and go back the way they came.
 - f. **Speed rump:** Perform 3 jumping jacks before continuing.
 - g. **Flat tyre:** Hop on one leg for five steps.
 - h. **Car wash:** Pretend to scrub your car with exaggerated arm movements while jogging in place.
 - i. **Traffic jam:** Gather in a group and jog on the spot together.
 - j. **Out of fuel:** Sit down and perform 5 bicycle kicks before resuming movement.
 - k. **Roadblock:** Form a line and sidestep together for 10 steps.
2. In a group, look at the equipment set out by your teacher or use the internet or other available resources to research each of the following
 - a. **Hockey stick:** This is used to hit the ball. Take note of its shape and handle.
 - b. **Hockey ball:** This is what players aim to move into the goal.
 - c. **Hockey goalpost:** Teams try to score here.
 - d. **Safety rules:** For example, keep sticks low, no rough play and always stay aware.
3. In your group, answer the following questions:
 - a. How do you think the shape of the stick helps in playing the game?
 - b. Why is the ball small and hard? How should we handle it safely?
 - c. Why do you think scoring is an essential part of the game?
 - d. What are some safety rules we can come up with as a class during a practical session for hockey?

Activity 9.2 Introduction to the Grip and Partner pushing

1. Grip

- a. In groups, in rows, place the flat side of the hockey stick vertically in front of you with the head of the hockey stick away from you, while the left hand is at the top and the right hand halfway down the stick with the index finger

and the thumb forming a “V” groove on the stick. The Vs of the thumbs and index fingers are pointing down the face of the stick.

- b. Position the ball in front of your body in line with your back (right) foot.
- c. Place the flat stick head behind the ball and push the ball forward using your right hand (providing power) and your left hand for support (giving direction), transfer your weight from your right to left foot as you release the ball.
- d. Follow through with the stick pointing in the intended direction of the ball's movement.

2. Partner pushing

- a. Let's now practise our pushing technique with a partner.
- b. Place two items (e.g. cones) 1m apart.
- c. Stand at the cones facing your partner and take three large steps away from each other. You will now be standing about 5-6m apart.
- d. Push the ball to your partner with it passing through the gap between the cones.
- e. You can increase the difficulty by increasing the distance from your partner and decreasing the gap between the cones. You can also change the angle of the push by moving to the left or right of the cones.
- f. Keep track of your points. You get one point for every ball that passes through the cones.

3. Game

- a. With your team, use the push technique to knock down the targets.
 - b. You will have a lane that is 2m wide and 10m long to work in. (You target zone).
 - c. The first team member should push the ball along the lane, aiming to knock down a target in the target zone.
 - d. Continue until all team members have had a turn. If a target is knocked down, this should be replaced before the next team member takes their turn.
4. In groups, discuss and share which skills you found challenging and which skills you enjoyed the most.

For the skills you found challenging, what action will you take to practise and improve these skills? For the skills you enjoyed, what did you enjoy about these skills?

Following the above activities, please remember to cool down.

DRIBBLING IN HOCKEY

Dribbling in hockey is the skill of moving the ball along the field or ground using small and controlled taps or pushes with the stick to advance the ball across the field. It is a skill that enables players to dodge and avoid opponents, to maintain possession and to create scoring opportunities. Dribbling is important when navigating tight spaces, bypassing defenders, or when there is no immediate passing option. It also allows players to create openings for their teammates.



Figure 9.10: Dribbling in hockey

Types of Dribbling in Hockey

1. **Straight dribbling:** This type of dribbling involves keeping the ball close to the stick and moving it in a straight line using quick but gentle tapping and small touches while moving forward. It is normally used in open spaces while advancing with the ball without interference. It is effective for maintaining control while advancing quickly.
2. **Indian dribbling:** This dribbling technique involves rapidly shifting the ball from one side of the stick to the other or moving the ball from left to right using the flat and rounded sides of the stick. It is mainly useful for avoiding and confusing defenders and creating space.
3. **V-dribbling:** In this dribbling skill, the ball is pushed forward and then pulled back diagonally to the opposite side, creating a V-shape. This is effective for changing direction quickly to avoid tackles.
4. **Pull-back dribbling:** This dribbling technique involves pulling the ball backward to avoid an opponent's tackle, followed by a quick direction change to retain possession.
5. **One-handed dribbling:** This is the type of dribbling where either the left or right hand alone is used to hold the hockey stick to control and move the ball forward. This technique is used when a player needs to extend their reach or maintain speed while dodging opponents. It is very useful in situations where the player needs to stretch to keep possession of the ball or perform quick evasive moves.

Watch the following video on the types of dribbling in hockey: [Dribbling in hockey](#).

The Importance of Dribbling

1. Maintain control and possession of the ball.
2. Bypass opponents with the ball.
3. Set up opportunities for passes or shots on goal.

Techniques for Effective Dribbling

1. **Proper grip on the stick:** Players should use a firm but flexible grip with the left hand at the top of the stick for control and the right hand lower for easy movement of the ball.
2. **Body posture and balance:** Players should adopt a low stance with knees slightly bent and weight distributed evenly for stability.
3. **Eye coordination:** Maintaining a balance between watching the ball and scanning the field is important for effective decision-making. That is, having good eye coordination helps to see teammates to pass to, an opponent to dodge, or a chance to take a shot at a goal.
4. **Stick positioning:** The stick should remain close to the ball, with smooth movements to guide the ball rather than hitting it forcefully.



Figure 9.11: Dribbling through cones

Common Mistakes in Dribbling

1. **Poor ball control:** Hitting the ball too hard or failing to keep it close to the stick can lead to loss of possession.
2. **Looking down:** Constantly watching the ball instead of both the ball and the field reduces awareness of opponents and teammates, making them vulnerable to tackles or missing passing opportunities.
3. **Overusing dribbling:** Excessive dribbling instead of passing, slowing down play, or causing missed opportunities.
4. **Ineffective grip on the stick:** Holding the stick too tightly or incorrectly reduces movement.
5. **Lack of directional control:** Struggling to change direction smoothly while dribbling.
6. **Poor posture and balance:** Standing upright or off-balance makes it harder to control the ball and react to opponents.
7. **Inconsistent speed control:** Dribbling too slowly or losing control of the ball at high speeds.



Figure 9.12: Practising dribbling

Using Dribbling in Game Situations

In a game situation, dribbling is used for:

1. **Dodging opponents:** Dribbling allows players to move around defenders effectively, especially in one-on-one situations.
2. **Transitioning:** Dribbling in switching between dribbling and passing, such as when advancing the ball and then finding an open teammate to pass to.
3. **Strategic play:** Dribbling is used to draw defenders out of position to create space for teammates to exploit.

Activity 9.3 Exploring various dribbling styles in hockey

1. Warm-up

- a. Jog around a rectangular area for two laps (for example, a field or basketball court).
- b. Continue for two more laps; however, this time, stop on each side and complete the following.

Side 1: Jog in a circular motion.

Side 2: Sprint in a triangle shape, changing directions sharply three times.

Side 3: Side-step until you reach the corner of the rectangle.

Side 4: Run in a zig-zag motion or weave through cones (if available).

2. Straight line dribbling

- a. Watch a demonstration of dribbling in a straight line in hockey.
- b. Within your group, take turns practising the dribbling technique in an open space.
- c. Increase the difficulty by dribbling in a straight line between markers.
- d. Dribble between the markers while maintaining control.
- e. Return to your group and hand over to the next person in line.

Top tip: *As the difficulty increases, remember to continue to focus on your technique. Here are some top tips to help you with this activity:*

- i. Gradually increase the speed of the movement from walking to jogging and finally running.
- ii. Move with the ball under control while changing pace (accelerating and decelerating).

3. Straight dribble and stop

- a. Set up a small target or mini goalpost at the end of your dribbling path.
- b. In your groups, dribble the ball straight towards the target.

- c. Your teacher will give a command or blow a whistle. On hearing this, bring the ball to a complete stop. To ensure control, use the flat side of the stick with gentle pressure to prevent the ball from bouncing away.
- d. Change direction by dragging the ball to the opposite side of the path and dribble back to your team at the starting point.

Focus on maintaining control throughout. Start slowly before increasing your speed and reducing the number of touches on the ball. Ensure you have mastered changing direction before increasing speed.

4. The Indian dribble

- a. Watch a demonstration of the Indian dribble in hockey.
- b. Within your group, take turns practising the dribbling technique in an open space.
- c. In groups, about 5 metres apart, Indians dribble the ball between groups. Start by walking and slowly increase your speed to jogging and then running.

Technique

To start

- i. Using the basic forehand grip, hold the stick with your left hand (one hand) at the top of the stick with the heel of the stick touching the ground at 45 degrees and the toe pointing upward. Your feet should be shoulder-width apart.
- ii. Rotate the stick until the toe of the stick points to the ground and the heel upwards.
- iii. Reverse the movement by transferring the stick back to its original position.

Next

- i. Using the basic forehand grip, hold the stick with both hands.
- ii. Turn the stick with your left hand and allow the stick to turn relatively freely in your right hand (reverse grip). Repeat this exercise back and forth, forehand and reverse grip, in that order.

Finally

- i. Standing with your feet shoulder-width apart, move the ball across the front of your body repeatedly. The ball should move from the outside of your right foot (forehand tap) to outside the outside of your left foot and back (reverse tap).
- ii. Increase the speed of movement gradually, with the ball maintained under control.

Top tip: Remember, maintaining control of the ball is key. It's OK to reduce your speed until you have mastered the technique. With the basic grip or forehand grip, the 'V' between thumb and index finger should be facing more to the right than the front, you should be able to see the back of your hand and your three knuckles.

5. Straight and Indian dribble

You are going to alternate between straight and Indian dribbling in a relay format.

- a. Join with another group and line up facing each other. (One group at the starting point and the other at the ending point).
- b. The first person in the starting point group begins by dribbling the ball using the straight dribble. Upon reaching the end, pass the ball to the first person in the ending point group. Join the back of the line for this group.
- c. The person with the ball then dribbles the ball back to the starting point using the Indian dribble.
- d. The next person at the starting point takes over and dribbles back to the ending point using the straight dribble and joins the back of this group.
- e. Continue, alternating between straight and Indian dribbling until all group members have had a turn at using both dribbling techniques.

Activity 9.4 Dribble dash and mini-game

1. Your teacher has created a rectangular playing area and has marked three lanes within the area.

On a signal, start at the end of your assigned lane, dribble your ball to the other end using the designated dribbling technique. At the end of the lane, turn and dribble back to the start.

Lane 1: Perform straight dribbling in a straight line.

Lane 2: Use Indian dribbling, weaving through obstacles.

Lane 3: Use Indian dribbling with tighter turns and closer obstacles.

Remember to switch lanes to try different levels of difficulty.

2. In teams of 8, you are going to take part in a mini-game. The aim is to apply the dribbling and passing techniques you have learned so far.
 - a. Dribble and pass the ball to players within your team.
 - b. Successfully dribbling and passing the ball to at least three teammates consecutively without interception by an opponent earns your team three points.
 - c. Focus on using appropriate body positioning, maintaining control and communicating you're your teammates effectively.
 - d. *Remember to cool down following the above activities*
3. In groups, discuss which skills you found enjoyable. Why did you enjoy these skills? What skills do you need to continue to improve, and what actions will you take to improve these skills?

Take-Home Activity

Try the following to continue to improve your dribbling skills

1. Slalom dribbling: Use the open stick (forehand), dribble weave between cones (in a straight line) side to side behind the ball, keeping control while changing speed and direction.
2. Zigzag dribbling: Use the open stick, dribble the ball around cones arranged in a zigzag pattern, emphasising quick direction changes.
3. Partner dribbling: In pairs, take turns trying to dribble past each other in an area while maintaining control.

HITTING IN HOCKEY

The Fundamentals of Hitting

Hitting in hockey is a skill used to strike the ball powerfully over a long distance or with force towards a specific target using the flat side of the stick. It is primarily used for long-distance passes, clearing the ball from the defensive zone, shooting at goal, and executing penalty corners. It is an effective skill that can change the momentum of the game, allowing for quick counterattacks or precise goal attempts. Hitting is often used to switch play from one side of the pitch to another or when aiming to bypass multiple opponents with a single powerful stroke.



Figure 9.13 Hitting in hockey

Types of Hits in Hockey

Type of hit	Description	How to execute
Drive hit	<p>A drive hit in hockey is a powerful and controlled strike used to send the ball over a longer distance.</p> <p>It involves a full backswing and follow-through to generate maximum power and is normally used for long passes or shooting at goal.</p> <p>Its execution needs a stable stance and excellent timing to ensure accuracy.</p>	<p>To perform the drive hit in hockey, the body is positioned side-on to the ball with feet shoulder-width apart, and the stick is gripped firmly with the left hand at the top and the right hand lower down. The stick is pulled back in a wide arc for a backswing, followed by a rotation of the shoulders and hips as it is swung downward to strike the ball in front of the body, with weight shifting from the back foot to the front. The flat face of the stick contacts the ball just above the ground, driving it forward with speed and precision. A natural follow-through is maintained towards the target. Smooth, controlled movements and precise timing enhance power and accuracy.</p>
Push hit	<p>This is a controlled hit where the ball is pushed along the ground without a backswing.</p> <p>It is useful for short and precise passes with minimal risk of losing possessions, especially in crowded areas where a full swing is not practical.</p>	<p>To execute a push hit, the ball is positioned slightly ahead of the front foot, with the stick held firmly and leaning over the ball, keeping the stick low to the ground. The back foot remains planted while the front foot shifts toward the ball, allowing for a stable base. The stick is held with both hands, and the ball is pushed gently with the flat part of the stick in a smooth, fluid motion. This technique is commonly used for short-range passes or precise shots.</p>
Scoop hit	<p>A scoop hit in hockey is a technique used to lift the ball off the ground in a controlled manner, typically for passing or clearing.</p> <p>The stick is held with both hands, and the ball is positioned slightly in front of the body.</p>	<p>The scoop is performed by using the back of the stick's blade to roll the ball upward in a lifting motion, with the body leaning slightly forward to provide control. The motion is smooth and quick, ensuring the ball is elevated without losing too much speed or accuracy. This technique is especially useful for getting the ball over an opponent's stick or quickly moving the ball across the field.</p>
Flick hit	<p>A flick hit is a technique used to lift the ball gently off the ground with precision and control.</p> <p>It is commonly used for midair passes, penalty strokes, free hits, and avoiding or lobbing the ball over defenders.</p>	<p>To execute a flick, the stick is positioned low behind the ball, with the face of the stick angled slightly upwards. The bottom hand controls the movement, while the top hand guides the flick. The stick is then flicked forward and upwards with a quick, sharp motion, causing the ball to lift into the air and travel towards the target. This technique is often used for passing over opponents' sticks or for taking a shot at goal from a short distance.</p>

Sweep hit	<p>A sweep hit is a technique used in moving the ball across the field or to execute a powerful pass or shot.</p> <p>It is particularly effective on uneven surfaces or when attempting long-distance passes at ground level.</p>	<p>The execution of this skill involves sweeping the stick along the ground in a semi-circular motion to make contact with the ball. The sweep involves a low, sweeping motion with the stick, starting from the back and swinging in a wide arc towards the ball. The stick is held with both hands, and the ball is struck with the flat face of the stick, naturally on the side of the body. Unlike the slap hit, the sweep generates power through a smooth, controlled arc rather than a sharp impact. The follow-through extends the stick in the direction of the target for accuracy and distance.</p>
Slap hit	<p>A slap hit is a method used to strike the ball with power and accuracy for long passes or shots on goal.</p> <p>It is a quick hit with a short backswing, often used for fast, medium-range passes or during penalty corners. This skill is quicker than a drive with good power and accuracy.</p>	<p>The hit is executed by swinging the stick in a wide arc, making contact with the ball while it remains on the ground, using the flat face of the stick. This technique generates significant speed and power, making it effective for fast and forceful ball movement. The slap hit is commonly used in situations where a controlled, powerful strike is needed, such as clearing the ball from the defensive zone or taking a hard shot at the goal.</p>
Reverse hit (Tomahawk)	<p>Tomahawk is a field hockey shot that uses the reverse side of the stick to hit the ball.</p> <p>It is used to score goals and, occasionally, to give a pass.</p>	<p>Hold the stick in a frying-pan grip. Position your body sideways to the direction you want the hit to travel. (Right foot leading). Bring your elbow back and the stick up towards your ears. Create a 'C' and follow through by making contact with the ball with your stick parallel to the ground. Hit the middle of the ball with the flat edge of the stick.</p>

Use the link below to watch a demonstration of the reverse or Tomahawk hits:

[Reverse/Tomahawk hits](#)



Figure 9.14: Drive hit in hockey



Figure 9.15: Push hit

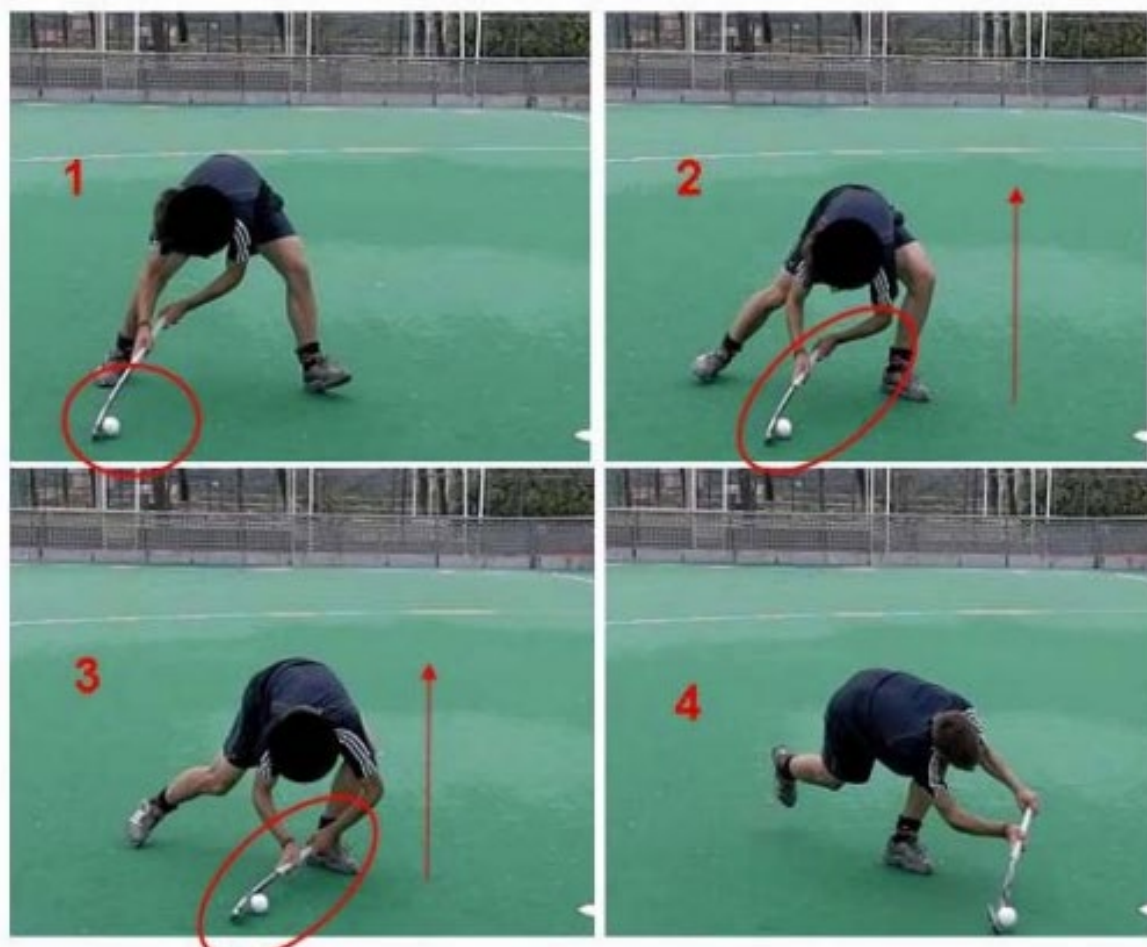


Figure 9.16: Scoop or flick hit



**Crouched
forward & down
position**



**Ball is aligned to
front foot**



Open



Closed

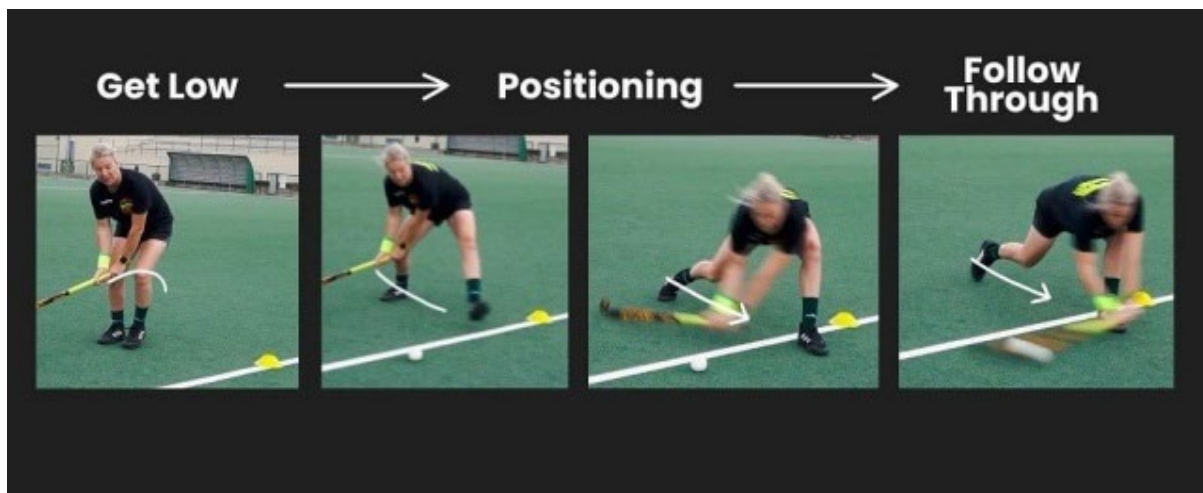


Figure 9.17: Steps in performing the slap or sweep hit

Rules and safety considerations during hitting

Hitting is only allowed when the stick remains below shoulder height during the swing and follow-through. A high stick hit is considered dangerous and penalised. Teammates are to be aware of the hit's direction, and opponents are to maintain a safe distance to avoid injuries.

Common mistakes and corrections

1. **Incorrect grip:** Holding the stick too tightly or incorrectly. This reduces control. The placement of the hand on the stick should be adjusted for comfort and effectiveness.
2. **Poor body positioning:** Leaning back or standing too upright. This position diminishes power. The stance and body position should be low and balanced.
3. **Over swinging:** Excessive backswing. swinging backwards too much may lead to fouls or missed hits. Controlled and compact swings should be the focus during practice and gameplay.

Strategic use of hitting in games

1. **Long-distance passes:** Use hitting to quickly transfer the ball across the field, bypassing opponents and creating space for attacking opportunities.
2. **Shooting at goal:** Hits are ideal for powerful and direct shots on goal, especially during penalty corners.
3. **Clearing the ball:** In defensive situations, hitting effectively clears the ball from the danger zone, reducing the pressure on defenders.
4. **Setting up plays:** Accurate hits set up teammates for scoring opportunities by quickly delivering the ball into the attacking circle.

Activity 9.5 Recap on the different dribbling styles

1. Warm-up

- a. Form lines and jog around the field or a designated area. When you hear your teacher call out instructions, vary your jog by incorporating these movements. For example, you may hear things such as high knees, butt kicks, side shuffles or skips.
- b. Perform dynamic stretches targeting key muscles used in hockey. For example, forward and sideways leg swings, arm circles, hip rotations and lunges combined with a twist, etc.

2. Recap

Complete the following to build on your dribbling and passing skills. Note, your teacher may ask you to complete a selection of these activities. If you don't do them all in class, you can use these activities to practise outside of class.

- a. Dribble the ball around cones set up in a zigzag pattern and pass the ball to the next team member in line.
- b. Work on pushing the ball to strike targets, engaging your muscles while enhancing your precision in pushing.
- c. Dribble the ball across the field while your classmates attempt to steal, intercept or knock the ball away using their sticks.

Activity 9.6 Introduction to the Grip, Target and partner hitting

1. In groups, hold the stick with both hands at the top of the stick with the left hand at the top of the grip and the right hand at the bottom. Hold it firmly but not too tightly, allowing for flexibility and movement.
2. In pairs, practice the grip, check each other's grip, and provide feedback and corrections as needed.

Note: *Your hands are touching, forming a double 'V' on the top.*

Target hitting

3. Watch a demonstration of the hitting technique used in hockey.
4. Under the guidance of your teacher, practise the hitting technique. The aim is for you to hit the ball towards a target or through a goal.
5. Increase the difficulty by increasing the distance to the target and/or reducing the distance between the goal posts.

Technique

- a. Stand sideways to the direction in which the ball is going to be hit.

- b. Hold the stick in a double 'V' grip, stand feet shoulder-width apart, knees slightly bent.
 - c. Your left shoulder and foot point in the direction in which the ball will travel.
6. The ball is placed just in front of your leading foot (left foot).
 7. Cock the wrist 90 degrees with the stick moving towards your forearm.
 8. Start with a back-lift of the stick and weight moving onto your back foot (right foot).
 9. Take your hands around your body to the right side. Your hands should be level with your hips.
 10. Swing the stick down to strike the ball. Transfer your body weight from the back (right) foot to the front (left) foot to provide the power for the hit.

Partner hitting – stationary

11. Set up a gate/goal about 2m wide.
12. Stand facing your partner and take 5 large steps away from them. You will now be about 10m apart with the gate in the centre.
13. Take turns lining up and hitting the ball. Your goal is to achieve maximum distance.
14. Measure the distance the ball travels.
15. Observe your classmates and provide constructive feedback on their technique and power.

Activity 9.7 Goal zone challenge

1. Your teacher has set up a playing area and will divide you into teams.
2. One team begins the game with a push pass from the centre of the field.
3. After the ball is in play, use push passes and hitting to move the ball towards your opponent's goal.
 - a. **Movement rules:** You can only use push passes or hitting; no dribbling or lifting the ball is allowed. The attacking team can enter the goal zone to attempt a goal, but the defending team must stay outside the goal zone.
 - b. **Scoring:** A goal can only be scored if the attacking player is within the goal zone.
 - c. **Defending rules:** Defenders can block the ball and intercept passes but cannot step into the goal zone. Defenders can only challenge the ball by staying on their feet, no sliding or aggressive stick play.
 - d. **Restarting play:** After a goal is scored, the defending team gets possession and restarts the game from the centre of the field. If the

ball goes out of bounds, the opposing team restarts with a push pass from the sidelines.

- e. **Tips for success:** Communicate with your team and work together to move the ball effectively. Focus on the accuracy of your push passes and hits, and on staying in position to receive the ball.
- f. **Winning the game:** The team with the highest points at the end of the allocated game time wins.

Celebrate your win as a team and discuss what you found enjoyable and what could be improved.

Following the above activities, please remember to cool down.

EXTENDED READING

Use the links below to learn more about hockey

- https://www.tutorialspoint.com/hockey/hockey_tutorial.pdf.
- <https://www.bing.com/videos/riverview/relatedvideo?&q=basic+hockey+drills+for+beginners&&mid=E36042C9263CAF1ED63EE36042C9263CAF1ED63E&&FORM=VRDGAR>.
- <https://www.bing.com/videos/riverview/relatedvideo?&q=basic+hockey+drills+for+beginners&&mid=187C8848A61D84FC39FC187C8848A61D84FC39FC&&FORM=VRDGAR>.

REVIEW QUESTIONS 9

1. What is the main purpose of the push in field hockey?
2. Describe the grip and stance required for an effective push.
3. When is it most appropriate to use a push instead of a hit?
4. Describe the basic grip and hand positioning for effective dribbling.
5. How does head positioning affect dribbling?
6. What role does practice play in developing dribbling skills?
7. How should the follow-through be executed after a hit?
8. When is it most appropriate to use hitting in a game?

SECTION

10

HEALTH AND WELLNESS - PART FOUR



PHYSICAL ACTIVITY AND HEALTH

Health and Wellness

INTRODUCTION

Stress is an inevitable part of human life, arising from individuals' interactions with the demands of daily living. It is also defined as the body's physiological and psychological response to perceived challenges or threats, stress can be triggered by a variety of factors such as work pressures, personal relationships, financial concerns or health issues. While stress is a natural response designed to help individuals adapt to changing circumstances, prolonged or excessive stress can have significant repercussions on health and well-being. Understanding the concept of stress, its triggers and its effects is critical for promoting a balanced and healthy lifestyle.

KEY IDEAS

- Stress is the body's natural response to any demand, pressure or threat that disrupts its balance or equilibrium. It also refers to circumstances that disturb the body's normal state and to which the body tries to adapt or adjust. Stress is categorised into two types, namely good stress (Eustress) and bad stress (Distress).
- Stressors are situations, events, or conditions that cause or trigger stress or physical and emotional reactions. Stressors can be external or internal, acute or chronic.
- Managing stress through healthy coping strategies is important for maintaining overall wellbeing.

STRESS AND ITS COMMON SOURCES

What is Stress?

Stress is the body's natural response to any demand, pressure, or threat that disrupts its balance or equilibrium. Stress also refers to circumstances that disturb the body's normal state and to which the body tries to adapt or adjust. It is both a physiological and psychological reaction designed to help individuals adapt to challenging or changing situations. Simply put, stress describes the many demands and pressures that all people experience each day. The perception of stress varies from person to person based on individual resilience and coping abilities. Stress can disrupt emotional balance and lead to burnout, social withdrawal, or a reduced quality of life. It affects relationships, productivity, academic progress, and overall satisfaction with life. Adopting effective strategies can lessen the harmful effects of stress.

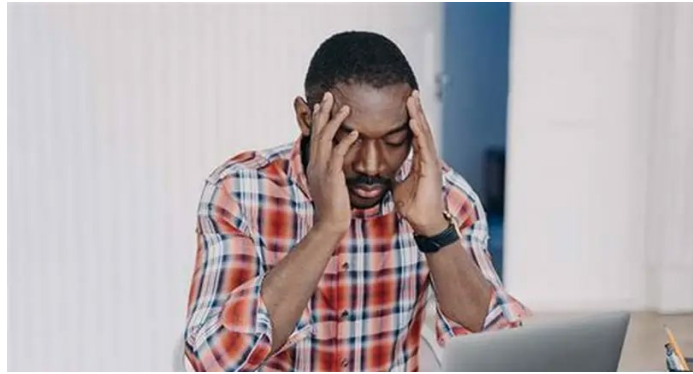


Figure 10.1: A stressed person

Types of Stress

Stress is categorised into two types, namely good stress (Eustress) and bad stress (Distress).

Good Stress (Eustress): Good Stress is a positive form of stress which have a beneficial effect on health because it comes with excitement and good feelings. Good stress motivates and improves performance. Examples of good stress are writing and passing exams, being promoted to a higher level at school or work, going on a vacation, graduating from school, having or starting a job after graduating from school, getting married, a first pregnancy after marriage or having a child, buying a home or building a house. These events can be stressful, but they also bring excitement. This is because, while participating in them, the body releases feel-good chemicals called endorphins, which make the experience enjoyable despite the stress involved.

Bad Stress (Distress): Bad stress or distress is stress characterised by anxiety and unpleasant feelings that decrease ability or performance. Negative Stress is perceived within one's coping abilities. When an individual thinks a situation or a task is beyond their skills and capabilities, this can cause bad stress.

Examples of situations that can cause distress include not getting admission, failing an exam, not understanding skills or concepts taught at school, unemployment, getting involved in legal issues, procrastinating about things that can done easily, divorce of parents and death of a loved one.

Two types of Stress

<ul style="list-style-type: none"> ▪ <u>Eustress</u>- Healthy positive stress ▪ Examples- <ul style="list-style-type: none"> - Getting married - Nervousness you get to play a game, perform, speak in front of people. - Riding on a roller coaster - Scary movie - Fun challenge 	<ul style="list-style-type: none"> ▪ <u>Distress</u>- Unhealthy stress ▪ Examples- <ul style="list-style-type: none"> - Anything that causes you to be unhealthy - Extreme Fear and anxiety.
--	---

Figure 10.2: Types of stress

Stressors

Stress is caused by stressors. Stressors are situations, events, or conditions that cause or trigger stress or physical and emotional reactions. Stressors can be external or internal, acute or chronic.

External Stressors

External Stressors refer to pressures or challenges that arise from factors outside an individual; they often stem from their environment or interactions with others.

Examples include:

Work and academic pressures	This occurs when a person is trying to meet work demands, such as meeting deadlines, workload, or performance.
Financial challenges	This happens when individuals are struggling with financial support, income, debt, and budgeting.
Social relationships	This arises when there are relationship conflicts or strained relationships, and a lack of family and social support.
Environmental factors	This occurs from excessive noise, pollution, unsafe living conditions, and changing weather conditions (heat, rainfall patterns, etc).
Major life changes	This is when people move from home to live on their own for the first time, lose a loved one, or fall ill.
Societal issues	This occurs when there is discrimination against people, political instability and community crises.

Internal Stressors

Internal stressors are stresses that originate from within an individual. They normally stem from an individual's thoughts, feelings or physical condition. They can affect the person's emotions and physical well-being. Common examples include the following.

Personal expectations	This is when people set unrealistic goals and are unable to achieve them, or are struggling to achieve them, or are afraid they might fail to attain what they intend to attain. This can create pressure and self-criticism.
Negative self-talk	This happens when people engage in harsh or pessimistic internal dialogues that lead them to feel inadequate in performing a task or attaining a particular goal in life.
Fears and worries	This occurs when individuals have concerns about failure, being rejected by others or peers or the unknown, which triggers internal stress.

Physical health issues	This happens when people are experiencing chronic pain as a result of illness and hormonal imbalance, which serve as internal stressors (sickle cell, etc.).
Emotional struggles	This arises when people are experiencing feelings of anger, guilt, sadness or frustration, all of which can lead to stress.
Cognitive overload	This is trying to process too much information or multitask which can overwhelm the mind.
Lack of confidence	Doubting about one's abilities or decisions can increase stress.
Unresolved past experiences	Lingering emotional trauma or regret from past events can manifest as stress.
Lifestyle choices	Poor nutrition, lack of sleep and insufficient exercise can contribute to stress internally.
Personal values and conflicts	Inner conflict between one's values, beliefs can lead to stress.

While occasional stress can be beneficial for growth and adaptation, ongoing exposure to stress (chronic stress) can lead to physical and mental health issues such as heart disease, depression, or weakened immunity. Managing stress through healthy coping strategies is important for maintaining overall well-being.

Acute Stress

Acute stress is a brief and immediate reaction to a specific threat, challenge, or demand. It triggers the body's 'fight-or-flight' response, resulting in temporary physical and psychological changes such as a rapid heartbeat, increased alertness, and a surge of energy. Unlike chronic stress, acute stress subsides once the triggering event or situation is resolved or no longer present.

The Body's Response System - Fight or Flight Response

The fight or flight response is the body's automatic, involuntary or natural reaction to stressors, threat or danger. This survival ability prepares or readies an individual to either stand and fight the threat or flee from it, or avoid it. To fight or flee the stressor is driven or triggered by the sympathetic nervous system, which results in the release of stress hormones known as adrenaline and cortisol. These hormones cause several physiological changes in the body by increasing the heart rate, rapid breathing and heightened alertness, all geared towards immediate action in response to danger or stress.

Examples of threats or stressors at school

Stressor	Flight response	Fight response
Exam Stress: A learner is about to take an end of semester exam and feels anxious about the possibility of failing.	The learner may choose to avoid the situation altogether by procrastinating, skipping the exam or feeling the urge to flee from the pressure by engaging in distraction or avoidance behaviours, such as leaving the study environment or avoiding the exam entirely by pretending to be sick or panicking to the point of freezing and being unable to perform.	The learner may try to "fight" the stress by preparing harder, cramming, or taking on a more aggressive approach to studying, focusing all energy on trying to control the outcome.
Quiz Stress: A learner is given a surprise pop quiz or class test and is unprepared.	The learner could feel alarmed, shocked and panic leading to feelings of fear or blanking out during the quiz and might not pass the quiz or test.	The learner might remain calm and attempt to do their best on the quiz or test by using any knowledge they have and focusing intently to overcome the challenge.
Class Presentation: A learner has to give a presentation in front of the class and is nervous about speaking publicly.	The learner could feel the urge to avoid speaking and might try to find ways to delay the presentation or even skip class altogether that day.	The learner might face their fear and take a deep breath and give the presentation confidently, relying on preparation and self-assurance.

Examples of threats or stressors in school sports competitions

Stressor	Fight response	Flight response
A learner athlete is facing a tough competitor in an individual sport like tennis or javelin.	The athlete sees the opponent as a challenge, using the situation to push themselves beyond their limits, increasing their focus and intensity to win.	The athlete gets intimidated by the opponent's skill and experience, leading to self-doubt and anxiety, which results in a poor performance or inability to cope with the pressure.
Learner athletes preparing for super zonal or national competition that could determine their future in the sport.	The athlete tries to channel their nerves into heightened performance, pushing through fatigue, giving their best effort at training and focusing on their goals with determination.	The athlete felt nervous about the pressure and started second-guessing their abilities and potential, leading to an inability to think clearly and make informed decisions during critical moments of the competition.

A learner athlete in a time-pressured situation (e.g., Final exam week combined with a championship game).	The learner athlete tackles both tasks by balancing studying for the final exams and preparing for the championship game in their sport by managing their time effectively, staying organised and using discipline to perform well academically and athletically.	The learner athlete feels overburdened by the pressure from studying and preparing for the competition. They procrastinate, feel burned out or struggle to prioritise, leading to lower performance in both areas due to stress and exhaustion.
--	---	---

Examples of threats or stressors at home

Physical Stressors

Stressor	Fight response	Flight response
Hearing a sudden loud noise at night or smelling smoke, which may indicate a fire outbreak in the house.	Investigating the noise or confronting the intruder directly, grabbing a defensive tool or calling out to alert others.	Hiding in a secure room, escaping through a window or a back door or calling for help (e.g., police or neighbours).
Someone walking alone at night hears footsteps behind them and feels threatened or unsafe by the presence of another person.	The individual may prepare to defend themselves either by confronting the person directly or finding a way to protect themselves (e.g., using self-defence skills, gathering anything around to use in their defence)	The person may choose or decide to run away from the scene by increasing their speed to get to a safer area or find a safer area to hide.

Emotional or social threats or stressors

Stressor	Fight response	Flight response
Heated arguments or conflicts with family members or friends. Or The pressure of managing household chores.	Arguing back, becoming defensive or trying to take control over the situation.	Leaving the room, avoiding confrontation or withdrawing from communication.

Health-related threats or stressors

Stressor	Fight response	Flight response
<p>A sudden illness or injury to a family member.</p> <p>Or</p> <p>Discovering a pest infestation, like rodents or insects (bed bugs, cockroaches, termites, ants, weevils, locusts, fleas, etc).</p>	<p>Taking immediate action, such as administering first aid, rushing the person to the nearest health post, addressing the pest issue or resolving the problem head-on.</p>	<p>Feeling overwhelmed, ignoring the issue or relying on someone else to handle it.</p>

Examples of threats or stressors on the farm or in the bush

Stressor	Fight response	Flight response
<p>Wildlife encounters:</p> <p>Spotting a dangerous animal, such as a snake, wild elephant, lion, leopard, wild monkeys, crocodile, sea turtles, sharks or large predator.</p> <p>Or</p> <p>Being attacked by insects like bees or wasps.</p>	<p>Attempting to kill, scare away the animal, using a tool or weapon to defend oneself, or making loud noises to assert dominance.</p>	<p>Quietly retreating, climbing a tree, running to a safe distance or freezing to avoid detection.</p>
<p>Environmental hazards:</p> <p>Sudden changes in weather, like an approaching storm.</p> <p>Or</p> <p>Hearing the sound of falling trees or landslides around the house or in the bush.</p>	<p>Taking measures to secure oneself or the surroundings, such as seeking shelter, clearing debris or preparing for the storm.</p>	<p>Fleeing the area to avoid danger or moving to a safer location.</p>

Work-related threats or stressors

Stressor	Fight response	Flight response
<p>Malfunctioning equipment that could cause injury (treadmills, playground equipment such as broken swings, slides, climbing frames, etc, faulty brakes in cars, trucks, motors or bicycles, airbags, seatbelts, faulty refrigerators, microwaves, gas stoves, water heaters, etc.</p> <p>Or</p> <p>Discovering crop damage caused by pests or diseases can lead to financial stress.</p>	<p>Trying to fix the malfunctioning equipment immediately or taking steps to stop or lessen crop damage.</p>	<p>Stopping work altogether, leaving the task unfinished or seeking assistance rather than addressing the issue alone.</p>

The response depends on the individual's perception of their ability to handle the stressor or threat. Fight responses involve direct action, while flight responses focus on avoidance or escape.

Examples of acute stress among learners

Examination pressure	Feeling nervous or overwhelmed when preparing for or writing an exam.
Classroom presentations	Anxiety or stress is experienced when presenting a topic in front of peers in class.
Missed deadlines	Panic when a project or assignment deadline is unexpectedly forgotten or overlooked.
Unexpected questions	Stress occurs when called upon by a teacher to answer a question without preparation.
Conflict with peers	Immediate stress from a heated argument or misunderstanding with a classmate.

Examples of acute stress among teachers

Unexpected classroom disruptions	Stress is caused by a sudden conflict or disruptive behaviour among learners during a lesson.
Observation by administrators	Anxiety experienced when being observed or evaluated by school administrators or inspectors without prior notice.
Last-minute schedule changes	Stress from being informed at short notice about changes in the teaching schedule or an additional responsibility, such as covering for an absent colleague.
Technical failures	Frustration when technology (e.g., projectors, smartboards or computers) malfunctions during an important presentation or a lesson.
Parent complaints or confrontations	Immediate stress from handling an unexpected complaint or confrontation from a parent.
Tight grading deadlines	Pressure to mark a large volume of assignments or exams within a short timeframe.
Managing emergencies	Stress from having to respond quickly to learner injuries, illnesses or other emergencies in the classroom, playground or sports field.
Delivering difficult news	Anxiety when needing to inform a learner or parent about poor academic performance or disciplinary issues.

Examples of acute stress among other people

Workplace deadlines	Stress from rushing to complete an urgent task or project on a tight deadline.
Job interviews	Anxiety before or during a high-stakes interview for a desired job.
Child's emergency	Panic when a child gets injured suddenly.
Traffic incidents	Stress caused by a near-accident or road anger from another driver.

Acute stress is a natural and often helpful response that enables people to react or think quickly in urgent situations, which can be draining but normally subsides once the issue is resolved. However, repeated exposure to acute stress can contribute to chronic stress if not managed effectively.

Chronic Stress

Chronic stress is a long-term state of emotional or physical strain caused by ongoing challenges or pressures that feel overwhelming. This type of stress negatively affects a person's physical, mental and emotional well-being. It occurs when an individual faces continuous pressure without adequate relief or recovery periods.

Over time, chronic stress may lead to serious health problems such as anxiety, depression, cardiovascular diseases and a weakened immune system.

Examples of Chronic Stress among Learners	<p>Academic pressure: Constant worry about exams, grades or meeting expectations from parents and teachers.</p> <p>Social challenges: Struggles with bullying, peer pressure or maintaining friendships.</p> <p>Time management: Balancing school, extracurricular activities and personal life.</p> <p>Future uncertainty: Fear of not being able to secure a job or get into a preferred university after graduating from senior high school.</p>
Examples of chronic stress among teachers	<p>Workload: Managing large class sizes, grading, lesson planning and administrative tasks.</p> <p>Learner behaviour: Dealing with disruptive or unmotivated learners.</p> <p>Job security: Anxiety about contract renewals or performance evaluations.</p> <p>Work-life balance: Struggling to maintain a balance between professional responsibilities and personal life.</p>
Examples of Chronic Stress among other people	<p>Workplace stress: Long hours, unrealistic deadlines, or dealing with difficult colleagues or bosses.</p> <p>Financial strain: Ongoing concerns about paying bills, debts, or providing for the family.</p> <p>Health issues: Coping with chronic illness or caring for a sick family member.</p> <p>Relationship problems: Enduring toxic relationships or constant conflicts within the family or with a partner.</p>

Common Sources of Stress

Common sources of stress, or stressors, can vary greatly depending on an individual's circumstances, their coping abilities and how the individual perceives the situation.

They can be grouped into several categories.

Personal life and relationships	<p>Family conflicts: Disputes with family members or strained relationships.</p> <p>Romantic relationships: Breakups, divorce or unresolved issues with a partner.</p> <p>Friendship issues: Misunderstandings or lack of support from friends.</p> <p>Parenting: Challenges related to raising children</p>
--	--

Work and education	<p>Job stress: Heavy workload, tight deadlines or difficult colleagues.</p> <p>Job insecurity: Fear of losing employment or financial instability.</p> <p>Education: Academic pressures, exams or balancing studies with other responsibilities.</p> <p>Lack of work-life balance: Overworking or inability to manage personal and professional demands.</p>
Health related	<p>Chronic illness: Personal health conditions or those of a loved one.</p> <p>Injuries: Physical limitations or pain caused by accidents or injuries.</p> <p>Mental health issues: Anxiety, depression or other psychological challenges.</p>
Financial problems	<p>Debt: Loans, impulse buying, excessive spending on non-essential goods, living beyond means, failure to budget effectively, inadequate savings for future needs and emergencies, spending on gambling, drugs, and alcohol.</p> <p>Unemployment: Loss of income or difficulty finding a job.</p> <p>Unexpected expenses: Medical bills, home repairs or emergencies.</p>
Major life changes	<p>Relocation: Early adulthood and school years that are associated with moving out of the family home, moving to a new home, city or country.</p> <p>Loss of a loved one: Grieving a death or dealing with terminal illness.</p> <p>Marriage or divorce: Adjusting to a new marital status.</p> <p>Retirement: Transitioning out of the workforce.</p>
Social and environmental factors	<p>Peer pressure: Feeling compelled to meet societal or cultural expectations.</p> <p>Discrimination or harassment: Based on ethnic group, gender, religion, social status, etc.</p> <p>Noise or crowding: Living in noisy, overcrowded or unsafe environments or neighbourhoods.</p>
Personal expectations	<p>Perfectionism: Setting unattainable goals or being overly self-critical.</p> <p>Time management: Struggling to prioritise, meet deadlines or work within time frames.</p> <p>Fear of failure: Worrying about not meeting personal or professional goals.</p>

ACUTE VS. CHRONIC STRESS

www.nutritionwithjudy.com

nutritionwithjudy

acute stress

SUDDEN, TYPICALLY SHORT-LIVED, THREATENING EVENT



Giving a Speech



Intermittent Fasting



Lifting Heavy Weights



Life Change (Death)



Presentation at Work



Running Sprints

chronic stress

ONGOING ENVIRONMENTAL DEMAND



Drive to Work



Poor Diet



Poor Sleep Habits



Marital Conflict



Negative Friends



Work Stress

* NOTE: There is also Episodic Stress where acute stress is suffered too frequently. Often observed in Type A personalities and can be found to always be in a hurry and short tempered

nwj

Figure 10.3: Acute and Chronic Stress

The Impact of Stress on Health and Well-Being

The impact of stress on health and well-being describes how stress affects a person's physical, mental and emotional health. It includes both the harmful effects of stress and, in some situations, its ability to inspire positive outcomes when effectively managed.

Physical health impacts

1. **Cardiovascular problems:** Stress increases heart rate and blood pressure, leading to a higher risk of hypertension, heart attack and stroke.
2. **Weakened immune system:** Chronic stress suppresses immune function, making individuals more prone to illnesses like colds, flu and infections.
3. **Digestive issues:** Stress can cause stomach aches, nausea, diarrhoea, constipation or conditions like irritable bowel syndrome (IBS) if left unattended to.
4. **Muscle tension and pain:** Prolonged stress often leads to muscle stiffness, backaches, headaches or migraines.
5. **Sleep disturbances:** Stress disturbs sleep and sleep patterns, leading to insomnia or poor-quality sleep, which worsens tiredness and reduces overall health.
6. **Weight changes:** Stress can lead to overeating (comfort eating) or undereating, causing weight gain or loss.
7. **Chronic conditions:** Long-term stress increases the risk of developing chronic diseases like diabetes, obesity and gastrointestinal disorders.

Mental and emotional health impacts

Stress can be a major contributor to the development of anxiety disorders and depression.

1. **Emotional instability:** Individuals under stress may experience mood swings, irritability, anger and frustration.
2. **Cognitive decline:** Stress can impair memory, focus and decision-making abilities, reducing productivity and learning capacity.
3. **Burnout:** Prolonged stress may lead to feelings of exhaustion, disinterest and reduced performance, commonly known as burnout.

Behavioural impacts

Stress can impact or cause a change in our behaviour. This includes:

1. **Unhealthy coping ability:** Stress may lead to reliance on alcohol, smoking, drugs or overeating as ways to cope, which worsen health issues.
2. **Reduced physical activity:** Stress often leads to exhaustion or reduced motivation for physical exercise, impacting overall fitness.
3. **Social withdrawal:** Individuals under stress may isolate themselves, which can lead to loneliness and further emotional distress.

Long-term consequences

1. **Chronic disease development:** Prolonged exposure to stress hormones (like cortisol) contributes to serious health problems, including cardiovascular disease and metabolic syndrome.
2. **Shortened lifespan:** Chronic stress can accelerate ageing and increase the risk of premature death.

Understanding these impacts highlights the importance of stress management techniques to maintain physical and mental well-being.

Activity 10.1 Stress and managing it.

1. Look at the images provided relating to stress or use the internet to search for the causes of stress. With your classmates, discuss the following questions:
 - a. Have you ever heard the word stress?
 - b. How do you imagine stress?
 - c. What images or scenes come to mind when you think of stress?
2. Select one image that represents a situation that causes you stress. Share this image with your classmates and share why you chose this particular image.
3. With your classmates, agree on the meaning of the word 'stress' and write this in your notebook.

4. Create a word cloud with your classmates by brainstorming as many words or phrases you associate with stress as possible.
 - a. Think about a moment you have felt under pressure and write a brief description of your experience. Now share your experience with a partner. Would your partner feel the same way as you in the same situation?
 - b. Look at the following situations. How would you feel in these situations, and what would your reaction be?
 - i. Preparing for an exam.
 - ii. Running late for school.
 - iii. Meeting a snake.
 - iv. Balancing homework with household chores.
 - c. Do all of your classmates experience stress in the same way as you? If not, why do you think this is? Write your answer in your notebook.
5. In groups, use the internet to create a “stress map”, list common stressors, and how these can affect our health and wellbeing.

For example:

Things that cause stress/stressors

In what ways can stress impact our health and well-being?

- A. Work and education B. Social stress
C. Major life changes D. Personal and relationship stress
E. Social and environmental stress F. Health stress

- a. In your group, discuss which of the above stressors you can control. Are there any you can't control? How might you manage these?

Activity 10.2 Types of stress and their effects

1. In a group, use the internet to search for the meaning of the following terms:
 - a. Acute stress
 - b. Chronic stress
 - c. Eustress
 - d. Distress
2. Add to your definition with an example of each type of stress. Share these with your class.
3. Make a list of examples from your classmates for each type of stress.
4. Based on your findings, discuss the following in an all-class discussion.
5. Stress can have both positive and negative effects.

Activity 10.3 Fight or flight response

1. In groups, search the internet for the difference between the “fight response” and the “flight response” to stress. Share your findings with other classmates.
2. Think about real-life situations when you have experienced these responses and make a note of these in your notebook.

Activity 10.4 How stress builds up

In this activity, you will explore how stress builds up over time.

In groups, with balloons and slips of paper.

1. Write down different sources of stress on slips of paper.
2. For each stressor, blow a little air into the balloon.
3. Keep adding air to represent stress building up.
4. Discuss what might happen if the balloon isn't released.

PREVENTION AND MANAGEMENT OF STRESS

Signs and Symptoms of Stress

Signs and symptoms of stress refer to the physical, emotional, cognitive, and behavioural changes that occur in a person in response to stress. They indicate how the body and mind react to challenging or threatening situations.

Signs: Signs of stress are the external and observable indicators that reveal a person is experiencing threats or challenges. These can manifest as noticeable changes in behaviour or appearance, such as trembling, sweating, weight gain or loss or persistent tiredness.

Symptoms: Symptoms of stress are internal and subjective experiences reported by the individual. These are sensations or feelings that only the person experiencing the stress can describe, such as nervousness, irritability, headaches, muscle pain or tension. Both signs and symptoms act as important cues, signalling that someone might be under stress and may require support or intervention. Identifying these signs and symptoms early is key for managing stress effectively and preventing long-term health consequences.

Physical signs and symptoms of stress	Emotional signs and symptoms of stress	Cognitive signs and symptoms of stress	Behavioural signs and symptoms of stress	Long-term signs and symptoms of stress (if stress persists)
Headaches or migraines. Muscle tension or pain (e.g., neck, shoulders). Fatigue or low energy. Sweating. Clammy hands. Trembling body or hands. Rapid heartbeat or palpitations. Shallow or rapid breathing. Upset stomach and feeling sickness. Frequent colds or illnesses due to a weakened immune system. Weight loss or gain. Insomnia or difficulty sleeping.	Irritability or mood swings. Anxiety or nervousness. Feeling overwhelmed or helpless. Sadness or frequent crying. Anger or frustration. Difficulty relaxing. Low self-esteem or feelings worthless.	Difficulty concentrating or focusing. Forgetfulness. Racing thoughts. Negative thinking patterns. Poor judgment or decision-making. Constant worry or overthinking. Difficulty processing information.	Changes in appetite (overeating or undereating). Increased use of alcohol, tobacco or other psychoactive drugs. Social withdrawal or isolation. Nail-biting. Pacing. Fidgeting. Procrastinating tasks. Neglecting responsibilities. Frequent outbursts or arguments. Avoiding situations or tasks that cause stress.	Chronic pain or frequent health issues. Hypertension or high blood pressure. Development of mental health conditions such as depression or anxiety disorders. Burnout or complete exhaustion. Decreased productivity at work or school.

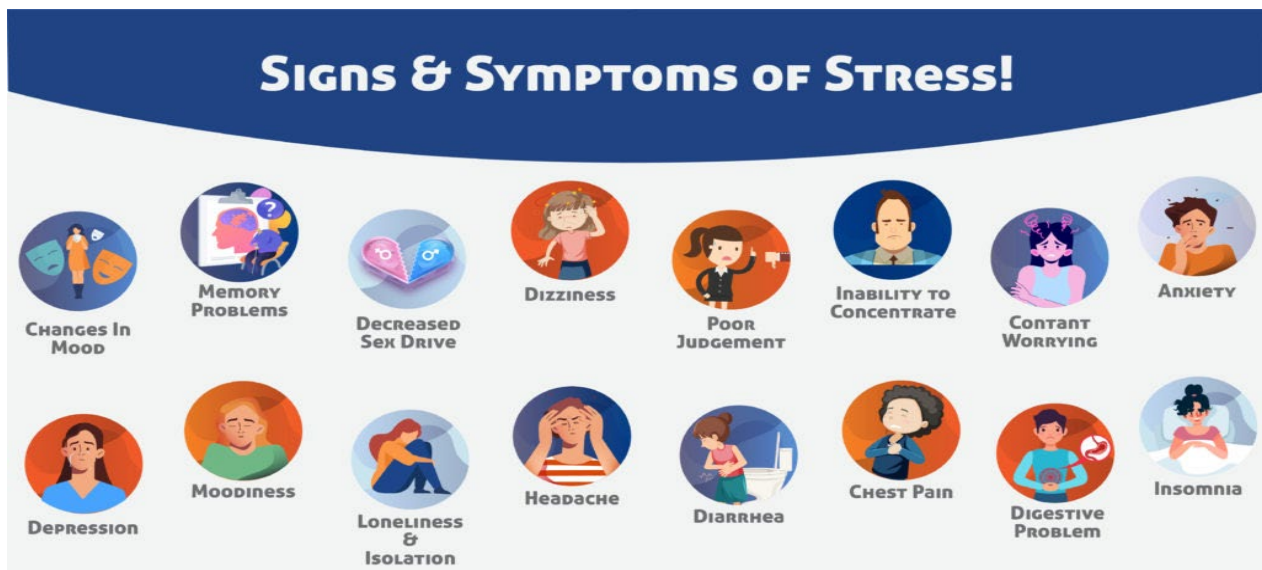



Figure 10.4: Signs and symptoms of stress

Signs and Symptoms of Stress			
Physical Symptoms	Thoughts	Behaviours	Feelings 
<ul style="list-style-type: none"> Headache Back/neck pain Heartburn/reflux Diarrhoea Irritable bowel syndrome Rapid heartbeat Sweaty palms High blood pressure Shortness of breath Weight gain or loss Cold or flu Fatigue 	<ul style="list-style-type: none"> Memory problems Lack of concentration Indecisiveness Confusion Lack of thought clarity Racing thoughts Negative self talk Escapism Decreased self esteem Self criticism Forgetfulness 	<ul style="list-style-type: none"> Irrationality Withdrawal Nervous habits (e.g. biting nails) Excessive exercise Alcohol and drug abuse Changes in eating and/or sleeping patterns Short temper 	<ul style="list-style-type: none"> General moodiness Anger Irritability Anxiety Depression Apathy Loss of enthusiasm Teariness Clumsiness

Adapted from The CSIRO Healthy Heart Program book by Manny Noakes and Peter Clifton, 2008

edublogs

Figure 10.5: Signs and symptoms of Stress

Stress Prevention and Management Techniques

Healthy lifestyle practices

1. **Regular exercise:** Physical activity helps release endorphins, which improve mood and reduce stress. Endorphins are chemicals produced naturally by the body. They are released by the brain and nervous system in response to stimuli like exercise or excitement. Endorphins are often referred to as the body's 'feel-good' chemicals because they create feelings of happiness that reduce stress and lessen pain.

Example: A 30-minute daily walk or any other physical activity session can help prevent the build-up of stress.

2. **Balanced diet:** Eating nutritious meals stabilises energy and mood. A balanced diet helps prevent stress by supporting the body's physical and mental well-being. Proper nutrition ensures that the brain and body function well, which enhances the body's ability to cope with challenges and reduces the likelihood of stress-related problems.

Eating a balanced diet with whole grains, fruits, vegetables, and lean proteins stabilises blood sugar levels, preventing mood swings, tiredness and irritability caused by spikes and drops in energy.

Example: Eating a breakfast with oatmeal, nuts, and any other whole grain like millet, maize, sorghum, wheat, brown rice, and fruits provides sustained energy throughout the morning. Skipping meals or consuming high-sugar snacks can lead to energy crashes and increased feelings of stress. Consume more fruits, vegetables and whole grains instead of sugary snacks.

3. **Sleep as a stress reducer:** Proper rest and adequate sleep help rejuvenate the mind and body to prevent stress. Sleep is important for the body to recover, regulate hormones and process emotions. All of these are important for effectively preventing, managing and reducing the build-up of stress. During sleep, the body decreases the production of cortisol, a primary stress hormone, while chronic lack of sleep causes increases in the cortisol levels, increasing stress.

Example: An individual who gets 7-8 hours of sleep before an exam, an interview or any other work feels calmer and more focused than one who stays up all night studying, planning or doing any other thing.

Adequate sleep improves emotional control and helps individuals respond more calmly to stressful situations. Sleep deprivation leads to heightened emotional reactions and irritability.

Example: After a good night's sleep, a person is more likely to handle workplace challenges calmly instead of reacting impulsively.

- a. **Sleep improves cognitive function:** Sleep allows the brain to rest and recharge, enhancing memory, problem-solving skills and decision-making. These cognitive benefits make it easier to manage stressful situations effectively.

Example: A well-rested individual can organise tasks efficiently, reducing feelings of being overwhelmed.

- b. **Sleep promotes physical recovery:** Sleep is essential for repairing tissues, strengthening the immune system and maintaining energy levels. Poor physical health due to a lack of sleep can exacerbate stress.

Example: Athletes who sleep adequately recover faster and feel less stressed before competitions.

- c. **Sleep balances hormones:** Adequate sleep helps regulate hormones like serotonin and dopamine, which are critical for mood stability and stress reduction.

Example: Consistent sleep patterns contribute to a positive mood and reduced anxiety, making it easier to face daily challenges.

- d. **Sleep boosts resilience to stress:** Sleep strengthens resilience by giving the mind and body the energy to cope with stressors. A sleep-deprived person is more likely to feel overwhelmed by minor issues.

Example: Parents who get enough sleep can manage the challenges of raising children more effectively than those who are constantly sleep deprived.

- e. **Sleep encourages relaxation and recovery:** The sleep cycle includes periods of deep sleep and REM (Rapid Eye Movement) sleep, during which the brain processes emotions and resets stress levels.

Example: Dreams during REM sleep help process unresolved emotions, reducing anxiety.

Practical Tips for Adequate Sleep

1. **Establish a sleep routine:** Go to bed and wake up at the same time every day.
2. **Create a relaxing environment:** Use dim lights, comfortable bedding, and reduce noise.
3. **Avoid stimulants before bedtime:** Limit caffeine, alcohol and screen time in the evening.
4. **Engage in relaxation techniques:** Practise meditation or light reading before bed.

Time Management

1. **Prioritising tasks:** Focus on urgent and important tasks first. Prioritising tasks helps prevent stress by allowing individuals to focus on what is most important first, manage time effectively, and avoid feeling overburdened. It creates a clear path to accomplish goals without unnecessary pressure or confusion.

Reduces feeling overburdened: By breaking down a large workload into smaller, manageable tasks, prioritising prevents feelings of being busy. It helps focus on completing one thing at a time rather than worrying about everything at once.

Example: A learner with multiple assignments can list tasks in order of their deadlines, completing the most urgent first to reduce last-minute panic. Also, they can use a to-do list or planner to organise daily activities. Again, a learner preparing for exams or a quiz can prioritise studying key subjects over spending excessive time on extracurricular activities.

2. Avoiding procrastination

- a. *Avoiding procrastination:* Avoiding procrastination helps prevent stress by promoting timely action, reducing last-minute pressure, and ensuring that tasks are completed efficiently and effectively. When procrastination is avoided, individuals maintain control over their responsibilities, leaving room for relaxation and better mental well-being.
- b. *Reduces last-minute pressure:* Procrastination often results in rushing to meet deadlines, leading to anxiety and stress. Tackling tasks early eliminates the stress associated with time constraints.

Example: A learner who starts preparing for exams weeks in advance avoids the sleepless nights and stress of cramming.

Example: Completing one section of an assignment each day instead of rushing the night before.

- c. *Improves time management:* Taking action immediately ensures that tasks are completed on time, allowing for better organisation and planning.

Example: An office worker who answers emails daily avoids the stress of dealing with an overflowing inbox before an important presentation.

- d. *Enhances focus:* Avoiding procrastination allows individuals to concentrate on one task at a time, reducing the chaos of juggling multiple unfinished tasks.

Example: A chef who prepares ingredients ahead of time can focus entirely on cooking during service hours, reducing the stress of multitasking.

- e. *Prevents task accumulation:* Procrastination can cause tasks to pile up, creating an overwhelming workload. Completing tasks as they come prevents this buildup, making workloads manageable.

Example: A teacher who grades assignments weekly avoids the stress of grading an entire term's worth of work at once.

- f. *Builds confidence and motivation:* Completing tasks promptly provides a sense of accomplishment, boosting self-confidence and motivating individuals to continue being productive.

Example: A writer who drafts chapters daily feels motivated by progress rather than discouraged by an approaching deadline.

- g. *Improves quality of work:* Avoiding procrastination allows more time for reviewing and improving work, resulting in better outcomes and less stress about errors or low quality.

Example: A graphic designer who starts early on a project has time to revise their work, reducing stress about client feedback.

- h. *Creates time for relaxation:* Completing tasks ahead of time frees up hours for self-care, hobbies, and relaxation, which are crucial for stress management.

Example: A learner who finishes an essay early can spend the weekend engaging in leisure activities instead of stressing over the deadline.

3. Practical tools for prioritising tasks

To-do lists: Write down tasks in order of importance. This can be done by categorising tasks using labels like ‘urgent’, ‘important’ and ‘low priority’.

Or

Divide tasks into four quadrants:

Urgent and important: Do it immediately.

Important but not urgent: Schedule it for a later date.

Urgent but not important: Delegate, ask someone to do it or handle it.

Neither urgent nor important: Eliminate, take it out of the list of things to be done.

Or

Use a time blocking technique: Allocate specific blocks of time to perform each task. Allotting more time to high-priority tasks and starting with them first.

Positive Thinking

1. **Positive thinking:** Positive thinking helps prevent stress by fostering a more optimistic outlook, improving coping mechanisms, and enhancing overall emotional well-being. It helps individuals approach challenges with confidence and resilience, reducing the likelihood of becoming overwhelmed. Practising optimism helps individuals reframe challenges.

Example: Instead of thinking, I cannot do this, say, I will try my best and learn from the experience.

2. **Reframes negative situations:** Positive thinking encourages viewing challenges as opportunities for growth rather than impossible problems. This reduces feelings of helplessness and stress.

Example: A learner who views a difficult exam as a chance to improve their knowledge feels motivated rather than anxious.

3. **Enhances problem-solving skills:** Hopefulness allows individuals to focus on solutions rather than dwelling on problems. This proactive approach helps reduce stress by creating a sense of control in individuals.

Example: An employee facing a missed deadline to perform a task focuses on ways to recover rather than panicking about the mistake.

4. **Boosts resilience:** Positive thinking strengthens the ability to bounce back from setbacks, reducing the impact of stressful situations.

Example: An athlete who loses a competition views it as a learning experience, motivating them to train harder for the next one.

5. **Reduces negative emotional reactions:** Positive thinkers are less likely to experience intense negative emotions like anger, frustration or fear, which are major contributors to stress.

Example: A driver stuck in traffic listens to music and enjoys the moment rather than becoming irritated by the situation.

6. **Improves physical health:** Positive thinking reduces the production of stress hormones like cortisol, which can lead to improved immune function and overall physical health. A healthy body is less susceptible to stress.

Example: A person who stays optimistic during an illness has better recovery outcomes compared to someone consumed by worry.

7. **Encourages healthy relationships:** Positivity fosters better communication and stronger social bonds, which provide emotional support during stressful times.

Example: A friend who remains hopeful and expectant during tough times can uplift and reassure others, reducing collective stress.

8. **Promotes relaxation and joy:** Focusing on the good aspects of life releases feel-good hormones like endorphins, promoting relaxation and reducing stress levels.

Example: Writing, recording or journaling about positive experiences boosts mood and lowers anxiety.

Practical strategies for positive thinking

1. **Practice gratitude:** Reflecting regularly on things one is thankful for, shift focus from problems to blessings.

Example: Writing down three good things that happened each day.

2. **Use affirmations:** Repeating positive statements to challenge and replace negative thoughts.

Example: I can handle this situation successfully.

3. **Focus on strengths:** Identifying and leveraging personal strengths to tackle challenges confidently helps prevent stress.

Example: I am a good organiser, a good athlete, a good learner, a good boss, and I will use this skill to manage my tasks.

4. **Reframe negative thoughts:** Replace negative self-talk with constructive and positive alternatives.

Example: Instead of I cannot do this, just say, This is challenging, but I can learn and improve.

Building Support Systems

Surround yourself with supportive people: Building support systems helps prevent stress by providing emotional, social and practical assistance during challenging times. A strong network of supportive individuals creates a sense of belonging, fosters resilience and offers resources to cope with stress effectively. Hence, spend time with supportive and encouraging people who uplift spirits during difficult times and try to practise staying in the present moment and letting go of worries about the future or regrets about the past.

1. **Provides emotional support:** Talking to supportive friends, family, or peers helps relieve stress by sharing burdens and gaining reassurance. This reduces feelings of isolation and provides a sense of comfort.

Example: A learner overwhelmed with studies feels relieved after discussing their worries with a friend who encourages and empathises with them.

2. **Encourages problem-solving:** A support system offers different views and solutions to problems, reducing the stress of trying to handle everything alone.

Example: An entrepreneur facing a business challenge consults a mentor, who suggests practical steps to resolve the issue.

3. **Fosters a sense of belonging:** Feeling connected to others prevents loneliness, a major contributor to stress. Being part of a group or community can boost self-esteem and emotional well-being.

Example: Joining a fitness group helps an individual form bonds while engaging in activities that reduce stress.

4. **Provides practical assistance:** Support systems can offer tangible help, such as assisting with tasks, financial aid, or childcare, which reduces the burden on an individual.

Example: A single parent receives help from family members to babysit their children, easing the pressure of juggling work and parenting.

5. **Acts as a buffer against stressful events:** During crises, support systems act as a safety net, reducing the intensity of stress. Knowing help is available makes challenges feel less discouraging.

Example: A person facing job loss receives emotional and financial support from friends, helping them navigate the transition.

6. **Promotes accountability:** A supportive network can encourage individuals to stay on track with healthy habits that prevent stress, such as exercise or time management.

Example: A workout buddy motivates someone to stick to their fitness routine, which helps reduce stress.

7. **Improves coping skills:** Observing how others in a support system manage stress inspires effective coping strategies that improve resilience.

Example: A college learner learns from a classmate how to use study schedules to handle academic pressure.

Practical steps to build support systems

1. **Nurture existing relationships:** Strengthen bonds with family and friends by spending quality time together.

Example: Regular family visits, visiting places of interest together or weekly calls with close friends.

2. **Join groups and communities:** Join clubs or community support groups, or community activities to meet like-minded people.

Example: Joining a virtuous ladies' or faithful gents' club or a local book group.

3. **Seek professional help when needed:** Establish connections with therapists, counsellors or mentors who can provide expert guidance during stressful times.

4. **Be open and communicative:** Share feelings and challenges honestly to build trust and deepen relationships.

Example: Letting a friend know when feeling down and weary so they can offer support.

5. **Offer support to others:** Reciprocal relationships foster trust and reliability, creating a stronger network.

Example: Helping a friend with their task shows a person is dependable, encouraging them to support in return.

Negative Ways of Managing Stress

Negative ways of managing stress are unhealthy behaviours or coping strategies that may provide temporary relief but can have long-term damaging effects on the physical, mental and emotional well-being of individuals who use them. Examples of unhealthy ways of managing or coping with stress are shown below.

Negative behaviour	What it involves	Why is it harmful?
Substance abuse	Using alcohol, tobacco or any other drug to cope or temporarily escape feelings of stress. This includes recreational drug use, excessive drinking or relying on substances to manage stress.	Although substances may provide short-term relief for individuals who use them, they can lead to addiction, long-term physical health problems (e.g., liver damage from alcohol, lung issues from smoking) and mental health challenges such as depression or anxiety. They also impair decision-making, leading to harmful consequences like accidents or strained relationships.

Overeating or undereating	Some people turn to food more for comfort. That is consuming high-calorie or sugary snacks in excess (binge eating), while others may lose their appetite and skip meals entirely.	Overeating leads to weight gain, obesity and related health issues such as diabetes or heart problems, whereas undereating deprives the body of essential nutrients, weakens the immune system and causes fatigue or malnutrition which disrupt long term physical and emotional health.
Isolation and avoidance	Withdrawing from social interactions, friends, family or responsibilities to avoid confronting stressors or stressful situations. Individuals may avoid stressful conversations, events or tasks altogether.	While occasional privacy can be restorative, prolonged isolation increases loneliness, anxiety and depression. Avoiding problems does not resolve them, but often worsens the situation or leads to missed opportunities for help or resolution.
Aggression	Expressing stress through anger or violence towards others. This is expressed by yelling at others, physical confrontations or passive-aggressive behaviour, which harms relationships and worsens stress.	Lashing out at others damages relationships, creates tension, and leads to guilt or regret. It can alienate support systems and escalate conflict, adding to the stress rather than alleviating it.
Excessive screen time	Spending hours on social media, playing video games or always watching TV shows as a form of distraction.	While it may temporarily take the mind off stress, excessive screen time disturbs sleep patterns, reduces physical activity and isolates individuals from meaningful social interactions. It can also lead to feelings of inadequacy or anxiety and reduce productivity, especially when comparing oneself to others on social media.
Risky behaviours	Engaging in impulsive or reckless activities such as gambling, gaming, unsafe driving or risky sexual behaviours to distract from stress or seek an adrenaline rush.	These actions lead to serious consequences, such as financial loss, physical harm or sexually transmitted infections (STIs). Instead of reducing stress, these behaviours often add new sources of worry or regret.

The benefits of preventing stress

Preventing stress offers numerous physical, emotional and social benefits, contributing to overall well-being.

1. Physical benefits

- a. **Improved health:** Reduces the risk of stress-related illnesses such as hypertension, heart disease, and diabetes.
- b. **Better sleep:** Preventing stress enhances the quality and duration of sleep, leading to improved energy levels.
- c. **Boosted immune system:** A stress-free body is more resilient to infections and diseases.
- d. **Increased energy levels:** Preventing stress reduces fatigue, leaving you more energised for daily activities.
- e. **Fewer aches and pains:** Reduces physical tension, headaches, and muscle pain often caused by stress.

2. Emotional benefits

- a. **Enhanced emotional stability:** Preventing stress reduces mood swings, irritability, and feelings of overwhelm.
- b. **Increased happiness:** Supports a positive outlook on life and greater emotional fulfilment.
- c. **Better focus and mental clarity:** Allows for improved decision-making and problem-solving abilities.
- d. **Reduced anxiety and depression:** Helps maintain mental health by keeping negative thoughts in check.
- e. **Social Benefits:** Helps maintain mental health by providing support and guidance during times of stress.
- f. **Improved relationships:** A calm and balanced individual communicates better, resolves conflicts effectively, and fosters stronger bonds.
- g. **Better teamwork:** Stress prevention supports collaboration and reduces misunderstandings in group settings.
- h. **More enjoyable social interactions:** A stress-free mindset promotes relaxation and fun during social activities.

3. Performance and productivity benefits

- a. **Enhanced productivity:** With less stress, focus and efficiency improve at school, work, and daily tasks.
- b. **Improved time management:** Stress prevention encourages planning and prioritisation, leading to better use of time.
- c. **Greater creativity:** A relaxed mind is more innovative and open to new ideas.

4. Long-term benefits

- a. **Prolonged life expectancy:** Chronic stress can shorten lifespan, so its prevention promotes longevity.
- b. **Resilience:** Preventing stress fosters the ability to cope with future challenges more effectively.
- c. **Healthier lifestyle choices:** A stress-free individual is more likely to eat well, exercise, and avoid harmful habits like smoking or excessive drinking.

Incorporating stress prevention into daily life is essential for holistic well-being and success in all areas of life.

Activity 10.5 Signs and symptoms of stress

1. In small groups, brainstorm as many signs and symptoms of stress as you can.
2. How do you know when you are stressed or when others are stressed?
3. Share your ideas with your classmates.
4. In small groups, prepare a short skit on one of the following.
 - a. You have an exam tomorrow but have not studied.
 - b. You are running late for an important event.
 - c. Your teacher gives you extra homework after a busy day.
 - d. You disagreed with a friend.
5. In your skit, focus on how someone might react physically, emotionally or behaviourally in the scenario.
 - a. For example:
 - b. Physical reactions: Headache, rapid breathing, sweating, etc.
 - c. Emotional reactions: Anxiety, anger, sadness, etc.
 - d. Behavioural reactions: Avoiding tasks, snapping at others, eating excessively, etc.
6. Present your skit to the rest of your class. Did they correctly guess the signs of stress presented?

Activity 10.6 Avoiding and managing stress

Complete the following activities in groups.

1. Discuss and write different ways or actions you can take to avoid stress.
2. Use a scenario that you have been assigned in class, or pick one of the scenarios from below:

- a. Preparing for an exam
- b. Organising an event
- c. Managing schoolwork and chores
3. For your scenario, create a simple planner or to-do list to manage your time effectively and avoid potential stress related to the situation.
4. Present your plans to your classmates and discuss how you can improve or adapt them.

Top tip: Focus on setting realistic goals, breaking tasks into smaller steps and tackling one task at a time to reduce stress.

5. In a group, discuss the following questions:
 - a. What is the role of regular exercise, a balanced diet and sufficient sleep in maintaining physical and mental health?
 - b. What are your favourite healthy habits?
 - c. How do these habits help to reduce stress?
 - d. Is it OK to say no to additional responsibilities?
 - e. With your group, create and present a short roleplay for the following scenario. In this scenario, your task is to say 'no' as politely as possible. Remember to give reasons for your response.

Scenario: A friend has asked you to hang out when you know they have unfinished homework.

6. Your group is going to create a **Stress Management Toolkit**. *A Stress Management Toolkit is a collection of strategies, techniques and resources designed to help individuals effectively to cope with and reduce stress.*
7. Use the internet to research various strategies for managing stress. Some examples to guide your search include:
 - a. Relaxation techniques.
 - b. Physical activities.
 - c. Creative outlets.
 - d. Social strategies.
 - e. Time-management techniques.
8. Identify the items and strategies you will include in your toolkit. You can do this by drawing pictures, making or creating a list of items. Include a brief description on how to use each item or strategy (For example, listen to calming music for 15 minutes to relax after a stressful event).
9. Integrate one or more healthy lifestyle habits into your kit, such as eating balanced meals with nutrient-rich foods, etc.
10. Present your Stress Management Toolkit to the class.
 - a. In your presentation, explain the following:

- b. The different stress management strategies included in your kit and why you chose them.
 - c. The benefits you expect from integrating these strategies into your daily life.
 - d. The role of healthy eating, regular exercise, and good sleep in stress prevention and management.
11. In your group or a full class discussion, make suggestions on how wellness can be integrated into your classroom or school.
 12. Reflect on the different strategies you have learned about. Which ones do you find the most appealing or think will be the most effective? Make a note of these in your notebook.

Take-Home Activity

1. Reflect on the different strategies you have learned about. Which ones do you find the most appealing or think will be the most effective?
2. Using a situation that you are currently finding stressful, write your own positive affirmations to help you work through the challenge. For example, *I can handle this; every problem has a solution, so I can solve this, etc.*
3. Make a note of your experience with the challenge and the actions you will take to manage the stress.
4. Reflect on the different strategies you have learned about. Which ones do you find the most appealing or think will be the most effective?

EXTENDED READING

- <https://www.helpguide.org/mental-health/stress/stress-management>.
- <https://www.psychologymadeeasy.in/posts/what-is-stress-definition-types-causes-symptoms-effects-on-health-and-stress-management>.
- <https://www.verywellmind.com/stress-and-health-3145086>.

REVIEW QUESTIONS 10

1. What is stress?
2. Name three common sources of stress for teenagers.
3. Name three physical symptoms of stress.
4. How can deep breathing help manage stress?
5. List two healthy coping strategies for stress management.
6. Why is it important to have a support system when dealing with stress?
7. State three actions that can be effective in preventing stress.
8. What role does communication play in managing stress?
9. Why is it important to take breaks during stressful times?
10. How can physical activity impact stress levels?

BIBLIOGRAPHY

- American Psychological Association (2024). The impact of chronic illness on the family.
- Centers for Disease Control and Prevention (2024). Bacteria and foodborne illness
- Centers for Disease Control and Prevention (2024). Caregiving: A public health priority.
- Centers for Disease Control and Prevention (2024). Chronic diseases in America.
- Centers for Disease Control and Prevention (2024). Fungal diseases.
- Centers for Disease Control and Prevention (2024). Parasites – biology.
- Domfeh, C., Karbo, J., & Ogah, J. (2015). An introduction to physical education. CCE Publications. Pp 140-146.
- El-Beshbishi, S. N., Ahmed, N. N., Mostafa, S. H., & El-Ganainy, G. A. (2012). Parasitic infections and myositis. *Parasitology research*, 110(1), 1–18. <https://doi.org/10.1007/s00436-011-2609-8>
- Ghana New Updates (2024): 2023 African Games: Here're the Official Ticket Prices for Games; <https://ghananewsupdates.com/2023-african-games-herere-the-official-ticket-prices-for-games/>
- Ghana Olympic Committee (2019); Ghana Table Tennis President Promises to Deliver Outstanding World Tournament; <https://ghanaolympic.org/?item=3727>
- Ghana Table Tennis Association (2019) via Facebook: https://web.facebook.com/578067656023979/photos/a.578425905988154/582742568889821/?type=3&_rdc=1&_rdr
- Gracia, L.S. (2016). Diagnostic medical parasitology. ASM Press.
- KEEA Education Directorate (2013). 3-Day P.E workshop for JHS Teachers.
- Mayo Clinic. (2024). Parasitic infections.
- Mayo Clinic. (2024). Parasitic worms.
- Microbeonline.com. (2024). <https://microbeonline.com/parasitic-infections-source-of-infection-mode-of-transmission-and-prevention/>
- Microbiology Society. (2024). What are bacteria?
- National foundation for infectious diseases (2024). <https://www.nfid.org/infectious-disease/coronaviruses/>
- National Institute of General Medical Sciences (2024). Bacteria.
- National Institute of Mental Health (2024). Chronic illness & mental health.
- National Institutes of Health (2024). Understanding fungi.
- New Vision (2023): https://www.newvision.co.ug/category/ebyemizannyo/ttiimu-ya-ttena-yoku-mmeeza-etuuse-e-djibouti-BUK_132538
- NHS.uk. (2024). <https://www.nhs.uk/conditions/athletes-foot/>
- 24.Researchgate.net.(2021).https://www.researchgate.net/publication/357476742_Essential_facts_about_Covid19_the_disease_the_responses_and_an_uncertain_future_For_South_African_learners_teachers_and_the_general_public/figures?lo=1
- Rockymtnfootandankle.com. (2024). <https://rockymtnfootandankle.com/treat-foot-fungus/>
- Sastry A.S. & Bhat S. (2014) Essentials of medical parasitology. Jaypee brothers' medical publishers (P) Ltd

- SDSC (2024); National Para Table Tennis Championships 2024; https://sdsc.org.sg/sdsc_events/national-para-table-tennis-championships-2024/
- Source: National Sports Authority (2024); <https://sportsauthority.gov.gh/ghana-table-tennis-association-2/>
- Tako (2021); Training Sessions are Ongoing at Edudrive Table Tennis in Ghana; <https://takobypsf.com/en/training-sessions-are-ongoing-at-edudrive-table-tennis-in-ghana/>
- The Suburban Table Tennis Association, Mumbai (2022); <https://tsttamumbai.org/blog/165815203563/service-strategies-in-table-tennis>
- World Health Organization (2023). Global health estimates.
- World Health Organization (2023). Mental health and covid-19.
- World Health Organization (2023). The economic impact of chronic diseases.
- World Health Organization (2024). Parasites.
- World Health Organization (2024). Parasitic infections.

GLOSSARY

Adaptability	Refers to the ability to adjust to a new environment or condition.
Adaptive immunity	A specialised immune response that develops over time in response to specific pathogens.
Adjuvant	A substance added to a vaccine to enhance the body's immune response.
Aerobic capacity	The maximum capacity amount of oxygen that an individual can utilise during intense exercise.
Aerobic fitness	The ability of the cardiovascular and respiratory system to supply oxygen to the muscles during prolonged physical activities.
Aggressive	Taking control of the game with powerful and precise strokes to dominate the opponent.
AIDS	Acquired Immune Deficiency Syndrome.
Antibody	A protein produced by the immune system to neutralise or destroy foreign substances like bacteria and viruses.
Antigen	A substance (often part of a virus or bacteria) that triggers an immune response, causing the body to produce antibodies.
Aspirations	The hopes, dreams and goals that a person strives to achieve in their lives.
Acute stress	A brief and immediate reaction to a specific threat, challenge, or demand. It triggers the body's 'fight-or-flight' response, resulting in temporary physical and psychological changes such as a rapid heartbeat, increased alertness, and a surge of energy.
Bacteria	Single-celled organisms that can thrive in diverse environment.
Best-of-five sets	A match format where the first team to win three sets (out of five) wins the match.
Booster shot	An additional dose of a vaccine given periodically to "boost" the immune system's response and extend immunity.
Bad stress (Distress)	Stress characterised by anxiety and unpleasant feelings which decrease ability or performance. Negative stress is perceived within one's coping abilities. When an individual thinks a situation or a task is beyond their skills and capabilities, this can cause bad stress.
Cardiovascular endurance	The ability of the heart, lungs and blood vessels to supply oxygen to the muscles during prolonged physical activity.
Casualty	A person injured or harmed as a result of an accident or conflict.

Causative agent	Organism or factor causing a specific disease.
Cognitive function	Mental processes that help acquire knowledge, process information, and make decisions.
Communal traditions	Practices and customs shared by a group, reflecting cultural or social identity.
Consecutively	Occurring one after another without interruption.
Contraindication	A specific situation or condition where a vaccine should not be given because it may harm the individual (e.g., certain allergies or medical conditions).
Coordinated movements	The ability to control the body's movements in a smooth and efficient manner.
Crouch	Means to bend down low, often by bending the knees and lowering the body towards the ground.
Cultural heritage	The legacy of a group or society that are inherited from past generations, preserved in the present, and passed down to future generations.
Cultural identity	Sense of belonging to a culture or group.
Customs	Traditional practices, behaviours, or conventions followed by a particular group of people, community, or society over a long period.
Chronic stress	A long-term state of emotional or physical strain caused by ongoing challenges or pressures that feel overwhelming. This type of stress negatively affects a person's physical, mental and emotional well-being. It occurs when an individual faces continuous pressure without adequate relief or recovery periods.
Defensive	Strategic approach focused on returning the opponent's shots or counter opponent's attack while minimising mistakes.
Dominant hand	The term "dominant hand" refers to the hand that a person naturally prefers to use for a task that requires fine motor skills.
Dynamic	Refers to something that is constantly changing, active or energetic.
Effectiveness	How well a vaccine works in the real world, outside of controlled trials.
Efficacy	The ability of a vaccine to produce the desired immune response and prevent disease under ideal conditions (e.g., in clinical trials).
External stressors	pressures or challenges that arise from factors outside an individual; they often stem from their environment or interactions with others.
Fact	The term "facts" refers to pieces of information that are objectively true and can be verified through evidence or reliable sources.

Federation	An organisation that governs and oversees a specific sports or group of sports at the national or international level.
Folklore	The traditional beliefs, customs, stories, groups and practices of a particular culture.
Forehand stroke	Is a stroke used to hit the ball with the front of the racket facing the direction of the shot.
Fundamental	Essential aspect of a sport.
Generations	Generally, refers to groups of people born and living around the same time.
Generative factors	Underlying causes that produce observable patterns.
Genetics	Is the study of genes, genetic variations, and heredity in living organisms.
Grip	How a player holds the racket.
Good stress (Eustress)	A positive form of stress that has a beneficial effect on health because it brings excitement and good feelings.
Herd immunity	When a high percentage of the population is immune to a disease (usually through vaccination), providing indirect protection to those who are not immune.
Immobilise	To prevent movement or to make something unable to move. In a medical or first aid context, it often refers to stabilising an injured body part, such as a limb or joint, to prevent further injury and facilitate healing.
Immune memory	The immune system's ability to "remember" a pathogen after exposure, allowing for a faster and stronger response upon re-exposure.
Immunity	Protection against a particular disease. Immunity can be acquired through vaccination or by recovering from the disease.
Inactivated vaccine	A type of vaccine made from pathogens that have been killed or inactivated, so they cannot cause disease.
Innate immunity	This is the body's first line of defense against pathogens, providing immediate but non-specific protection.
Innovative movements	Creative and new ways of moving that enhance gameplay, making it more engaging, challenging, or fun.
Intervention	The act of becoming involved in a situation to alter the outcome or to improve conditions.

Internal stressors	Stresses that originate from within an individual. They normally stem from an individual's thoughts, feelings, or physical condition.
Involuntary	Actions or processes that occur without conscious control or choice.
Live-attenuated vaccine	A vaccine containing a weakened form of the live pathogen that induces immunity without causing illness.
Mental agility	The ability to think quickly and adaptively, allowing a person to respond effectively to new information, challenges, or changes in their environment.
Mental toughness	A person's ability to stay resilient, focused and determined, especially when facing challenging situations.
Mixed-gender	Situations, activities or environments that involve individuals of different genders (males and females) participating together.
Mortality	This refers to the death rate, which is the number of deaths in a given population during a specific period.
Motor skills	The abilities required to control bodily movements and actions.
Myth	The term myth refers to a widely held but false belief or ideas.
Offensive	Aggressive strategies to dominate the opponent.
Origin	The source or starting point of something.
Outbreak	A sudden increase in cases of a particular disease in a specific area or population.
Parasites	Organisms that live on or in a host, obtaining nutrient at the host's expense
Pathogen	A microorganism (such as a virus, bacteria, or fungi) that can cause disease.
Pathogens	Microorganisms that can cause disease in their host organism. Examples include bacteria, viruses, fungi, or parasites.
Physical fitness	Refers to a person's overall health and ability to perform daily tasks and physical activities effectively, without excessive fatigue.
Physical skills	The abilities and competencies that involve the use of one's body to perform tasks.
Pessimistic	A tendency to see the worst aspect of things or believe that the worst will happen.
Procrastinate	To delay or postpone doing something, often by avoiding tasks or responsibilities.

Racket	It is also known as paddle or bat, is a crucial piece of equipment essential for playing the sport.
Rally	Is a collective name given to a sequence of back-and-forth shots between players, without a point.
Randomly	Something that occurs without a specific pattern, plan or purpose.
Reflexes	A person's quickness or responsiveness in reacting to situations or challenges.
Resilience	An individual's ability to withstand stress, overcome obstacles and continue to thrive despite challenges.
Respiratory paralysis	This is a condition in which the muscles involved in breathing become weak or paralysed, leading to difficulty in breathing.
Responsiveness	The ability or tendency to react quickly and positively to a situation.
Rinse	The term "rinse" generally means to wash something lightly or briefly, often with water, in order to remove dirt, soap, or other substances.
Reciprocal relationship	A relationship where both parties give and receive in a balanced way. It involves mutual exchange, cooperation, and benefit.
Rejuvenate	To make someone or something feel young, fresh, or full of energy again.
Side effect	Any unintended effect of a vaccine, which can range from mild (e.g., soreness at the injection site) to more severe, although severe reactions are rare.
Social connections	The relationships and interactions we have with others.
Sterile material	Items that have been treated to eliminate all forms of microorganisms, including bacteria, viruses, fungi, and spore
Stigmatisation	This refers to the process of marking or branding individuals or groups as socially unacceptable or inferior
Stimuli	Any external or internal factor that provoke a response or reaction in an organism.
Strenuous	Activity that requires a lot of efforts, energy, or exertion.
Stroke	Refers to the action of hitting the ball with the racket.
Swivel	To turn or rotate around a point in a smooth, controlled manner.
Symptoms	Indications of a disease, condition, or problem. They are the changes in the body or mind that suggest something is wrong.

Trauma	A deeply disturbing experience that can have a permanent influence on an individual's emotional and psychological well-being.
Triggers	Factors causing symptoms to appear.
Topspin	Is a type of shot that causes the ball to rotate forward as it travels through the air.
Traditional games	Activities or games that have been passed down through generations within a culture or community.
Transition	The process of changing from one state, condition or stage to another.
Vaccine Preventable Diseases (VPDs)	Diseases that can be prevented through vaccination, such as measles, polio and influenza. Vaccine schedule: A series of recommended vaccinations, often starting in infancy, designed to provide immunity over time against various diseases.
Vaccine	A biological preparation that provides immunity to a specific disease. Vaccines often contain weakened or inactivated parts of a pathogen to stimulate an immune response.
Variation	Different types of spins and strokes a player can use to disrupt their opponent's rhythm and strategy.
Violate	To break or infringe upon a law, rule, agreement or code of conduct.
Viruses	Tiny infectious agents that reproduce only inside host cells.

ACKNOWLEDGEMENTS



Ghana Education
Service (GES)



List of Contributors

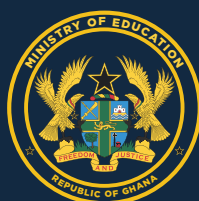
Name	Institution
Albert Sackey	Nsein Senior High School
John Benedict Nyarko	Adisadel College

This book is intended to be used for the Year Two Physical Education and Health (Core) Senior High School (SHS) Curriculum. It contains information and activities to support teachers to deliver the curriculum in the classroom as well as additional exercises to support learners' self-study and revision. Learners can use the review questions to assess their understanding and explore concepts and additional content in their own time using the extended reading list provided.

All materials can be accessed electronically from the Ministry of Education's Curriculum Microsite.



[Scan the QR Code to visit the website]



Ghana Education
Service (GES)

