

SECTION

1

HEALTH AND
WELLNESS



HEALTH EDUCATION

Health and Wellness

INTRODUCTION

This section focuses on our health and wellness. Health and wellness are essential components for every human being because they help us live a balanced life and appreciate how to improve our overall quality of life. In this section, we will learn practical strategies for making healthier choices in our daily lives and explore how ignoring these important behaviours can affect our well-being. We will have interactive discussions on healthy eating, regular exercise, and building supportive relationships as well as how to set realistic goals and take steps to achieve them. We will also look at what behaviours to avoid in order to remain in good health and overall well-being.

Health and wellness have interrelated components. We will discuss how these components contribute to health. We will practically demonstrate the essence of healthy diet and nutritional practices in the promotion of physical health and provide workable advice to young adults, the aged, and the special population (pregnant women, lactating mothers, convalescents, vegetarians, sports men and women as well as persons with specific health conditions) on how to choose healthy diets that are well-balanced. We will discuss why eating healthily improves well-being and share our experiences so we can learn from and support each other in our journey towards better health.

At the end of this section, you should be able to:

- Explain the concept of health and wellness.
- Discuss the various components of health and wellness
- Explain healthy eating behaviour and how that promotes physical health.
- Discuss the role of nutrition in healthy living.
- Discuss the role of diet in healthy living

Key Ideas

- Health is a complete **state** of physical, social and emotional well-being not a mere absence of disease or infirmity.
- Wellness involves the **processes** one must go through to attain the state of health.
- A risk factor is an **action** or a **course** that increases one's chances of having an illness or injury.
- Health and wellness can be broken down into various areas of your daily living.
- **Physical health and wellness** involve your body's function and your fitness levels.

- **Mental/Intellectual health and wellness** is the state of the mind, our thoughts and how they control our behaviours.
- **Emotional health and wellness** are the state of your feelings/emotions and the ability to cope with stress, express your feelings and manage your emotions effectively.
- **Social health and wellness** are the state of your relationships, including your ability to interact with others, communicate effectively as well as build and maintain healthy relationships.
- **Environmental health and wellness** relate to the state of your surroundings, including your home, work, and leisure environments and how they affect you.
- **Financial health and wellness** are the state of your money and includes your ability to save, manage your money and make sound monetary decisions.
- **Occupational health and wellness** are the preparing and making use of your gifts, skills and talents to gain purpose, happiness and enrichment in your life.
- **Spiritual health and wellness** are the state of your soul, including your ability to find meaning and purpose in life, connect with a higher non-human power and live a life of values and principles.
- **Healthy eating** refers to eating a variety of nutritious foods in appropriate portions to maintain overall health and well-being.
- **A healthy diet** is one that offers the body the vital nutrients it needs to perform at its best and promote general wellbeing.
- **Physical health** highlights the well-being of the body and its proper functioning relative to the ability to perform daily tasks and live comfortably.
- Nutrition is the study of nutrients in food, their use in the body and how they affect the body's growth, development and overall health. **Nutrition** therefore is the process of providing the body with the necessary nutrients it needs to function properly and stay healthy.
- **Essential nutrients** are substances that our bodies require for proper functioning but cannot be produced on their own.
- **Non-essential nutrients** are nutrients that the body can produce by itself in sufficient amounts for normal functioning.
- **Diet** is the sum of food consumed by a person. A **well-planned nutritious diet** that meets an athlete's nutritional requirements can enhance sports performance and speed up muscle repair.

THE MEANING OF HEALTH

Health is not just the absence of diseases and infirmity but a complete state of physical, cognitive and social well-being.

Health focuses on the physical body and whether it functions well or not. It involves what you eat and the way you eat it as well as what you do with your body.

Good health means having a balance in the following areas: social, physical, emotional, mental, and spiritual (SPEMS). Each of these areas impacts our overall health and well-being.



Fig 1.1 A healthy-looking family living a happy life

Healthy Living

This involves making conscious and positive choices that promote overall wellness and improve quality of life. It is a proactive approach to maintaining and improving health. For example, setting realistic goals and making the effort to achieve them.



Fig 1.2 The need for sleep

The Meaning of Wellness

Wellness is the process of selecting lifestyle activities that lead to a state of good health. Each individual is responsible for the choices that contribute to an outcome of total wellbeing including managing risk factors and spiritual practices.

Wellness is linked to achieving a good lifestyle irrespective of being healthy or having chronic illness. The aim of wellness is living life fully.



Fig 1.3 Wellness produces a joyful life



Fig 1.4 Wellness gives the ability to perform life's activities easily

The Concept of Health and Wellness

This refers to a state of actively pursuing a lifestyle that helps attain a holistic wellbeing of a person. It consists of soundness of mind, body, and spirit as well as presence of a positive capacity to develop one's potential.



Fig 1.5 Having regular medical check-ups



Fig 1.6 Study group

Risk Factors that Affect Health and Wellness

These are actions that increase the chances of having an illness or injury. They are generally the attitude, behaviours and practices that do not promote health and wellness. As learners, can you think of any of these actions or behaviours?

Behaviours that do not Promote Good Health

- Drinking alcohol: Alcoholic intake can cause liver damage, stroke, heart diseases, cancer, etc.
- Smoking: A major risk factor for lung cancer and cardiovascular diseases.
- Unprotected sex: This can lead to the contraction and spread of sexually transmitted diseases and infections.
- Eating unhealthy, processed and unwholesome foods: This leads to an increased risk of illnesses such as obesity, high blood pressure and diabetes.
- Physical inactivity: Lack of regular exercise can lead to conditions such as obesity and heart disease.



Fig 1.7 Bad eating habits

Behaviours that do not Promote Wellness

- Living in an unclean environment.
- Lack of physical activity.
- Not maximising weeknights and weekends.
- Spending a large amount of time watching screens; e.g. televisions, mobile phones, laptops and tablets.
- Comparing self to others.
- Delay in executing tasks.
- Worrying over something that went wrong.

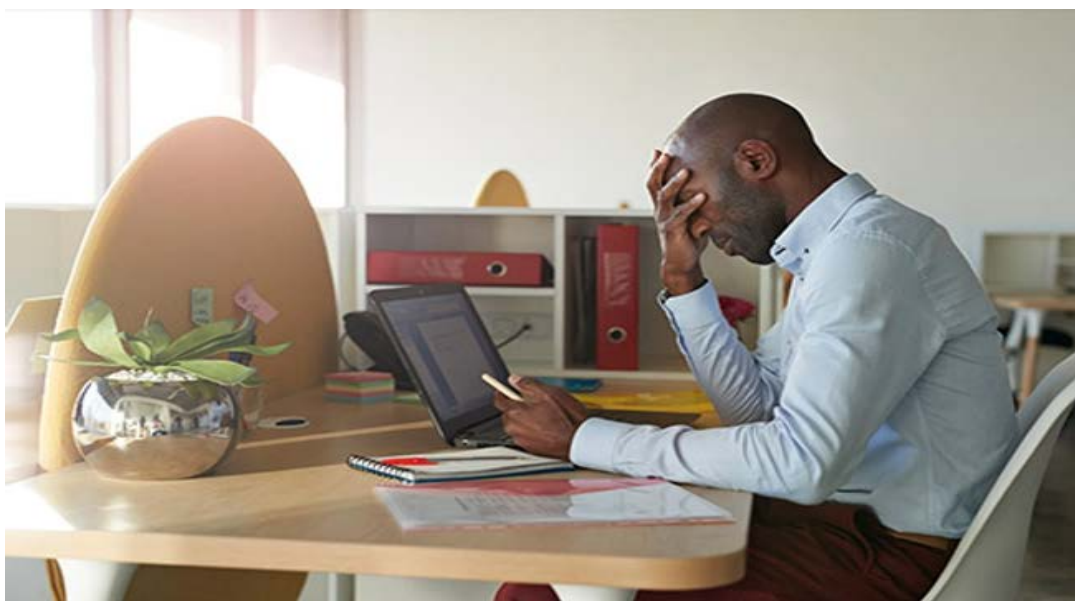


Fig 1.8 Sitting and working with phones and on computers



Fig 1.9 Living in an unclean environment

Benefits of Health and Wellness

The act of practising good health and wellness behaviours can be beneficial in our daily lives and existence. Health and wellness lead to:

- Reduced stress
- Better sleep quality
- Increased energy levels
- Improved self-confidence
- Disease prevention
- Improved physical health
- Enhanced mental health
- Improved cognitive function
- Increased longevity
- Enhanced productivity



Fig 1.10 A responsible life leads to a healthier longer life

Activity 1.1

1. With the help of the internet and other relevant sources of information write down the definition of health and wellness, and indicate behaviours that promote health and wellness.

Health is:

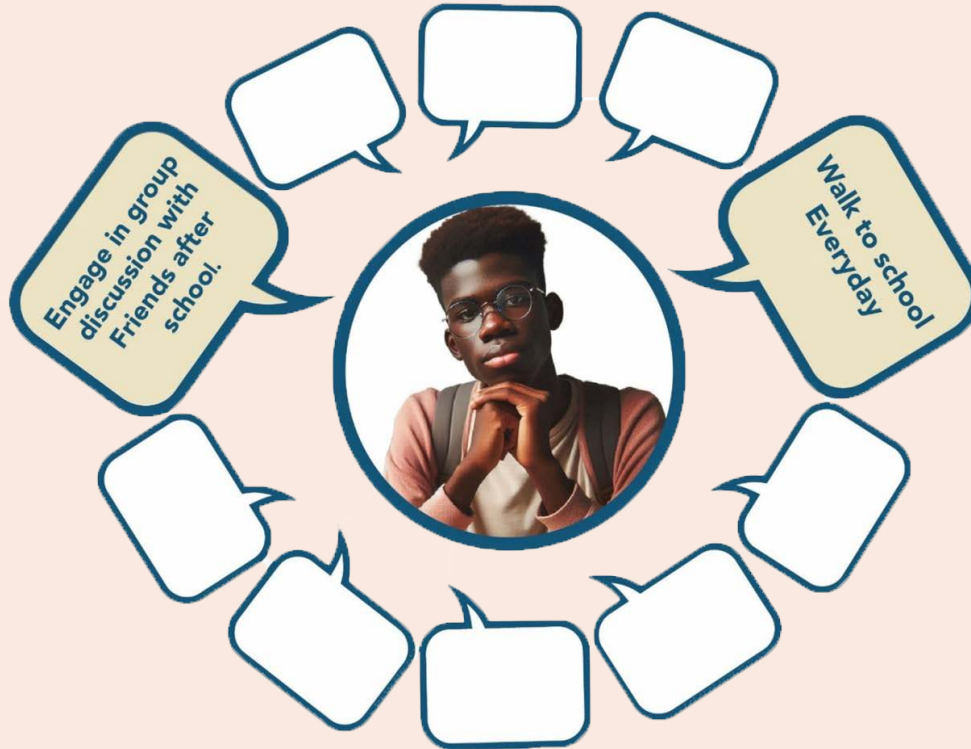
Wellness is:

Behaviours that promote health and wellness:

Compare your findings and discuss with your study mates while respecting divergent ideas.

Activity 1.2

1. Write down ten (10) of your daily life activities.



2. Which of the stated activities will lead to good health and wellness when practised? Use this understanding to complete the table below:

Behaviours that promote health	Behaviours that promote wellness

3. Identify five risk factors each of health and wellness. Prepare a one-page speech on how to prevent ill-health through a healthy lifestyle on the following as seen in the worksheet below:

Risk factors

How to prevent ill-health through a healthy lifestyle.

COMPONENTS/DIMENSIONS OF HEALTH AND WELLNESS

8 DIMENSIONS OF WELLNESS

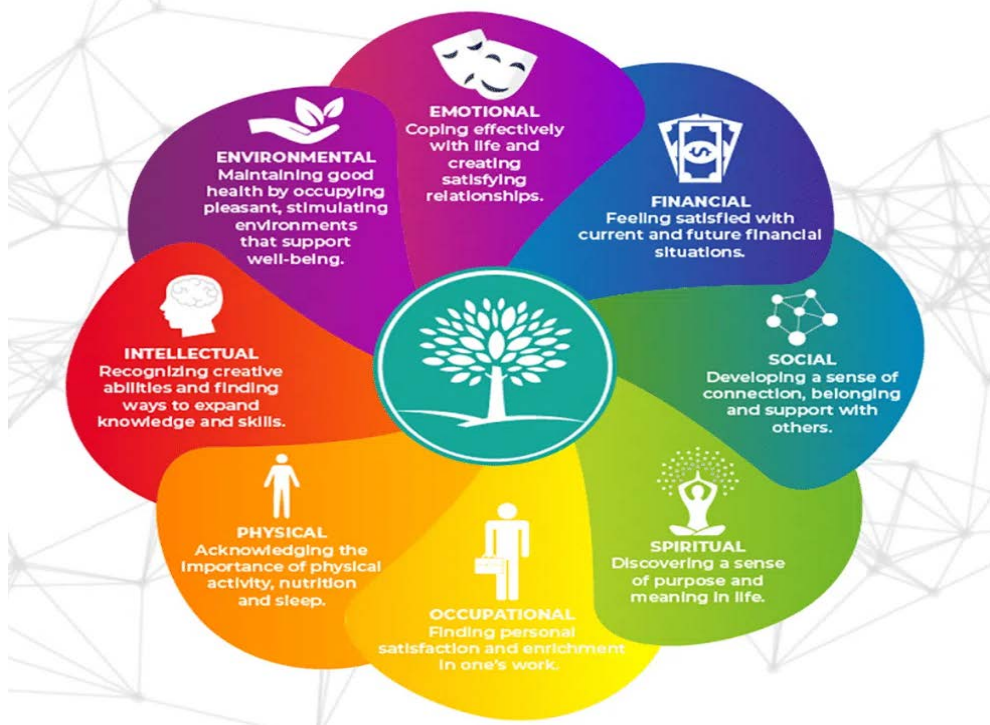


Fig 1.11 Components of health and wellness

Physical Health and Wellness

This is the state of the body and how it functions. Physical health refers to the state of well-being related to the proper functioning of the body and its physiological systems. It encompasses aspects such as nutrition, exercise, sleep, hygiene, and avoiding harmful substances.

Lifestyle choices that can lead to good physical health and wellness include:

- Eating healthy foods.
- Exercising regularly.
- Visiting your doctor for regular check-ups.
- Avoiding drug use.
- Getting at least 6-8 hours of sleep every night.
- Drinking clean water daily (2 litres - 8 cups for women and 2.6 litres - 10 cups for men).



Fig 1.12 Choose the healthy food. It is the right road to take



Fig 1.13 A woman working with a personal trainer

Mental/Intellectual Health and Wellness

This refers to the state of our mind, our thoughts and how it controls our behaviour. Mental health encompasses emotional, psychological, and cognitive well-being. It involves how individuals think, feel, and behave, as well as their ability to cope with stress, manage emotions, and maintain positive relationships.

Lifestyle choices that can lead to good mental health and wellness include:

- Managing stress by engaging in positive activities that make you happy.
- Staying positive by thinking progressively.
- Seeking help if you're feeling down.
- Keeping abreast of current affairs.
- Taking your studies/work seriously.
- Becoming a life-long learner.
- Talking to a counsellor, a teacher and your parents.

Emotional Health and Wellness

This is the state of our feelings/emotions and the ability to cope with stress, express our feelings and manage our emotions. Emotional health also involves recognising and processing feelings, expressing self authentically, and coping with life's challenges in a healthy manner.

Lifestyle choices that can lead to good emotional health and wellness include:

- Managing stress.
- Engaging in activities that bring joy and fulfilment.
- Expressing your feelings in healthy ways.
- Keeping a positive attitude when problems arise.
- Discovering your personal stress reliever.
- Managing your time wisely.
- Finding someone you trust and can openly share your feelings.
- Smiling even when you don't feel like it.



Fig 1.14 Having a positive feeling is good for emotional health and wellness

Social Health and Wellness

This explains the state of your relationships, including your ability to interact with others, communicate effectively as well as build and maintain healthy relationships. Social health pertains to the quality of relationships and social connections that individuals have with others.

Lifestyle choices that can lead to good social health and wellness include:

- Interacting with others in a friendly and cordial manner.
- Communicating openly and honestly with others.
- Building and maintaining healthy relationships.
- Joining clubs or groups with similar interests.
- Participating in community events and activities.
- Volunteering or helping others in need.
- Recognising when you are in an unhealthy relationship and quitting.
- Balancing your social life with your academic/career and responsibility.



Fig 1.15 Being together is better. Positive social life heals

Environmental Health and Wellness

Environmental health is the state of your surroundings, including your home, work, and leisure environments and how they affect you. Environmental health refers to the impact of the physical environment on individual and community well-being. It encompasses factors such as air and water quality, sanitation, safety, access to green spaces, and exposure to pollutants and hazards. Environmental health also includes

promoting sustainability, conservation, and efforts to protect natural resources and ecosystems.

Lifestyle choices that can lead to good environmental health include:

- Distancing self from environmental hazards and pollutants.
- Maintaining the natural environment by avoiding deforestation and illegal mining.
- Avoiding littering of the environment.
- Cleaning your rooms and the items in them, regularly.
- Arranging items in an organised and orderly manner.
- Removing obstacles in spaces for easy passage for all, including those less able.



Fig 1.16 A clean environment creates health and wellness

Financial Health and Wellness

Financial health is the state of your money and includes your ability to save and manage your money as well as to make sound monetary decisions. Financial health refers to the state of one's financial well-being and stability. It encompasses the ability to effectively manage financial resources, make informed financial decisions, and achieve financial goals.

Lifestyle choices that can lead to good financial health include:

- Planning your spending and preparing a budget.
- Avoiding impulse spending.
- Saving for the future.
- Avoiding scams and easy money-making schemes like ritual money, fraud (internet fraud, Ponzi schemes), gambling and dubious money-increasing ventures.

- Avoiding online fraud and impersonators to make money.
- Desisting from associating with people with ill-gotten wealth.
- Seeking financial education and advice when needed.



Fig 1.17 Saving money for future use

Occupational Health and Wellness

This involves the preparation and making use of your gifts, skills and talents to gain purpose, happiness and enrichment in your life. Occupational health relates to the satisfaction and fulfilment derived from one's work or vocation. It involves finding purpose, meaning, and fulfilment in career or professional pursuits. Occupational health encompasses job satisfaction, work-life balance, career development, and alignment with personal values and goals.

Lifestyle choices that can lead to good financial health and wellness include:

- Exploring a variety of career options.
- Creating a vision for your future.
- Choosing a career that suits your personality, interests and talents.
- Being open to change and learning new skills.



Fig 1.18 People fully occupied with work

Spiritual Health and Wellness

The state of your soul includes your ability to find meaning and purpose in life, connect with a higher non-human power and live a life of values and principles. Spiritual health involves finding meaning, purpose, and connection to something greater than oneself. It encompasses beliefs, values, ethics, and a sense of inner peace and harmony.

Lifestyle choices that can lead to good spiritual health and wellness include:

- Being aware of your health and spiritual needs.
- Connecting with a healthy and higher spiritual authority.
- Living a life of values and principles.
- Finding a quiet place and spending time there regularly.
- Pondering over the meaning of your life.
- If you have a healthy religion, studying and practising it.
- Spending time appreciating the natural world around you.



Fig 1.19 Time to connect with a higher spiritual power

The Influence of Health and Wellness on Sports Performance

Health and wellness play a significant role in sports performance, as they directly impact an athlete's physical and mental capabilities.

How Health and Wellness Impacts Sports Performance

1. Physical fitness

Good health and wellness contribute to overall physical fitness, including strength, endurance, flexibility and agility. Athletes with high levels of physical fitness have better strength, endurance, flexibility, and cardiovascular health, which enable them to perform at their best during training and competitions.

2. Injury prevention

Maintaining good health and wellness helps in preventing injuries. Proper nutrition, hydration, rest and recovery are essential for reducing the risk of injuries during training and competition. Additionally, a well-balanced training programme can help strengthen muscles and joints, reducing the likelihood of injuries.

3. High energy levels

Proper nutrition, hydration, rest, and stress management contribute to sustained energy levels, allowing athletes to perform at peak levels throughout training and competitions. Athletes need to consume a balanced diet that provides adequate nutrients to fuel their workouts and promote recovery. Balanced energy levels help athletes maintain focus, endurance, and intensity during physical exertion.

4. Mental well-being

Mental health plays a significant role in sports performance. Athletes who prioritise their mental well-being can cope with stress, anxiety, and pressure during competitions. Techniques such as mindfulness, visualisation and relaxation exercises can help athletes to stay focused and be mentally prepared for their events.

5. Recovery and adaptation

Adequate rest and recovery are essential for allowing the body to adapt to training tasks and improve performance. Sleep plays a critical role in recovery, as it allows the body to repair muscles, consolidate learning and recharge energy stores. Athletes who prioritise rest and recovery experience faster gains in performance and are less prone to overtraining and burnout.

6. Immune function

Good health and wellness play a crucial role in supporting athletes' immune function, reducing the risk of illness and infections that can compromise sports performance. Proper nutrition, hydration, adequate sleep, stress management, and hygiene practices all contribute to a strong immune system, reducing the risk of illness and ensuring consistent training and participation in competition.

7. Longevity in sports career

Prioritising overall health and wellness not only enhances short-term performance but also contributes to longevity in sport by reducing the risk of injuries, burnout, and overtraining syndrome. Athletes who take care of their bodies and prioritise

overall well-being are more likely to sustain their performance levels and enjoy prolonged success in their sport.

8. Social support

Athletes who have dedicated support systems from family, friends, coaches, teammates, and fans, often perform better in sports. Social connections and support networks provide encouragement, motivation, and a sense of belonging. Social support helps to boost confidence and mental resilience during competitions. Additionally, positive relationships within the sporting community can create a supportive environment that enhances overall well-being and performance.

9. Financial advantage

Having financial resources can significantly impact an athlete's ability to access quality training facilities, equipment, coaching, and medical care. This enhances their performance and opportunities for success in sports. Athletes may have greater access to resources that impact their training and performance, such as personalised coaching, specialised equipment, and high-quality nutrition with a higher financial advantage. Financial security also reduces stress and distractions, allowing athletes to focus on training and competition.

10. Environmental awareness

Environmental factors such as weather conditions, altitude, air quality and playing surface can influence athletes' performance and health. Athletes who train and compete in environments that closely resemble competition conditions may have an advantage in adapting to specific competition challenges, such as high altitude or extreme temperatures. Additionally, access to safe and well-maintained training facilities can contribute to injury prevention and optimal performance.

11. Spiritual inspiration

Spiritual well-being refers to a sense of purpose, meaning and connection to something greater than oneself. For some athletes, spiritual beliefs and practices can provide mental strength, resilience, and a sense of inner peace that positively impacts sports performance. Spiritual practices, such as meditation, prayer or mindfulness, can help athletes manage stress, stay focused, and maintain focus during challenging times in their sporting careers.

Activity 1.3

1. Use the example provided below to complete the table. Identify two activities that will promote the various components of wellness.

Component of wellness	Activities
1. Physical wellness	1. Engage in regular physical activity (At least 30 minutes of exercise daily). 2. Maintain a balanced diet, rich in fruits, vegetables, lean proteins, and whole grains.
2. Mental wellness	1. 2.
3.	1. 2.
4.	1. 2.
5.	1. 2.
6.	1. 2.
7.	1. 2.
8.	1. 2.

Activity 1.4

- Identify at least three dimensions of health and wellness. Examine its influence on the sports performance of a student athlete.

Dimension	Influence on sports performance
Social wellness	Helps you relate well with teammates and others.

HEALTHY EATING

Eating a range of meals that provide the body with the nutrients it needs to stay healthy, feel well, and have energy is known as healthy eating. It involves choosing foods that provide essential nutrients such as vitamins, minerals, protein, and healthy fats instead of processed foods high in added sugars, unhealthy fats and sodium. Essentially, it is about making mindful food choices that support optimal physical, mental and emotional health.



Fig 1.20 A healthy blend of fruits and vegetables

What is a Healthy Diet?

A healthy diet is one that offers the body all the vital vitamins, minerals, and nutrients it needs to perform at its best and promote general wellbeing.

It is composed of a well-balanced mix of several dietary groups such as whole grains, fruits, vegetables, lean proteins, healthy fats, and minimal levels of sodium, sugar, and processed foods.

A healthy diet aids in the body's defence against various Non-Communicable Diseases (NCDs), ailments, and malnutrition.

It is crucial to remember that each person's nutritional requirements may differ depending on their age, sex, degree of exercise, and any underlying health conditions.



Fig 1.21 A healthy diet

Effects of Healthy Eating Behaviours on Physical Health

Physical health highlights the well-being of the body and its proper functioning relative to the ability to perform daily tasks and live comfortably. It deals with factors such as physical fitness, proper nutrition and the absence or proper management of diseases or injuries.

The effects of eating a healthy diet are broken down in the table below:

No.	Components of physical health	Effect of healthy eating behaviour
1	Weight management	A nutritious, well-balanced diet helps people maintain or lose weight. It also lowers the risk of obesity, diabetes, cardiovascular disease, and several types of cancer.
2	Healthy heart	A balanced diet, low in saturated fats, cholesterol, sodium and high in fruits, vegetables, whole grains and lean proteins helps maintain healthy blood pressure, cholesterol levels and reduces the risk of heart diseases.
3	Stronger bones	Adequate calcium and vitamin D intake, through a nutritious diet, contribute to strong bones and reduce the risk of osteoporosis and fractures.
4	Stronger muscles and improved flexibility	A diet rich in protein, vitamins and minerals supports muscle growth, repair and maintenance. It also enhances general strength and flexibility.
5	Increased energy levels	Meals that are well-balanced, with a variety of carbohydrates, proteins, and healthy fats, provide you with energy all day long, encourage productivity, and lessen tiredness.
6	Stronger immune system	Eating a diet rich in fruits, vegetables, whole grains, and enough protein helps maintain a strong immune system, lowers the chance of infection and promotes faster recovery.
7	Easy digestion	A diet rich in fibre, fluids and probiotics promotes regular bowel movements, prevents constipation and supports a healthy gut micro biome.
8	Healthy skin	Foods containing vitamins A, C, E and antioxidants help maintain healthy skin, reduce skin conditions and promote a youthful appearance.
9	Effective brain function	Eating a diet high in antioxidants and omega-3 fatty acids helps prevent age-related cognitive decline and promotes memory, thinking, and brain function.

10	Longevity and disease prevention	A healthy diet promotes general well-being. It reduces the risk of chronic diseases and promotes a longer, healthier life.
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Fig 1.22 Healthy eating behaviour and sports success



Fig 1.23 Healthy eating behaviour and sports output

FOOD PYRAMID

A food pyramid is a triangle-shaped diagram or daily dietary guide that illustrates the kinds and amounts of food that a person needs to eat to be healthy. It illustrates which food types to eat and in what amounts an individual should consume them for good health.

Healthy Food Pyramid

A healthy food pyramid is a visual dietary plan that highlights the consumption of wholesome, nutritious, and balanced foods to enhance overall health and physical well-being.

The Goal of a Healthy Food Pyramid

The goal of a healthy food pyramid is to provide a visual guide to making informed, and balanced dietary choices that support overall health and physical well-being.

Objectives of a Healthy Food Pyramid

- A food pyramid helps to prevent nutrient deficiencies and reduces the risk of chronic diseases and conditions such as obesity, diabetes, and heart diseases.
- A food pyramid helps individuals to maintain overall well-being by making healthy and balanced food choices.
- It provides nutritional guidance. A food pyramid helps to categorise food based on nutritional value and gives a clear guidance on the proportion of recommended intake.
- It promotes moderation in consumption and promotes variety by encouraging individuals to choose a wide range of foods from each food group. This helps in meeting nutritional needs and varied flavours in the diet.
- A food pyramid promotes healthy eating patterns. It helps to maintain optimal nutritional needs and health.

The African Food Pyramid

The African food pyramid has the following features:

- **Staple foods:** These foods provide energy and form the base of the pyramid. It consists of mainly grains (millet, sorghum, maize, and rice), root crops (cassava, yam, cocoyam, potato) and plantain.
- **Vegetables:** Locally grown vegetables such as cassava leaves, okra, spinach, gboma, ayoyo, ademe and tomatoes provide essential vitamins and minerals.
- **Proteins:** They include a variety of animal parts and products such as fish, chicken, egg, beef, chevron (goat) and mutton (sheep), as well as plant-based proteins like beans, cowpea, soya and peanuts (groundnuts).
- **Fruits:** Indigenous fruits like mangoes, bananas, papayas, pineapples, and oranges are rich in vitamins, minerals, and natural sugars.
- **Fats and Oils:** They are often derived from palm oil, palm kernel oil, shea butter and coconut oil.

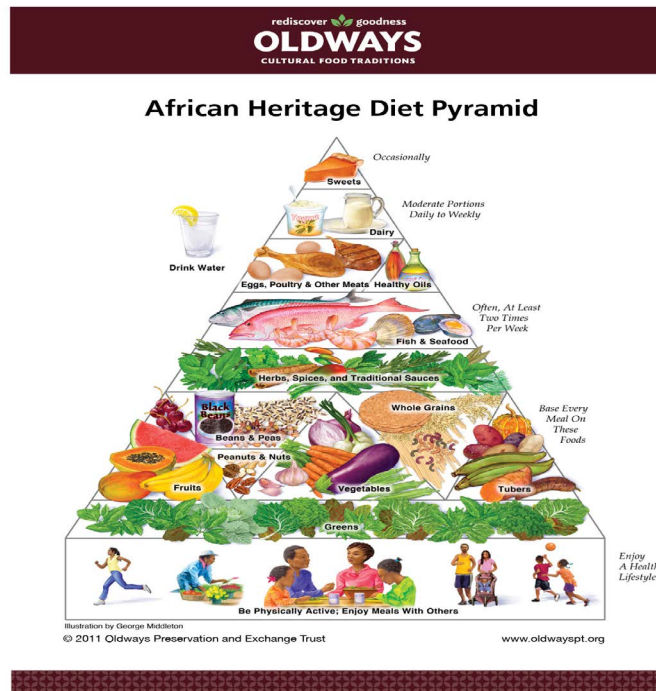


Fig 1.24 A guide on what and how you eat

Proportions of Food Intake in a Diet

The recommended percentages of food nutrients expected in a diet are:

1. Non-starchy vegetables 30-0%
2. Fruits 15-30%
3. Grains and starchy foods 15-30%
4. Beans and other legumes 10-25%
5. Nuts and seeds 10-20%
6. Spices, salt, herbs, condiments and healthy oil – in small amounts

Activity 1.5

1. Research from the internet and other relevant source of information or use on your diet. Write down ten (10) different types of African dishes you have eaten in the last three weeks. Example banku, tuo-zaafi, koko with koose, etc.
2. Categorise these dishes into breakfast, lunch and supper.
3. State how these dishes are beneficial to your health.
4. Compare your work with a study mate and exchange ideas.
5. Your teacher may ask you to make a presentation of your ideas in class.

Activity 1.6

The table below shows components of physical health. Suggest two types of food to support each component.

Compare your answers with your study mates and complete the table below.

Components of physical health	Types of food that support each component
Weight management	1. 2.
Healthy heart	1. 2.
Stronger bones	1. 2.
Stronger muscles and improved flexibility	1. 2.
Increased energy levels	1. 2.
Stronger immune system	1. 2.
Easy digestion	1. 2.
Healthy skin	1. 2.
Effective brain function	1. 2.
Longevity and disease prevention	1. 2.

UNDERSTANDING THE CONCEPT OF NUTRITION

Nutrition is the study of nutrients in food, their use in the body and how they affect the body's growth, development and overall health.

It involves understanding the different types of nutrients present in food, their functions in the body and the ways to obtain and utilise these nutrients to maintain good health.



Fig 1.25 Do you consider nutrition in selecting your diet?

Nutrients

Nutrients are chemical compounds contained in food that our bodies need for energy, growth, development and reproduction. The two major classifications of nutrients are essential nutrients and non-essential nutrients.

Essential Nutrients

Essential nutrients are substances that our bodies require for proper functioning but cannot produce on their own or cannot have in sufficient quantities. These nutrients are derived from our diets. They are necessary for the body's growth, development and overall health.

Examples of essential nutrients, their functions and sources

No.	Nutrient	Function	Food Sources
1	Carbohydrate	Provides energy for the body.	Whole grains (e.g. brown rice, millet, wheat, maize), roots (e.g. cassava, potato) and plantain.
2	Protein	Builds and repairs tissues, produces enzymes and hormones.	Beef, poultry, fish, egg, dairy products (e.g. milk, yoghurt), legumes (e.g. cowpea, soya beans), nuts (e.g. groundnut).

3	Fats	Provides energy, insulates organs, and supports cell growth.	Palm kernel oil, sunflower oil, groundnut oil, coconut oil, butter, salmon, mackerel and avocado.
4	Vitamins	Assists in various biochemical reactions and supports overall health.	Fruits, vegetables, whole grains, dairy products, egg, meat and fish.
5	Minerals	Regulates body processes, supports bone health, nerve function and muscle contraction.	Leafy green vegetables, dairy products, nuts, seeds and legumes.
6	Water	Facilitates bodily functions, maintains temperature, transports nutrients.	Drinking water, fruits, vegetables, soups and beverages.

Non-Essential Nutrients

They are nutrients the body can produce by itself in sufficient amounts for normal functioning. Although they are described as non-essential, they still play important roles in our overall health.

Examples of non-essential nutrients, their functions and sources

No.	Nutrient	Function	Food Source
1	Fibre	A complex carbohydrate plant food which passes through the alimentary canal undigested but promotes healthy digestion and prevents constipation.	Whole grains, fruits, vegetables, legumes, nuts and seeds.
2	Phytochemicals	They are nutrients that protect the internal organs from damage caused by toxins and the body's natural metabolic processes. They protect the body from viruses, bacteria, fungi and parasites. They improve the functions of the immune system, brain and heart.	Chocolate, orange and colourful fruits and vegetables, e.g. carrots, cabbages, watermelons and berries.
3	Antioxidants	They are nutrients that may prevent or delay some types of cell damage. Antioxidants include vitamins A, C and E. They prevent diseases like cancer, heart disease, diabetes, stroke and other diseases of aging.	Dark chocolate (from cocoa beans), strawberries, beans, beetroot (sobolo) and spinach.

4	Prebiotics	These are non-digestible dietary fibres that stimulate the growth or activity of harmless bacteria to improve digestive health, immune systems, and metabolic processes.	Green leafy vegetables, dandelion, garlic, onion, banana, oats, wheat and apples.
5	Probiotics	These are living micro-organisms that have health benefits when consumed and help to prevent diarrhoea, constipation, bowel inflammation, stomach ulcers, allergic disorders, vaginal infections, urinary tract infections and oral health problems.	Yoghurt, cheese, beans, fermented soybean, cassava, maize, sorghum and millet.

Nutrient Deficiency/Malnutrition

Nutrient deficiency, also known as malnutrition, refers to a condition in which an individual's body does not get enough of the essential vitamins and minerals it needs for optimal health and function.

It occurs when the intake or absorption of essential nutrients falls below the recommended levels, leading to a deficiency in one or more nutrients.

Examples of Nutrient Deficiencies

1. Vitamin C deficiency

Severe vitamin C deficiency results in a disease called scurvy. This is a disorder that causes rough skin with several spots, loosening of the teeth, bleeding gums and bleeding mucous membranes.

Vitamin C is essential for the formation of collagen which is a protein that helps keep our skin, bones and blood vessels healthy. It also facilitates the healing of wounds, immune function and the absorption of iron.

A person suffering from vitamin C deficiency may experience:

- a. **Fatigue and weakness:** Not having enough vitamin C can make you feel tired and weak because your body isn't able to produce enough energy.
- b. **Joint pain:** Your joints might start hurting because vitamin C plays a role in keeping your cartilage healthy.
- c. **Bleeding gums:** One of the classic signs of scurvy is bleeding gums. Without enough vitamin C, your gums can become swollen and bleed easily.
- d. **Slow wound healing:** Since vitamin C is important for making collagen, wounds may take longer to heal if you're deficient.
- e. **Easy bruising:** Your blood vessels become weaker without enough vitamin C, which can lead to easy bruising.

- f. **Dry, rough skin:** Vitamin C deficiency can also cause your skin to become dry and rough because collagen is essential for maintaining skin elasticity.

Preventive Measures

Vitamin C deficiency can be prevented by eating a lot of citrus fruits, mangoes, tomatoes, potatoes, broccoli, strawberries, and sweet peppers.

2. Iron deficiency

This occurs when there is an inadequate intake or absorption of iron, leading to low levels of iron in the body. Iron is essential to produce haemoglobin, a protein in red blood cells that carries oxygen throughout the body.

Iron deficiency can result in anaemia, causing symptoms such as:

- a. Fatigue
- b. General body weakness
- c. Pale skin
- d. It can cause shortness of breath
- e. Impaired cognitive function

Preventive Measures

To correct iron deficiency, we must eat a lot of red meat, liver, shellfish, sardine, beans, seeds and dark leafy vegetables.

3. Vitamin D deficiency

This occurs when there is an insufficient intake or limited exposure to sunlight, which is necessary for the body to produce vitamin D. This plays a crucial role in calcium absorption, bone health, and immune function.

A person suffering from vitamin D deficiency may experience:

- a. Weakened bones
- b. An increased risk of sustaining fractures
- c. Bone loss
- d. Muscle weakness
- e. Fatigue
- f. Compromised immune function

Corrective Measures

To correct vitamin D deficiency we must consume fatty fish, egg yolk and cod liver oil.

4. Vitamin B12 deficiency

Vitamin B12 is essential in the production of red blood cells, DNA synthesis, brain performance and proper nerve function.

A person suffering from vitamin B12 deficiency may experience:

- a. Fatigue and body weakness
- b. Pale skin
- c. Shortness of breath
- d. Can lead to neurological symptoms such as numbness or tingling in the hands and feet, difficulty walking and mood disturbances

Corrective Measures

To correct Vitamin B12 deficiency, we need to consume a lot of shellfish, meat, eggs and milk.

5. Calcium deficiency

Calcium deficiency refers to insufficient calcium in the body. Calcium is necessary for strong bones and teeth, working muscles, nerve transmission and blood clotting.

A person suffering from calcium deficiency may experience:

- a. Weakened bones
- b. Increased risk of fractures
- c. Aging of bones (osteoporosis)
- d. Muscle cramps
- e. Blood clotting

Corrective Measures

To address calcium deficiency, we need to consume more boned fish like sardines, dairy products and dark green vegetables like kontomire and spinach.

6. Iodine deficiency

This occurs when there is insufficient intake of iodine, which is necessary to produce thyroid hormones. Thyroid hormones regulate physical growth, brain development and bone maintenance.

Inadequate iodine can lead to hypothyroidism, which is characterised by:

- a. Fatigue
- b. Weight gain
- c. Increased heart rate
- d. Shortness of breath

- e. Cold intolerance
- f. Goitre (enlarged thyroid gland) and poor brain function, particularly in children

Preventive Measures

To prevent iodine deficiency, we need to take in a lot of fish, dairy products, eggs and seaweed.

7. Zinc deficiency

Zinc is involved in various enzymatic reactions, immune function, wound healing, and DNA synthesis. Deficiency in zinc happens when there is a lack of dietary intake or impaired absorption of zinc.

A person suffering from zinc deficiency may experience:

- a. Impaired growth and development
- b. Delayed sexual maturation
- c. Weakened immune function
- d. Can cause skin rashes and hair loss
- e. Loss of appetite and impaired sense of taste and smell

Preventive Measures

To prevent zinc deficiency, we need to eat zinc-rich foods such as oysters, beef, fish, cereals, legumes, dairy foods, and beans soaked in water prior to cooking.



Fig 1.26 A malnourished child



Fig 1.27 Child suffering from malnutrition/kwashiorkor



Fig 1.27 Suffering from Goitre

Influence of Nutrition on Sports Performance

The following are ways proper nutrition can improve sports performance for athletes:

1. **Enhanced energy levels:** Proper nutrition provides athletes with adequate energy to fuel their workouts and performances, leading to improved stamina, endurance, and overall athletic performance.
2. **Optimal macronutrient balance:** Consuming the right balance of carbohydrates, proteins, and fats supports muscle growth and repair, replenishes glycogen stores, and ensures efficient energy utilisation during exercise.
3. **Improved muscle strength and power:** Consuming adequate protein and essential amino acids supports muscle protein synthesis which can lead to increased muscle strength, power, and overall athletic performance.

4. **Quicker recovery:** Proper nutrition, including post-exercise nutrition, helps replenish glycogen stores, repair muscle tissue, reduce muscle soreness, and accelerate recovery between workouts and competitions.
5. **Increased speed and agility:** Proper nutrition supports the development and maintenance of lean muscle mass, which can enhance speed, agility, and overall athletic performance.
6. **Enhanced mental focus:** Nutrients like omega-3 fatty acids, B vitamins, and antioxidants play a role in brain health and cognitive function, leading to improved mental focus, concentration, and decision-making during sports performances.
7. **Reduced risk of injuries:** Proper nutrition supports strong bones, healthy connective tissues, and optimal immune function, reducing the risk of injuries and facilitating faster healing in case of injury.
8. **Improved hydration:** Proper hydration, achieved through adequate fluid intake and electrolyte balance, is crucial for optimal athletic performance, as even mild dehydration can impair physical and cognitive function.
9. **Enhanced immune function:** A well-balanced diet rich in vitamins, minerals, and antioxidants supports a robust immune system, reducing the risk of illness or infection that can hamper training and performance.
10. **Long-term health and well-being:** Proper nutrition not only improves sports performance but also contributes to long-term health and well-being, reducing the risk of chronic diseases and ensuring overall physical and mental health.



Fig 1.28 How does nutrient quality in food impact sports performance?

Activity 1.7

- Identify at least four Ghanaian local dishes and indicate the nutritional values of each one of the dishes.
- Compare your work with your classmates and make the necessary corrections and adjustments.
- Indicate two sources of the nutrients identified above.
- Present your findings in a class discussion.

Ghanaian dish	Nutritional value	Source of nutrient
1.		1. 2.
2.		1. 2.
3.		1. 2.
4.		1. 2.

Activity 1.8

- Find a friend to discuss and write down names of different nutrients.
- Sort the nutrients you wrote into essential and non-essential nutrients.
- Explain verbally or in writing, giving two reasons each for the categorisation of these nutrients.
- Write down how essential and non-essential nutrients can help you make healthier food choices in your daily lives.

Essential nutrients	Reason for categorisation

Non-essential nutrients	Reason for categorisation

How essential and non-essential nutrients help you make healthier food choices.

WHAT IS A DIET?

A diet refers to the overall pattern of food and beverage consumption that individuals regularly engage in to meet their nutritional needs and sustain optimal health. It encompasses not only the types and quantities of foods consumed but also the frequency, timing, and context of eating behaviours.

Components of a Diet

A balanced diet comprises a variety of foods from all the major food groups in appropriate proportions that provide macronutrients, micronutrient, hydration/water and dietary fibre.

1. **Macronutrients:** Macronutrients are the essential nutrients the body requires in large amounts to provide energy and support various bodily functions.

Types of macronutrients

- **Carbohydrates:** These are the body's primary source of energy. Carbohydrates can be found in foods such as grains, fruits, vegetables, and legumes.



Fig 1.29 A carbohydrate-rich diet

- **Proteins:** Proteins are necessary for tissue repair, muscle growth, enzyme production, and immune function. Good sources of proteins include meat, poultry, fish, dairy, eggs, legumes, nuts, and seeds.



Fig 1.30 A protein-rich diet

- **Fats:** Fats provide energy, insulation, and protection for internal organs. Healthy fats can be obtained from sources such as nuts, seeds, avocados, fatty fish and oils.



Fig 1.31 A healthy fat-rich soup

2. **Micronutrients:** Micronutrients are nutrients the body requires in smaller amounts but are essential for normal growth, development and overall health.

Types of Micronutrients

- **Vitamins:** Vitamins are organic compounds that play crucial roles in various bodily functions such as boosting the immune system, supporting cell growth, and aiding in metabolism. Examples include vitamin A, vitamin C, vitamin D, vitamin E, and the B vitamins. Vitamins can be obtained from fruits, vegetables, whole grains and dairy products.



Fig 1.32 Vitamin-rich fruits and vegetables

- **Minerals:** Minerals are inorganic substances that are essential for maintaining healthy bones, regulating body fluids, and supporting various physiological processes. Examples of minerals include calcium, iron, potassium, and zinc, which can be found in foods like leafy greens, nuts, seeds, dairy products and lean meats.



Fig 1.33 A mineral-sufficient balanced table

3. Water/Hydration

Water is essential for life and plays a vital role in numerous bodily functions, including digestion, nutrient absorption, temperature regulation, waste removal, and maintaining hydration. Water forms about 50% to 70% of your body's weight.

Hydration refers to maintaining adequate fluid levels in the body to support optimal health and function. It is recommended to drink water regularly throughout the day, with the exact amount varying based on factors such as age, sex, weight, activity level, climate, and overall health. The main source of water is drinking water. Other sources are fruits, vegetables and beverages.



Fig 1.34 More water, more health

4. Dietary Fibre:

This refers to the indigestible portion of plant foods that passes relatively unchanged through the digestive tract, including fruits, vegetables, whole grains, legumes and nuts. Fibre is important for maintaining digestive health, preventing constipation, regulating bowel movements, lowering cholesterol

levels, stabilising blood sugar levels, weight management reducing the risk of diseases such as heart disease and type 2 diabetes. Good sources of dietary fibre include fruits, vegetables, whole grains, legumes, nuts, and seeds.



Fig 1.35 A diet rich in fibre

Nutrient Deficiency/Imbalance Diseases

1. **Iron deficiency anaemia:** Insufficient intake of iron leads to decreased production of red blood cells, resulting in fatigue, weakness and reduced oxygen-carrying capacity. Iron deficiency anaemia occurs when there is a lack of iron in the body, leading to decreased production of red blood cells and haemoglobin. Symptoms may include fatigue, weakness, pale skin, shortness of breath, and cold hands and feet. Iron-rich foods such as red meat, poultry, fish, beans, lentils, spinach, and fortified cereals can help prevent and treat iron deficiency anaemia.



Fig 1.36 A symptom of iron deficiency anaemia

2. **Vitamin D deficiency:** Vitamin D deficiency occurs when the body does not receive enough sunlight or dietary sources of vitamin D to maintain adequate

levels. Symptoms may include fatigue, bone pain, muscle weakness, and increased risk of fractures and osteoporosis. Sources of vitamin D include sunlight exposure, fatty fish, fortified dairy products, egg yolks, and supplements.



Fig 1.37 Knee injury due to vitamin D deficiency

3. **Pellagra (Niacin deficiency):** Pellagra is a condition caused by a deficiency of niacin (vitamin B3) in the diet. Symptoms include dermatitis (skin rash), diarrhoea, dementia, and death if left untreated. Pellagra is rare in developed countries but can occur in populations with limited access to a diverse diet. Foods rich in niacin include meat, fish, poultry, whole grains, and fortified cereals.



Fig 1.38 Thick, crusty, scaly or cracked skin are symptoms of niacin deficiency

4. **Beriberi (Thiamine deficiency):** Beriberi is a condition caused by a deficiency of thiamine (vitamin B1) in the diet. Symptoms may include weakness, fatigue, nerve damage, difficulty breathing, and heart failure. Beriberi is commonly associated with diets high in refined carbohydrates and low in thiamine-rich foods such as whole grains, nuts, seeds, pork, and legumes.



Fig 1.39 A child suffering from Beriberi

5. **Rickets (Vitamin D and calcium deficiency):** Rickets is a childhood bone disorder characterised by soft, weak bones due to inadequate vitamin D and calcium intake or absorption. Symptoms include bowed legs, delayed growth, dental problems, and skeletal deformities. Rickets can be prevented and treated with vitamin D supplements, calcium-rich foods, and sunlight exposure.



Fig 1.40 Children with rickets (Bow-legged/Knocked-knees)

6. **Scurvy (Vitamin C deficiency):** Scurvy is a condition caused by a deficiency of vitamin C in diet. Symptoms include fatigue, weakness, swollen and bleeding gums, joint pain, and slow wound healing. Scurvy can be prevented and treated by consuming vitamin C-rich foods such as citrus fruits, strawberries, kiwi, bell peppers, and broccoli.
7. **Goitre (Iodine deficiency):** Goitre is an enlargement of the thyroid gland due to iodine deficiency, which is necessary for thyroid hormone production. Symptoms may include swelling in the neck, difficulty swallowing or breathing, and hormonal imbalances. Iodised salt and iodine-rich foods such as seafood and dairy products can help prevent goitre.



Fig 1.41 Goitre

- 8. Kwashiorkor (Protein deficiency):** Kwashiorkor is a severe form of malnutrition caused by inadequate protein intake, usually in children. Symptoms include oedema (fluid retention), stunted growth, muscle wasting, fatigue, and weakened immune function. Treatment involves providing adequate protein and overall nutrition through a balanced diet.



Fig 1.42 Children suffering from Kwashiorkor

- 9. Obesity:** Obesity is a condition characterised by excessive body fat accumulation, usually resulting from a combination of genetic, environmental, and lifestyle factors such as poor diet, sedentary behaviour, and lack of physical activity. Obesity increases the risk of various health problems, including heart disease, type 2 diabetes, stroke, and certain cancers. Treatment involves lifestyle modifications such as diet and exercise, along with medical interventions in some cases.



Fig 1.43 Obesity

- 10. Type 2 Diabetes:** Type 2 diabetes is a chronic metabolic disorder characterised by high blood sugar levels due to insulin resistance and inadequate insulin production. Risk factors include obesity, physical inactivity, unhealthy diet, and genetics. Symptoms may include increased thirst, frequent urination, fatigue, blurred vision, and slow wound healing. Management involves lifestyle changes such as weight loss, healthy eating, exercise, and medication, if necessary.



Fig 1.44 A symptom of diabetes

Effects of Overeating

Overeating, unbalanced diets or diets not having adequate amounts of the required nutrients can lead to the following:

- 1. Weight gain:** Overeating often leads to consuming more calories than the body needs, resulting in weight gain. Excess weight can contribute to obesity, which is associated with numerous health problems, including heart disease, diabetes, and joint issues.

2. **Poor nutritional intake:** Overeating can cause a preference for calorie-dense, low-nutrient foods like fast food, sweets, and snacks. As a result, adolescents may not consume enough essential nutrients like vitamins, minerals, and fibre, leading to nutritional deficiencies.
3. **Digestive issues:** Consuming large quantities of food can put a strain on the digestive system, leading to discomfort, bloating, indigestion, and acid reflux.
4. **Increased risk of chronic diseases:** Overeating, especially when coupled with a poor diet, can increase the risk of developing chronic conditions such as type 2 diabetes, hypertension, and cardiovascular diseases.
5. **Low energy levels:** While overeating may provide a temporary energy boost, it is often followed by a crash in energy levels, leading to feelings of lethargy and reduced motivation.
6. **Body image and self-esteem:** Adolescents who overeat may experience body image issues and reduced self-esteem, especially if they are not satisfied with their weight or physical appearance.
7. **Emotional eating:** Overeating can become a coping mechanism for dealing with stress, anxiety, or other emotions, leading to a harmful cycle of emotional eating.
8. **Poor physical performance:** Overeating can negatively impact physical performance, making it challenging for learners to excel in physical activities or sports.
9. **Disordered eating patterns:** Overeating may contribute to the development of disordered eating patterns, such as binge eating, where individuals feel a lack of control over their eating habits.

Activity 1.9

- Participate in a ‘Nutrition Detective Challenge’.
- In this challenge, analyse the content provided on a series of nutrition-related mysteries using the scenarios below.
- Use the provided questions in the scenarios to research and write down your answers.
- Compare and contrast the different responses with classmates, address any misconceptions, and exchange work as take home notes.

Scenario 1: A teenager is experiencing fatigue, weakness, and pale skin. Based on the symptoms described, what nutrient deficiency might they be experiencing, and how can it be addressed?

Scenario 2: A child is diagnosed with rickets. What dietary changes can be made to prevent and treat this condition?

Scenario 3: A pregnant woman is concerned about her dietary needs during pregnancy. What specific nutrients are important for her and her developing baby, and how can she ensure she is getting enough of these nutrients in her diet?

Scenario 4: A high school athlete wants to optimise their performance through diet. What types of foods should they focus on consuming before, during, and after training or competitions, and why are these choices important for athletic performance?

Scenario 5: A group of friends are planning a balanced meal for a picnic. They want to include a variety of nutrients and flavours. What types of foods should they consider including in their picnic basket, and how can they ensure their meal is both nutritious and delicious?

Scenario 6: A family has a history of heart disease and they want to adopt a heart-healthy diet to reduce their risk. What dietary changes can they make to lower their cholesterol levels and improve their heart health?

Scenario 7: A vegetarian student is concerned about meeting their protein needs without consuming meat. What plant-based protein sources can they incorporate into their diet, and how can they ensure they're getting a balanced intake of essential nutrients?

Scenario 8: A group of students is planning a week-long camping trip. What types of non-perishable, nutrient-dense foods should they pack to sustain them during their outdoor adventure, and why are these choices important for maintaining energy and stamina?

Scenario 9: A teenager is experiencing frequent headaches and difficulty concentrating in school. How might their diet be contributing to these symptoms, and what dietary changes can they make to improve their focus and overall well-being?

Activity 1.10

Nutrient Role Match-Up

Study the riddles below and provide the appropriate macro and micronutrients.

Riddle 1

I am essential for strong bones and teeth, without me, you will have weak bones and teeth. I am found in dairy and leafy greens.

Who am I?

Answer

Riddle 2

I am crucial for eyesight, skin, and growth. You can find me in carrots and sweet potatoes. Without me, you might get night blindness.

Who am I?

Answer

Riddle 3

I help your body repair and heal, in chicken, fish, and beans, I reveal. I am the building block of muscle and tissue.

What am I?

Answer

Riddle 4

I give you energy to run and play, in pasta and rice, I am here to stay. Without me, you would feel tired and weak.

What's my name?

Answer

Riddle 5

I keep your immune system strong. I can be found in citrus fruits. I am essential for healing wounds.

What nutrient am I?

Answer

Riddle 6

I help your blood to clot when you get a cut. I am mostly found in leafy greens.
Without me, you might bleed long with a bruise.

What nutrient am I?

Answer

Riddle 7

I am important for healthy bones and teeth. I am found in dairy products.
Without me, your bones might be brittle.

Who am I?

Answer

Riddle 8

I regulate your heartbeat and nerve function, my source includes bananas and avocados.

Without me, your muscles might cramp.

What mineral am I?

Answer

Answers to riddles

Riddle 1: Calcium (mineral)

Riddle 2: Vitamin A (micronutrient)

Riddle 3: Protein (macronutrient)

Riddle 4: Carbohydrates (macronutrient)

Riddle 5: Vitamin C (micronutrient)

Riddle 6: Vitamin K (micronutrient)

Riddle 7: Calcium

Riddle 8: Potassium

REVIEW QUESTIONS

1. Explain the concept of health.
2. A student was given an assignment to be presented in a week. The student did not use their time wisely and left it until the final night to complete. As a result, they had to stay up all night before the presentation. The student then fell ill and was admitted to the hospital for a week, missing a lot of class periods.

What concept does this scenario explain? What advice will you give to prevent this from happening to another student?

Concept
Advice

3. A 40 year old office worker has the following lifestyle habits:
 - a. Sits long hours behind a computer
 - b. Eats junk food
 - c. Does not smoke
 - d. Engages in physical activity
 - e. Drinks alcohol
 - f. Delays in submitting daily reports
 - g. Engages in unprotected sex

From the above scenario, use your understanding of health and wellness, to identify the risk and healthy lifestyle behaviours. What advice would you give to the office worker to improve their health and wellness?

Risk behaviours	Healthy behaviours

Advice

4. A 35 year old market trader recently realised they are feeling very tired and stressed out due to their demanding job and busy lifestyle. What four (4) lifestyle changes do you suggest to improve their overall health and wellness?

Lifestyle change
1.
2.
3.
4.

i. Below is a sample of a health and wellness lifestyle chart.

Name	Daily healthy activities			
	Day 1	Day 2	Day 3	Day 4
Abu	Health-walk with friends	Stayed hydrated	Practised self-care	Ate junk food
Ama	Attended aerobic dance training	Played football with neighbours	Slept 7 – 8 hours and woke up on time.	Engaged in low intense exercise
Adzo	Ate a balanced diet	Drank alcohol before work	Practised stress management	Financial plans
Addo	Cleaned the kitchen	Played volleyball with friends	Went on errands on foot	Skipped

- Use the chart provided as a guide to design a healthy lifestyle plan for the following groups of people:
 - Athlete
 - Market trader
 - Lactating mother

Name	Daily healthy activities			
	Day 1	Day 2	Day 3	Day 4
Athlete				
Market trader				
Lactating mother				

- Present your healthy lifestyle plan to the class. Show respect for your classmates' inputs and necessary corrections.
5. Ako ensures she eats food on a daily basis but was not concerned about the content of her diet. She fell ill and visited a doctor. The doctor diagnosed that she was malnourished. Advise Ako on the reasons she may have become malnourished and provide advice on the types of food Ako can eat to recover and maintain a healthy diet.
 6. Make a one-week menu plan for a student-athlete who is preparing for an inter-school sporting competition.

Day/Meal	Breakfast	Lunch	Supper
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Saturday			
Sunday			

7. Explain the term, nutrient.

8. Alice and Buruj are friends who have recently started paying more attention to their diet and health. Alice, being more concerned about nutrition, emphasises the importance of consuming diets that contain nutrients like vitamins, minerals, proteins, and fats. Buruj, on the other hand, is more unconcerned and tends to indulge in a lot of processed foods and sugary snacks. He argues that if he is not feeling sick, he does not see the need to worry about specific diets.

In the above scenario, what advice would you offer Buruj?

9. How does a balanced diet contribute to overall health and well-being?

10. Scenario

A group of teenagers are experiencing various health issues due to poor dietary habits. They often consume fast food, sugary snacks, and drinks high in refined sugars, neglecting essential nutrients needed for their growth and development. As a result, they are facing multiple health challenges such as fatigue, weight gain, digestive issues, and low energy levels.

Use the Scenario Above to Answer the Following Questions:

- a. What are the potential consequences of the teenagers' poor dietary habits on their overall health and well-being?

- b. How might the lack of essential nutrients in their diet contribute to the symptoms they are experiencing, such as fatigue and digestive issues?

- c. Discuss the importance of consuming a balanced diet rich in macronutrients (carbohydrates, proteins, and fats) and micronutrients (vitamins and minerals) for adolescents' growth and development.

- d. What dietary changes could the teenagers make to address their health issues and improve their overall well-being?

- e. Consider the long-term consequences of the teenagers' poor dietary habits on their future health outcomes. What chronic diseases might they be at risk of developing if they continue their current eating habits?

- f. Reflect on your own dietary habits and identify areas where you can make improvements to ensure a balanced and nutritious diet for optimal health and well-being.

ANSWERS TO REVIEW QUESTIONS

1. Health is not just the absence of diseases and infirmity but a complete state of physical, cognitive and social well-being.
2. The scenario explains the concept of wellness. It highlights risk behaviours that negatively impact wellness, hence health.

Advise students to make good lifestyle choices such as engaging in regular exercise, avoid sitting for long hours and improve time management.

3.

Risk behaviours	Healthy behaviours
Sits long hours behind his computer	Engages in physical activity
Eats junk food	Does not smoke
Drinks alcohol	
Engages in unprotected sex	

Advice: Look at changing risk behaviours. For example:

- Take regular breaks away from computer.
 - Look at changing eating habits to include healthy food options.
 - Check alcohol intake.
 - Use protection during sex.
3. Suggested recommendations to the market trader include:
 - i. Eat healthy foods
 - ii. Get enough sleep
 - iii. Drink enough water
 - iv. Engage in regular exercise
 - v. Practise self-care
 4. a. Athlete
 - Health walk with friends
 - Attended aerobic dance training
 - Ate balanced diet
 - Stayed hydrated
 - Played football and volleyball with friends
 - Got sufficient rest
 - Skipped

b. Market Trader

- Financial plan
- Ate balanced diet
- Attended aerobic dance training
- Got sufficient rest

c. Lactating Mother

- Ate balanced diet
- Got sufficient rest
- Practised stress management

5. Ako did not pay much attention to her diet.

Potential reasons for malnutrition

- Lack of essential nutrients in Ako’s diet.
- Combination of unbalanced food groups.
- Eating the wrong foods in the wrong amounts.

Advice

- Create a menu based on the healthy food pyramid.
- Review food intake.
- Ensure food is eaten in the correct quantities.
- Eat a limited amount of processed foods.

6. Example of a menu plan for a student-athlete who is getting ready for an inter-school sporting competition.

Day/Meal	Breakfast	Lunch	Supper
Monday	Banku with grilled tilapia and pepper sauce	Waakye with fried fish, boiled egg, and mixed vegetables	Fufu with light soup and grilled chicken
Tuesday	Hausa koko with koose (bean cakes)	Jollof rice with grilled chicken and coleslaw	Ampesi with kontomire stew and baked fish
Wednesday	Oat porridge with peanut butter and banana	Red red with fried plantains and boiled eggs	Kenkey with fried fish and shito (pepper sauce)
Thursday	Masa with honey or jam	Banku with okro stew and grilled tilapia	Rice balls with groundnut soup and grilled chicken

Friday	Boiled yam with garden egg stew	Coconut rice with chicken curry and mixed vegetables	Tuo Zaafi with ayoyo soup and goat meat
Saturday	Yam porridge with tuna fish	Kontomire stew with boiled yam and fried fish	Jollof spaghetti with grilled chicken and salad
Sunday	Akara (bean fritters) with papaya slices	Waakye with stewed spinach and fried fish	Banku with okro soup and grilled tilapia

7. It refers to any substance that provides nourishment essential for the maintenance of life and for growth.

8.

- Remind Buruj that while non-essential nutrients like sugar and unhealthy fats may provide temporary pleasure, they can also lead to long-term health issues such as obesity, diabetes, and heart disease.
- Advise Buruj to incorporate more essential nutrients in his diet, like choosing whole grains over refined grains, opting for lean protein sources, and adding more fruits and vegetables to his meals.
- Encourage Buruj to value prioritising essential nutrients and make some changes to his eating habits.
- Explain to Buruj that these diets contain nutrients that are vital for the proper functioning of the body, supporting processes like growth, energy production, immune function, and overall well-being.

9. A balanced diet provides the body with all the necessary nutrients in appropriate proportions, contributing to overall health and well-being by supporting growth, development, and optimal functioning of bodily systems. It helps maintain a healthy weight, reduces the risk of chronic diseases, and supports mental and emotional well-being.

10.

- a. The potential consequences of the teenagers' poor dietary habits on their overall health and well-being include increased risk of obesity, type 2 diabetes, cardiovascular diseases, digestive disorders, nutrient deficiencies, and compromised immune function. These health issues can lead to fatigue, low energy levels, weight gain, and long-term complications affecting their quality of life.
- b. The lack of essential nutrients in their diet can directly contribute to the symptoms they are experiencing. For example, insufficient intake of vitamins and minerals can lead to fatigue due to compromised energy metabolism and impaired cellular function. Similarly, low dietary fibre intake can result in digestive issues such as constipation and bloating, affecting gastrointestinal health and overall well-being.

- c. Consuming a balanced diet rich in macronutrients and micronutrients is crucial for adolescents' growth and development. Carbohydrates provide energy for daily activities, proteins support muscle growth and repair, and fats play a role in hormone production and cell structure. Micronutrients like vitamins and minerals are essential for various physiological functions, including immune function, bone health, and nerve functioning.
- d. To address their health issues and improve overall well-being, the teenagers could make dietary changes such as incorporating more whole foods like fruits, vegetables, whole grains, lean proteins, and healthy fats into their meals. They should limit intake of processed and sugary foods and opt for water or unsweetened beverages instead of sugary drinks. Regular physical activity and adequate sleep are also important components of a healthy lifestyle.
- e. The long-term consequences of the teenagers' poor dietary habits may include an increased risk of chronic diseases such as obesity, type 2 diabetes, cardiovascular diseases, and certain cancers later in life. These diseases can have significant impact on their health outcomes, quality of life, and healthcare costs.
- f. Reflecting on one's own dietary habits can help identify areas for improvement to ensure a balanced and nutritious diet for optimal health and well-being. This may involve setting specific goals for increasing intake of fruits and vegetables, reducing consumption of processed and sugary foods, staying hydrated with water, and incorporating regular physical activity into daily routines.

Extended Reading

- Use the following link to access additional information on health and wellness behaviours:
<https://slideplayer.com/slide/12127099/>
- Use the following links to access further information on the components of health and wellness:
https://www.medicinenet.com/what_is_health_and_wellness/article.htm
<https://iawpwellnesscoach.com/wellness-coaching/health-and-wellness/>
- Use the following link to access further reading on the influence of the health and wellness components on sports performance:
<https://www.avancecare.com/whats-the-link-between-general-health-and-athletic-performance/>
- The link below highlights the relevance of diet in weight management:
<https://www.niddk.nih.gov/health-information/weight-management>
- The link below delves into the nutritional sources and the role of whole grains in healthy diets:
<https://www.hsph.harvard.edu/nutritionsource/what-should-you-eat/whole-grains/>
- Follow the link below for detailed and pictorial examples of Ghanaian diets:
<https://thebourgielife.wordpress.com/2017/03/06/happy-60th-independence-day-ghana-here-are-top-10-ghanaian-meals-you-need-to-try/>
- To learn more about promoting healthy diet follow the link below:
<https://www.who.int/westernpacific/activities/promoting-healthy-diets>
- Click on the link below to access a video on the importance of food and nutrition in our daily life:
https://youtu.be/taX_u8b5-xk
- Use the link below to gain further understanding on the effects of overeating on our body:
<https://www.healthline.com/nutrition/overeating-effects>
- Click the link below to access a video on components of food:
<https://youtu.be/RXvO13762s8>

References

- *American Institute of Wellness*, (2023). https://www.physio-pedia.com/The_Concept_of_Wellness
- *Law Insider: Health and Wellness*: <https://www.lawinsider.com/dictionary/health-and-wellness>
- *Monroe, S. (2021). Holistic Wellness Coach Certification* <https://iawpwellnesscoach.com/wellness-coaching/health-and-wellness/>
- *World Health Organisation (WHO). (2021). Global Strategy on Diet, Physical Activity and Health. Retrieved from* <https://www.who.int/publications/i/item/9241592222>
- *SetuServ, (2020). Consumer Trends in Health and Wellness.* <https://www.setuserv.com/consumer-trends-in-health-and-wellness-in-2020>
- *American Heart Association Cookbooks; Protein and Heart Health:* <https://www.heart.org/en/healthy-living/healthy-eating/eat-smart/nutrition-basics/protein-and-heart-health>
- *American Heart Association; Added Sugars and Cardiovascular Disease Risks in Children (2016):* <https://www.ahajournals.org/doi/10.1161/CIR.0000000000000439>

- *Designing a Healthy Eating Plan:* <https://www.breastcancer.org/managing-life/diet-nutrition/what-does-healthy-eating-mean/designing-an-eating-plan>.
- *Harvard T.H. Chan School of Public Health; Fats and Cholesterol:* <https://www.hsph.harvard.edu/nutritionsource/what-should-you-eat/fats-and-cholesterol/>
- *WHO (2020); Healthy Diet:* <https://www.who.int/westernpacific/activities/promoting-healthy-diets>
- <https://www.msdmanuals.com/professional/nutritional-disorders/vitamin-deficiency,-dependency,-and-toxicity/vitamin-d-deficiency-and-dependency>
- *Recipearoundtheworld.com:* <https://recipesaroundtheworld.com/recipes-from-around-the-world-fufu-and-lightsoup-dea8c1dd01f>

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