Holistic Concept of Health

Booklet(3)
Physical Well-being

S4 – Concepts and Framework

Booklet (1) Personal development

Booklet (2) Health and well-being

S4 – Holistic Health

Booklet (3) Physical

Booklet (4)Mental

Booklet (5) Social

S5 – Macro Level

Health Management

Booklet (6) (8) (9) (10)

Social Care

Booklet (7) (11)

Round-up：Booklet(13) Health and Social Care Policies

Learning Targets

Values and attitudes

- Demonstrate a commitment to the promotion of personal health and a healthy lifestyle
- Encourage and support others in making health decisions for healthier lifestyles

Knowledge

- Understand the protective factors and risk factors to physical health
- Understand the basic functioning of body systems

Skills

- Use health indicators to keep track of general health conditions

Physical Health Management

Ill-being

Well-being

Booklet (3)Health indicators

Health risks

- Diabetes
- Obesity
- Central obesity
  - Waist-hip ratio (WHR)
  - Waist Circumference
- Cardiovascular diseases
  - heart diseases
  - stroke
  - Blood pressure
  - Pulse rate
- Growth charts
- Body Mass Index (BMI)
- Fat ratio

Physical fitness

- Muscular strength
- Muscular endurance
- Cardio-respiratory endurance
- Flexibility

3.1 Indicators of Physical Health

Curriculum and Assessment Guide

- **Topic 3 – Responding to the Needs in the Areas of Health (care, promotion and maintenance) and Social Care**
  - ***3AThe notion and practice of health promotion, health maintenance, ill-health prevention, social care, welfare and community services*內容：**
    - 3A1 Health and well-being : Different aspects (social, psychological, emotional and physical) of health - Indicators for measuring physical health and their implications
      - ***To use health indicators to keep track of general health condition***

3.1 Indicators of Physical Health

Key Question
How can an individual's physical health be measured?

Assessing : Obesity /Central obesity/ Abnormal growth and development

Problem	Measuring	Tool	Indicator
Abnormal growth and development	Weight (kg) and height (cm)	Scale, measuring tape	● **Growth charts** ➢ Standards of a normal pattern of growth in terms of height and weight
Obesity	Weight (kg) /height $(m)^2$	Scale, measuring tape	● **Body Mass Index (BMI)-** the sum of the ratio of body mass ➢ 23 - 24.9(Overweight) ➢ 25 + (Obese)
	Fat ratio	Calipers / body fat scale	● **Fat ratio** ➢ Male : 10 - 20% ; Female : 15 - 25% ➢ Obese : if males exceed 25% and females exceed 30%.
Central obesity	Waist Circumference (cm)	Measuring tape	● **Waist circumference** ➢ Average : 90cm (35.5 inches) in men ; 80cm (31.5 inches) in women ➢ High-risk : more than 102 cm (40 inches) in men and 88 cm (34.5 inches) in women
	Waist Circumference (cm) / Hip Circumference (cm)	Measuring tape	● **Waist-hip ratio (WHR)** ➢ less than 1.0 for men and less than 0.85 for women

Limitation of BMI and WHR

Indicator	Limitation
BMI	• BMI is not gender specific • BMI does not measure the fat content distribution • It may not be applicable to certain groups such as elderly/ pregnant women / practitioners of physical fitness programmes • Body figure / proportion varies among different races and ethnic groups, so same BMI value may not represent the same degree of fatness.
WHR	• WHR may not be applicable to certain groups such as pregnant women • WHR can only measure the extent of central obesity, which is only related to certain types of chronic diseases

3.1 Indicators of Physical Health

Problem	Measuring	Tool	Indicator
Cardiovascular diseases such as heart diseases and hypertension	Pulse rate		• Adult ：60-100，average 80 (higher for children aged 14 or below ; newborn140)
	Blood pressure	Blood Pressure Monitor	• Unit of measurement: millimeters of mercury (mmHg) • Systolic blood pressure - a reflection of cardiac output (heart contracts to eject blood) • Diastolic blood pressure -a reflection of peripheral vascular resistance(heart relaxes for blood returning) • Adult - 120/80 (High blood pressure if over 140) • Elderly- 130/80(High blood pressure if over 160)

- *Measurement – the pulse rate and blood pressure may be different when it is measured at different time / different physical condition (such as after exercises)*

Implications

- *Illnesses that may be caused by high blood pressure*
  - *Heart diseases*
  - *Stroke*
  - *Kidney diseases*
  - *Reduced vision / blindness*
- *Any changes in blood pressure indicate manifestations related to cardiovascular function, renal function, metabolic function, as well as neurological function*
- *Rises in pulse rate or blood pressure may also reflect the emotional status of an individual*

3.1 Indicators of Physical Health

Physical Well-being : Physical Fitness

the ability that an individual is able to carry out daily activities with energy and alertness without feeling exhausted, and enjoys the leisure time, coping with unexpected incidents

Aspect	Description	Example
Muscular strength	the ability of the muscles to exert force using one single muscle contraction to overcome resistance	Resistance exercise such as weight lifting
Muscular endurance	the ability to perform repeated muscle contractions over a period of time	Marathon
Cardio-respiratory endurance	the ability of the circulatory system and the respiratory system (i.e. heart and lungs) to supply oxygen to the working muscles and remove metabolic waste (e.g. carbon dioxide) at the same time	Aerobic exercise
Flexibility	the ability of the joints to reach their full range of movement	Stretching, Tai-chi, Yoga

3.2 Maintaining Physical Health and Well-being at Different Levels

Curriculum and Assessment Guide

- **Topic 3 – Responding to the Needs in the Areas of Health (care, promotion and maintenance) and Social Care**
  - *3AThe notion and practice of health promotion, health maintenance, ill-health prevention, social care, welfare and community services*
    - *3A2 Health maintenance and ill-health prevention: Personal Role*
      - To understand the protective factors and risk factors to health and well-being
      - To demonstrate a commitment to the promotion of personal health and a healthy lifestyle
      - To encourage and support others in making health decisions for healthier lifestyles

Individual Level – *Healthy Diet*

Topic 3 – Responding to the Needs in the Areas of Health (care, promotion and maintenance) and Social Care

- ***3AThe notion and practice of health promotion, health maintenance, ill-health prevention, social care, welfare and community services***
  - *3A2 -Protective factors: balanced diet; risk factors: unhealthy dietary habits*
    - To understand the protective factors and risk factors to health and well-being

Topic 4 - Promotion and Maintenance of Health and Social Care in the Community

- ***4C Aspects of risk assessment and health management***
  - *4C2 - Diet and nutrition*
    - To explore the ways to manage personal health

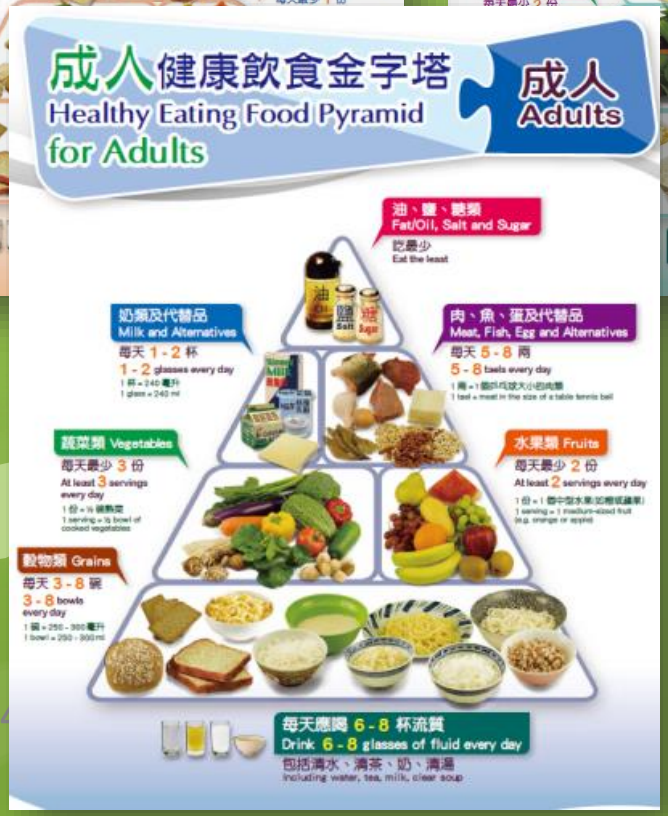
Individual Level – *Healthy Diet*

Key Question
How can we maintain a healthy body?

Macro-nutrients	for growth, metabolic function and bodybuilding
Protein	• Promote growth and repair body tissue • When the amount of energy stored in the body is inadequate, protein will be decomposed and release energy to support the body
Carbo-hydrate	• the source of energy • divided into 3 groups: **mono**saccharide, **di**saccharide and **poly**saccharide (starch and **dietary fibre**) • **Soluble fibre** - lower the level of blood sugar, prevent colon cancer
Fat (lipids)	• prevent heat loss and protect the internal organs from shock • divided into 2 groups: saturated fats (e.g. animal fats) and unsaturated fats(including monounsaturated fats, polyunsaturated fats and trans fatty acid)

Micro-nutrients	for regulating cell function
Vitamins	• Divided into fat-soluble (vitamins A, D, E and K) and water-soluble (vitamins B and C) • Fat-soluble vitamins will be dissolved in the blood and circulated around the body (*Excessive intake of fat-soluble vitamins will be stored in the liver*) • Water-soluble vitamins will be excreted thorough the kidney and are relatively safe • Different functions, such as vitamin B12 is necessary for the production of red blood cells
Minerals	• assisting in blood clotting, carrying oxygen around the body, heart beating, transmission of nerve impulses and functioning of the metabolic system. For example, Calcium for forming the hard structure of bones and teeth)

Individual Level – *Healthy* Diet(Booklet 2)



Individual Level –Unhealthy Dietary Habits

Deficiency in nutrients *specific nutrient deficiency*

- Health problems – such as corbutus, beriberi, rickets, keratomalacia, pellagra

Unhealthy diet *high fat, high salt and high sugar but low fibre and low calcium*

- Low fiber intake (e.g. low fruit and vegetable consumption) - increases the risks of colon cancer, stroke, heart diseases
- Increased total, saturated and polyunsaturated fat, carbohydrate and sugar consumption - higher risks of obesity, heart disease, stroke and other cardiovascular diseases
- Trans fatty acid (hydrogenated vegetable oils , packed foods and fried food) raises low-density lipoprotein (LDL) cholesterol level and lower high-density lipoprotein (HDL) cholesterol level - increases the risk of Coronary Heart Disease

Cholesterol

Cholesterol in the blood is attached to **lipoproteins**

- High Density **Lipoprotein** (HDL) - **Good** Cholesterol
  - removing cholesterol from the artery walls
  - returning it to the liver where it is excreted from the body

Cholesterol

- Low Density **Lipoprotein** (LDL) – **Bad** Cholesterol
  - circulating the cholesterol in the blood
  - deposits cholesterol in the cells - quickening the rate of hardening of the arteries

Low Density Lipoprotein (LDL)

Fat Deposition in Arteries

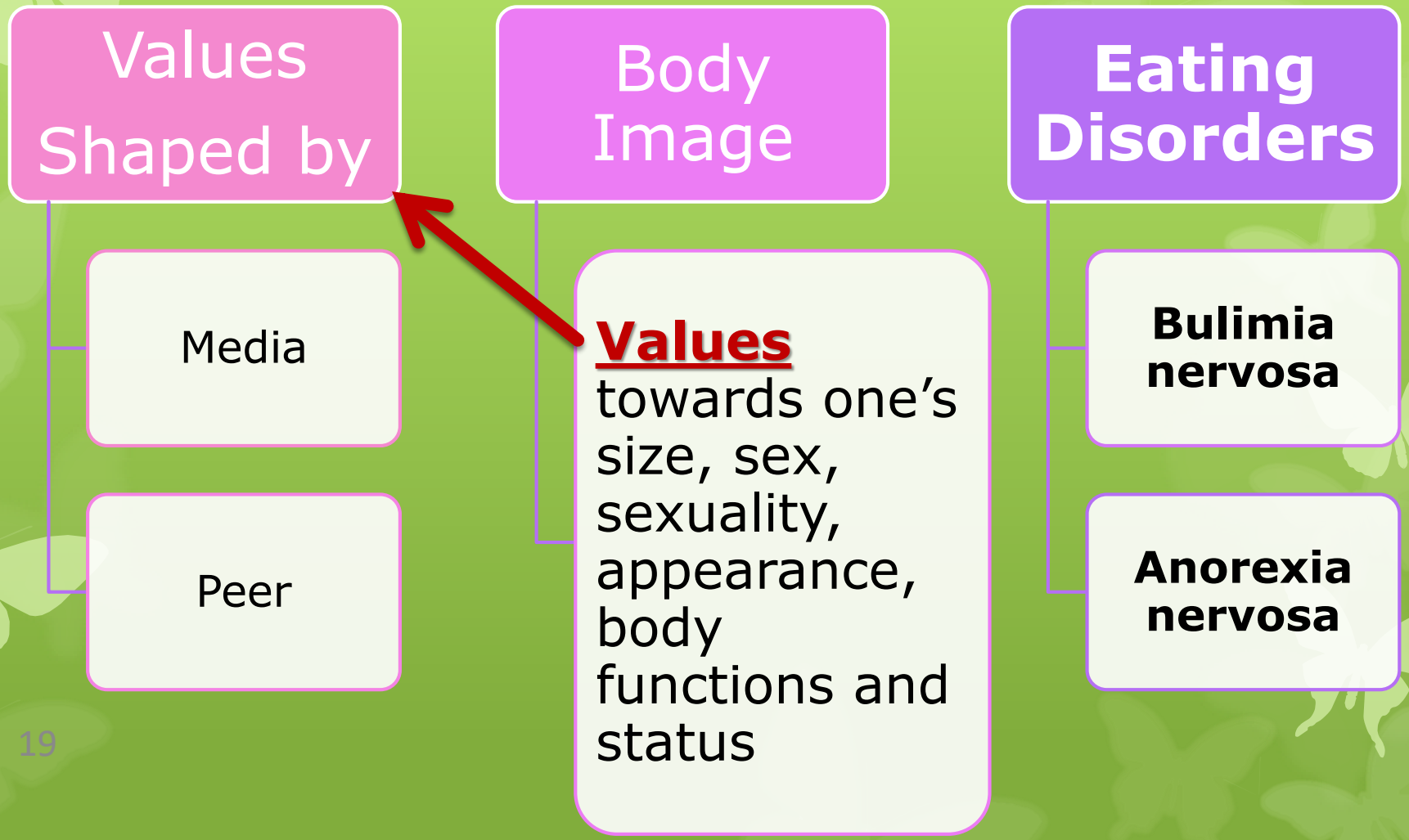
3.1 *Body shape and body image*

Curriculum and Assessment Guide

Topic 4 - Promotion and Maintenance of Health and Social Care in the Community

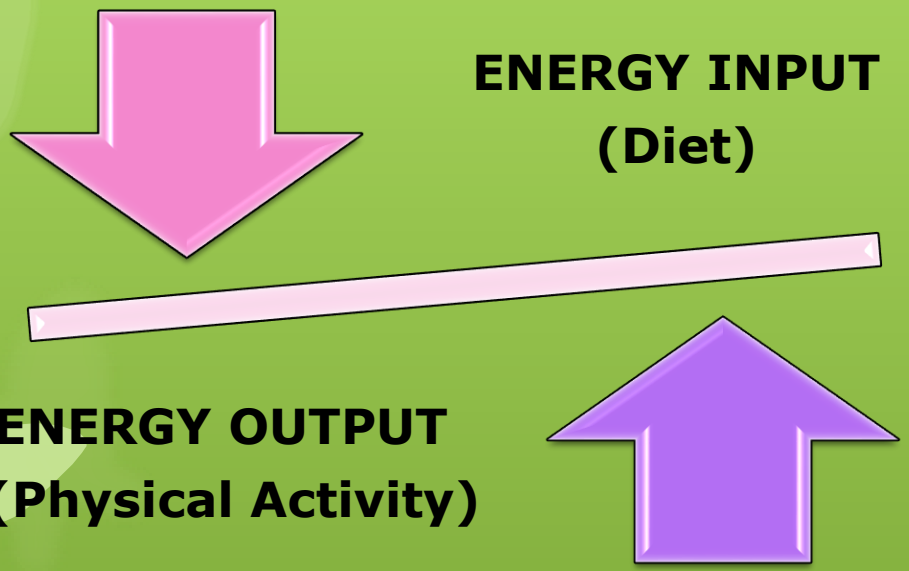
- ***4C Aspects of risk assessment and health management***
  - *4C2 - Diet and nutrition* - Body shape and body image: media literacy, criticise current concepts, appropriate weight management
    - To explore the ways to manage personal health

3.1 *Body image: the product of media*



Key Question
How can we maintain a healthy body?

Individual Level – Energy Balance



Weight

Unhealthy Lifestyle and Obesity

Insufficient physical activity

Obesity

Frequent consumption of **high-calorie** fast food

Increasing **sedentary** nature of workplace and leisure activities

Excessive Energy Input

Low Energy Input

Energy input is much larger than energy output

Example : Energy Input and Output

Key Question
How can we maintain a healthy body?

Energy Input Meals		Energy(kcal)
Breakfast	Coffee	63
	Ham Sandwich	605
Lunch	Pork Chop Ramen with Curry Sauce	657
	Pearl Milk Tea	180
Dinner	Hainanese Chicken Rice	800
	Lemonade	192
	Total	**2497**

Energy Output
Estimated daily energy requirement (kcal/day)
for healthy individuals with no chronic disease and specific nutritional requirement

18 - 49	M	F
Light level of physical activity	2 400	2 100
Moderate level of physical activity	2 700	2 300
High level of physical activity	3 200	2 700

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Classification of Physical Activity and Level of Intensity

Key Question
How can we maintain a healthy body?

Level of intensity	Physical Activity	
	Exercise	Non-exercise physical activity
Vigorous	Examples: jogging, fast swimming, fast dancing, jumping rope, tennis (singles), basket ball, soccer	Examples: playing with children or dogs at a fast pace
Moderate	Examples: brisk walking, water aeorbics, tennis (doubles), biking on level ground, sports involving catch and throw (such as volleyball and baseball)	Examples: stair-climbing, carrying small children, mopping floor, scrubbing the bathtub, car washing
Low	Examples: light walking, stretching, lifting hand weights, sit-ups, push-ups against the walls	Examples: standing, washing dishes, doing laundry, cooking, playing piano

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Interpersonal and Societal Level

Key Question
How can we maintain a healthy body?

Societal Level– Choice

Reference: Booklet 2.2 Factors Affecting Health and Well-being– Income / Work

choices and options **available**

choices and options **unavailable**

Interpersonal Level

Reference: Booklet 5.3C Peer relationship – Group conformity

Social Network **Positive Impacts**

Social Network **Negative Impacts**

Individual Level

Energy Input

Energy Output

3.3 Understanding Different Body Systems

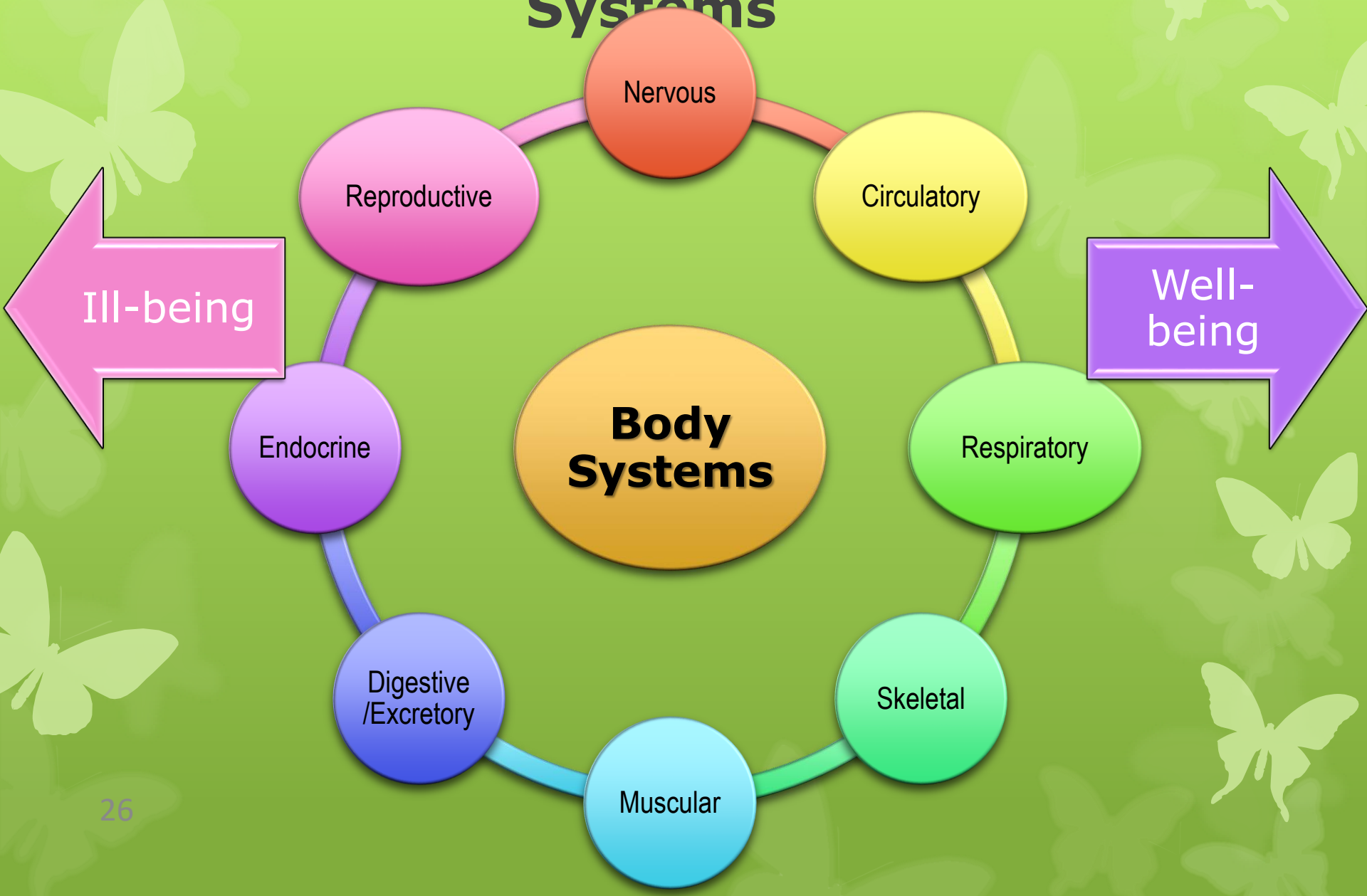
Curriculum and Assessment Guide – Not directly stated in any topic

Topic 2 - Health and Social Care in the Local and the Global Contexts

2C *Recent increases in vulnerability and exposure due to lifestyle changes, globalization and family changes*

- 2C1 Communicable and non-communicable diseases

3.3 Understanding Different Body Systems

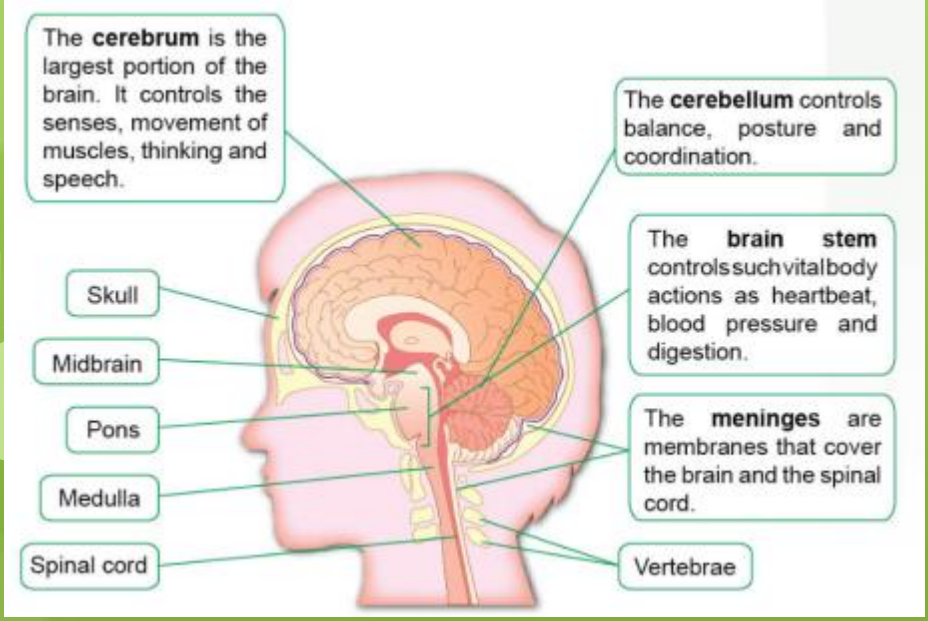


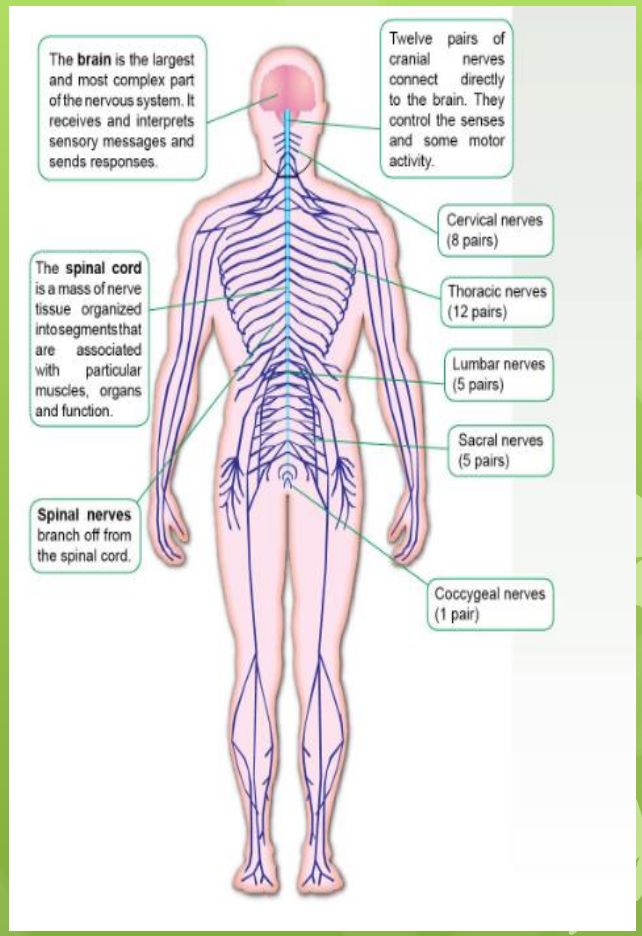
Nervous System

Key Question
What does a healthy body mean?

Related Topics :

- Factors influencing mental health (Booklet 4.2A1)
- Dementia (Booklet 4.3B4)
- Noise pollution (Booklet 8.2D)
- Safety at sports - wearing essential equipment to protect the nervous system(Booklet 9.3B)



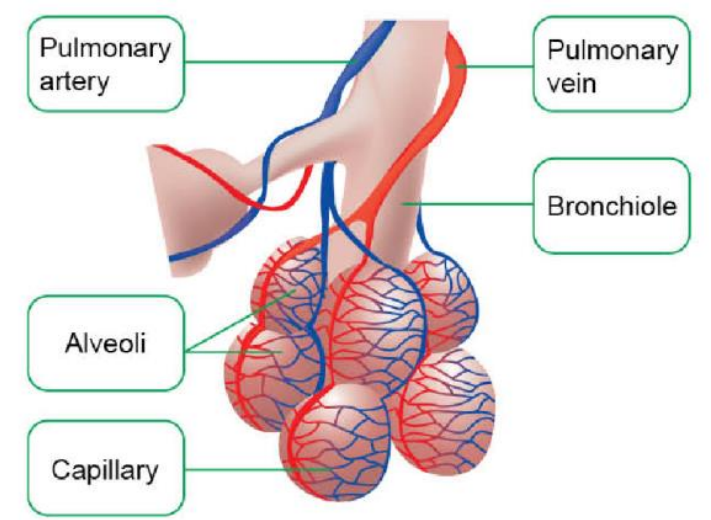


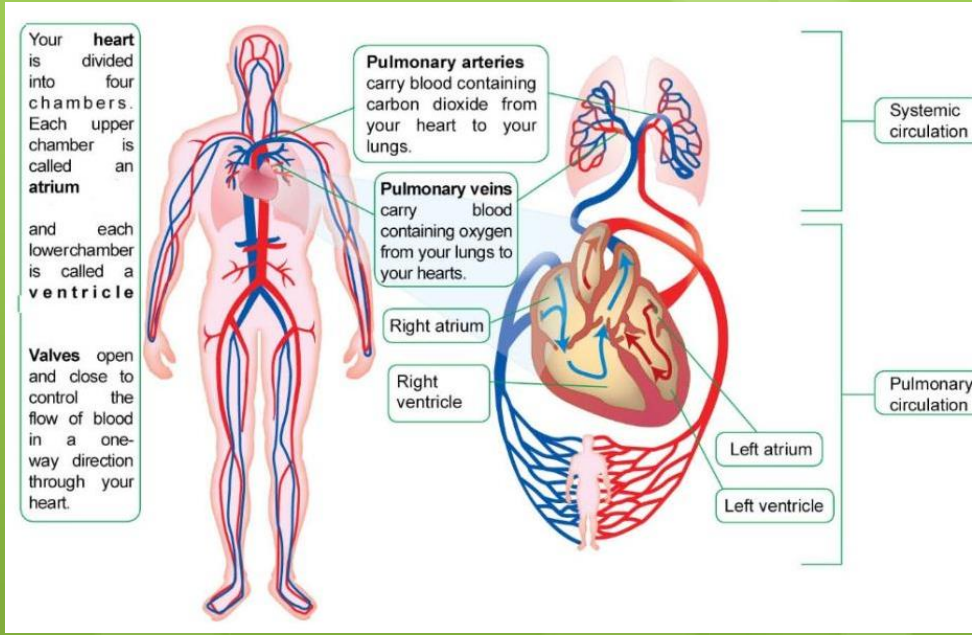
Circulatory System

Key Question
What does a healthy body mean?

Related Topics

- Cardiovascular Functioning：pulse rate and blood pressure (Booklet3.1C)
- Cardio-respiratory endurance(Booklet3.1D)
- Cholesterol (Booklet3.2A)
- Chronic diseases - cardiovascular diseases (Booklet6.3B)
- Noise pollution (Booklet 8.2D)
- Impacts of addiction to health(Booklet15D)



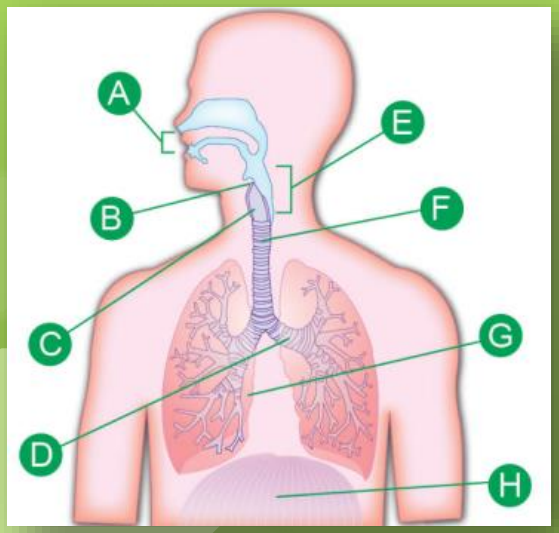


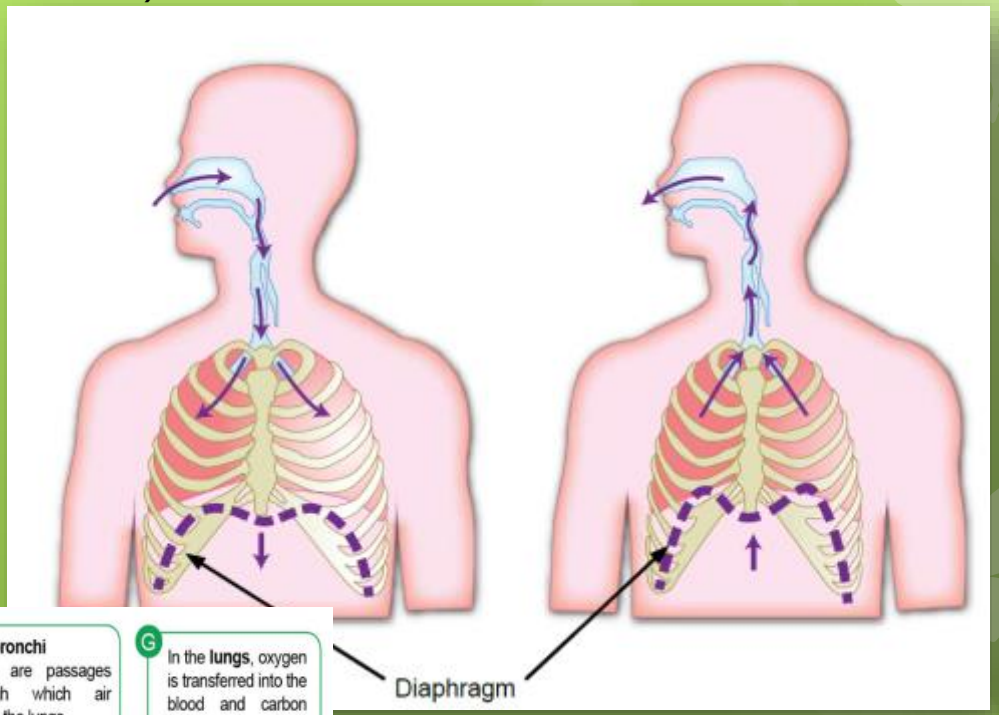
Respiratory System

Key Question
What does a healthy body mean?

Related Topics

- Communicable diseases (Booklet 6.2A)
- Air pollution (Booklet 8.2D)
- Impacts of addiction to health(Booklet15D)





A Air enters through the **nose** and **mouth**, which are lined with mucous membranes. Fine hairs called cilia trap dirt.

B The **epiglottis** is a flap of tissue that closes over the trachea when you swallow.

C The **larynx** contains the vocal cords.

D The **bronchi** are passages through which air enters the lungs.

E The **throat** has two passageways - one for air and one for food.

F The **trachea** directs air to the lungs.

G In the **lungs**, oxygen is transferred into the blood and carbon dioxide is removed from the blood.

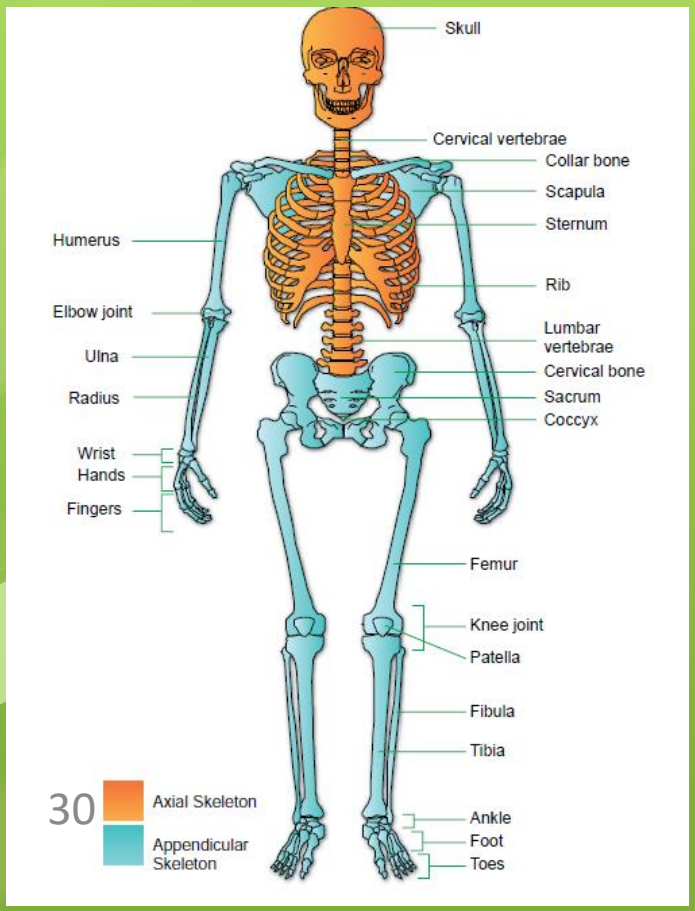
H The **diaphragm** is a large domeshaped muscle that separates the lungs from the abdomen.

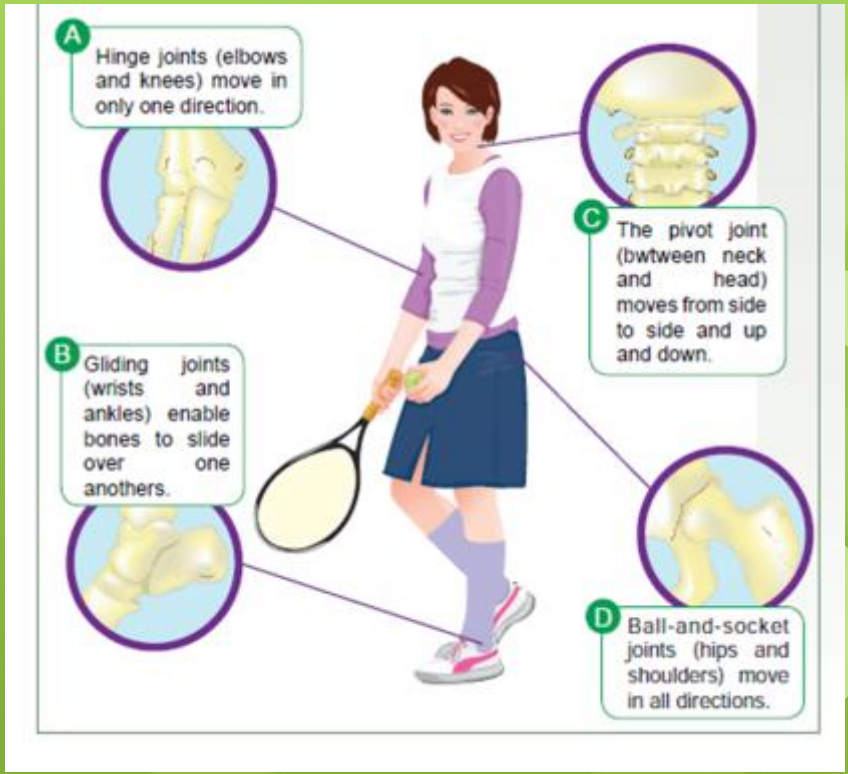
Skeletal System

Key Question
What does a healthy body mean?

Related Topics

- Deformity of bones in childhood (Booklet 1.1B1, 1.2B)
- Needs of elderly –bones being easier to break and fracture(Booklet 1.1E1, 1.2B)
- Flexibility (Booklet 3.1D)
- To protect bones and joints– Safety at sports (Booklet 9.3B)





Muscular System

Key Question
What does a healthy body mean?

Related Topics

- Muscular strength and muscular endurance(Booklet 3.1D)

Figure 3.19 Bending arm

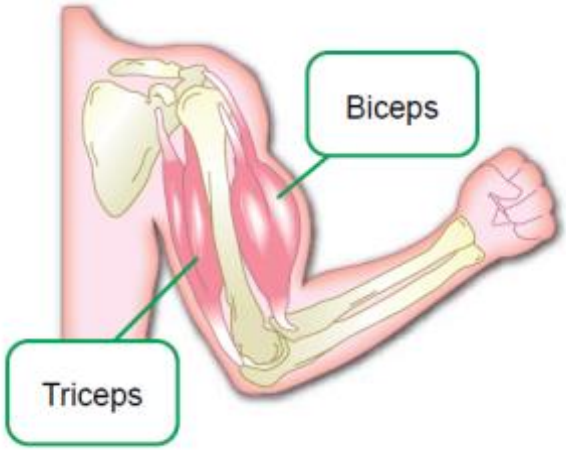
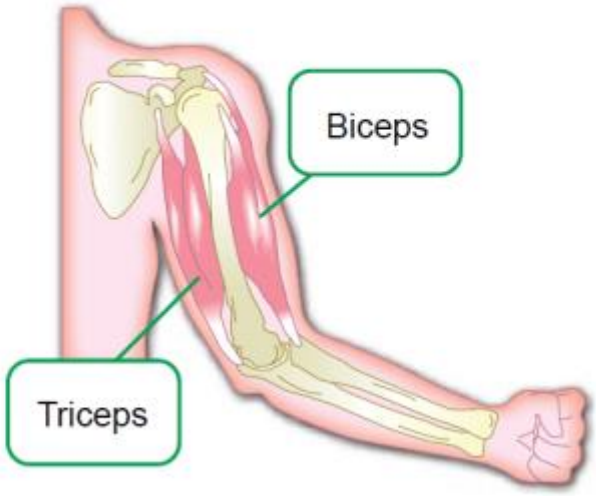


Figure 3.20 Straightening arm

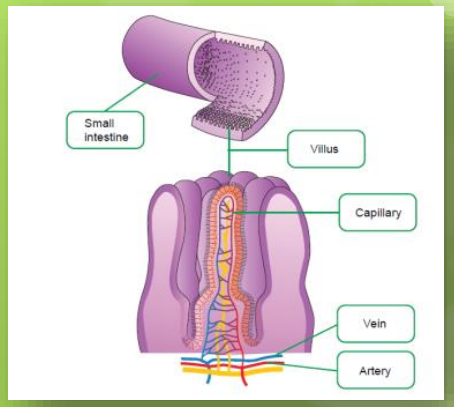


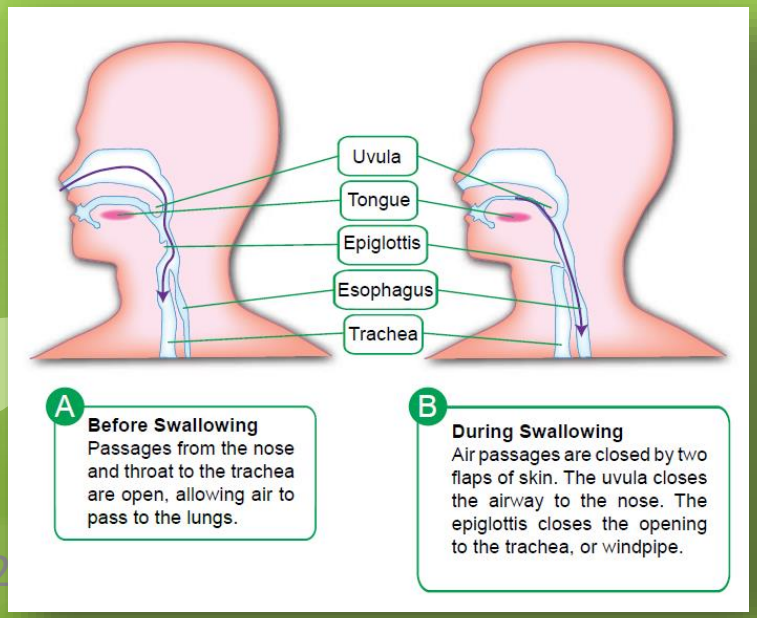
Digestive System

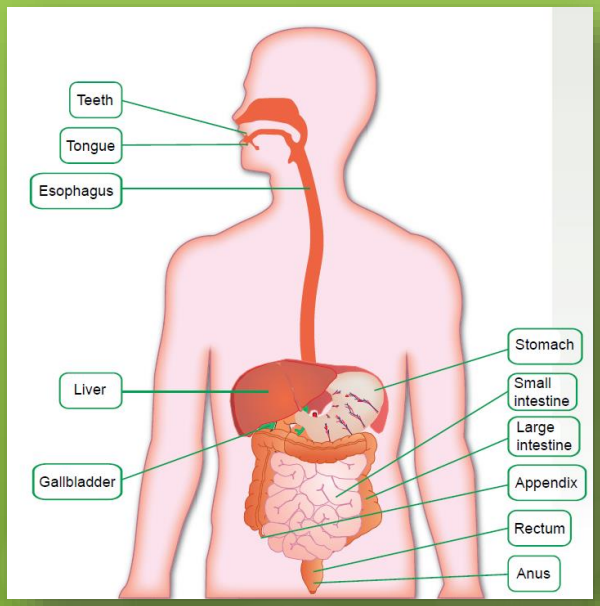
Key Question
What does a healthy body mean?

Related Topics

- Communicable diseases (Booklet 6.2A)
- Chronic illness (Booklet 6.3B)
- Water pollution(Booklet 8.2D)
- Impacts of addiction to health (Booklet 15D)





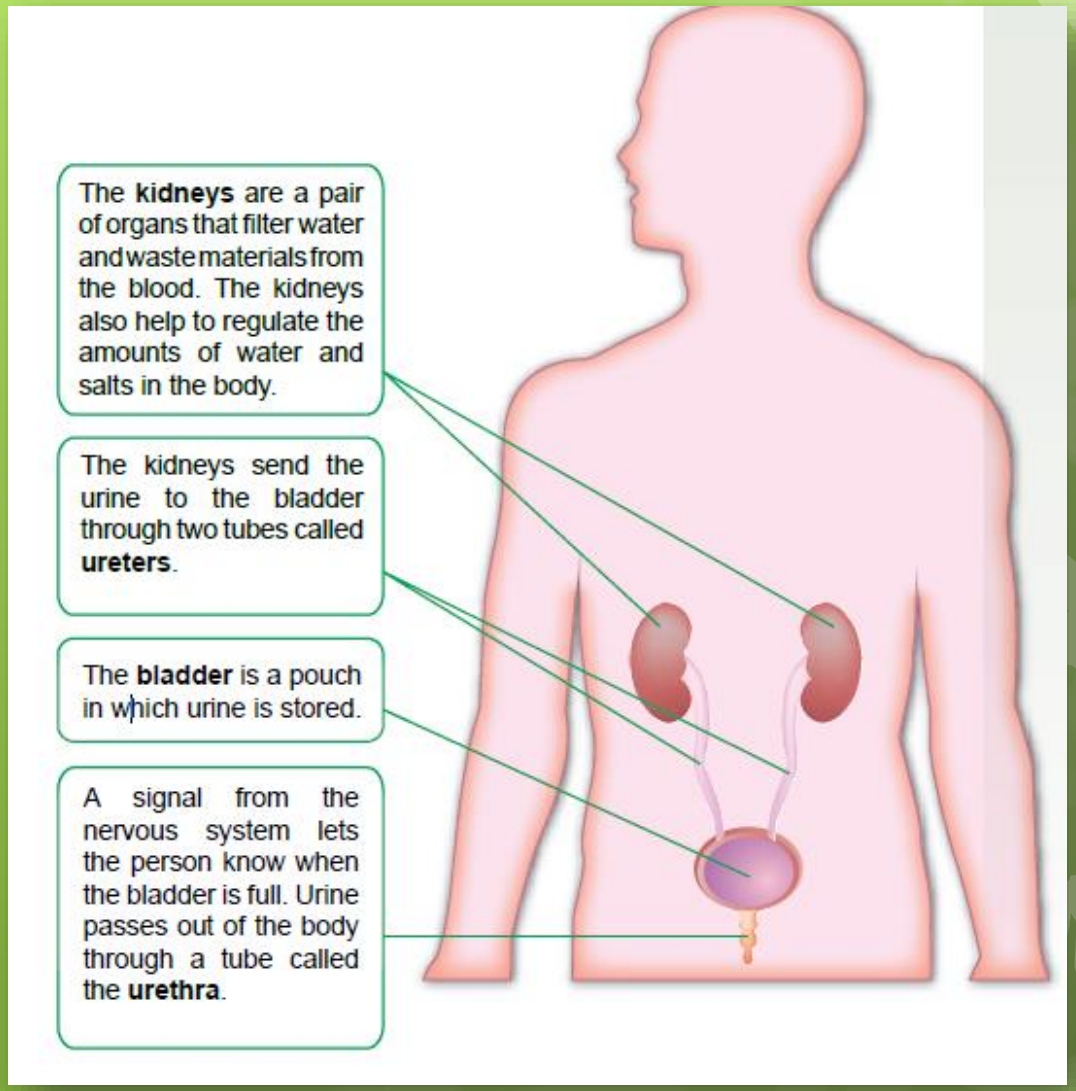


Excretory System

Key Question
What does a healthy body mean?

Related Topics

- Chronic illness (Booklet 6.3B)
- Impacts of addiction to health (Booklet 15D)

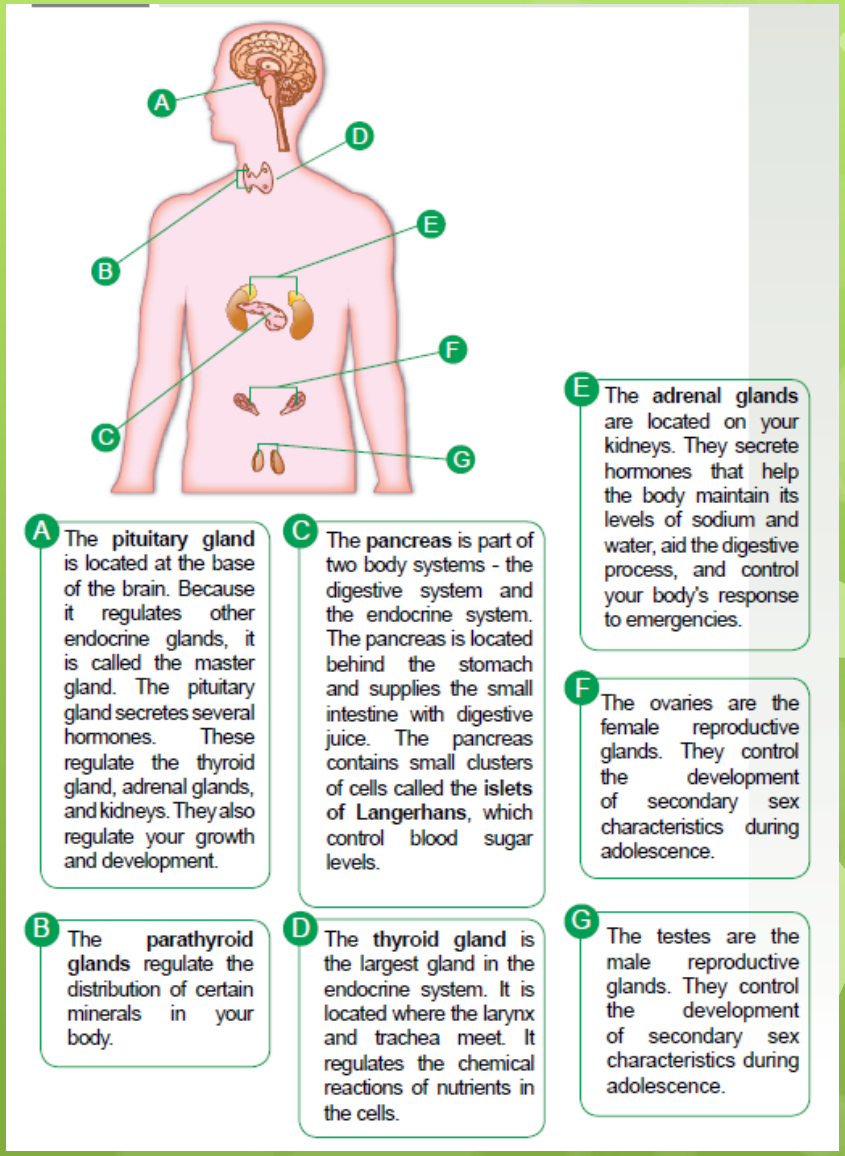


Endocrine System

Key Question
What does a healthy body mean?

Related Topics：

- Stress and stress reactions (Booklet 4.1)
- Adolescence (Booklet 1.1C)



Key Question
What does a healthy body mean?

Reproductive System

Related Topics :

- Sexually transmitted diseases (Booklet 6.4B)
- Adolescence(Booklet 1.1C)