

REVISE IT!

You might need to use Component 1 knowledge about physical factors in your assessment.

Inherited conditions

Genes are inherited by children from both their birth parents. Genetic inheritance is a physical factor that can have positive and negative effects on a person's health and wellbeing.

Inherited physical characteristics

Children inherit many physical characteristics from their parents, such as height, skin and eye colour, and hair type and colour. These characteristics can affect social and emotional wellbeing because they influence a person's **self-concept**, which is composed of their:

- **self-image** (how a person sees themselves)
- **self-esteem** (how they feel about themselves).

Genes and environment

Chromosomes carry **genes** that determine aspects of a person's physical makeup. A gene is a section of DNA that carries a **code**. Different versions of a gene, which **code** for variations of the same characteristic (such as blue eyes and brown eyes), are called **alleles**.

Environmental factors, such as diet, also have an effect on physical appearance. For example, a person may not grow to their full, genetically determined height if they do not have enough food.

Inherited conditions

Sometimes genes can be faulty. Conditions may be inherited when faulty genes are passed from one parent (if dominant) or both parents (if recessive).

Condition	Cause	Effects
Cystic fibrosis	The condition may be passed on when both parents have a faulty gene. A person's ability to make a CFTR protein, which moves water in and out of cells, is affected, resulting in a build-up of thick sticky mucus in the lungs and digestive system.	A person will have breathing problems requiring regular physiotherapy. They will have an increased likelihood of lung infections and loss of appetite.
Sickle cell disease	This is more common in people with African or Caribbean backgrounds. It may be passed on when both parents have the sickle cell gene. Sickle cell is a blood disorder that affects the development of red blood cells.	Red blood cells are usually round but in sickle cells they are 'sickle' shaped (like a crescent moon). At times, these may cause painful blockages in blood vessels, referred to as 'a crisis'. Organ damage may occur.

Genetic predisposition

Some people are **predisposed** (more likely) to develop conditions because of their genetic makeup, for example heart disease, cancer and diabetes.

Whether a person *actually* develops these conditions depends on **lifestyle and environmental factors**, such as diet and exercise, air quality and level of stress.

Effects of inherited disorders

Inherited conditions can affect the whole person:

- **Physical health** – body systems, growth and mobility.
- **Intellectual wellbeing** – learning, thinking, problem solving and decision making.
- **Emotional wellbeing** – how people feel about themselves.
- **Social wellbeing** – the ability to build relationships.

Now try this

Gemma, aged 14, has the inherited condition cystic fibrosis. She has regular physiotherapy to help clear her lungs of mucus and frequently spends time in hospital.

Describe possible effects of cystic fibrosis on Gemma's physical, intellectual, emotional and social wellbeing.

As well as the physical effects, think about the impact of missing school and how Gemma feels about herself.

Physical ill health

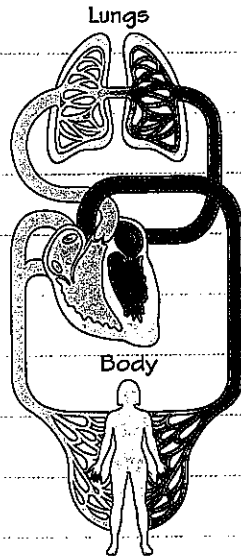
Physical ill health refers to illnesses and disorders which negatively affect a person's body systems. Common conditions that can cause ill health are cardiovascular disease, obesity and type 2 diabetes.

Cardiovascular system

The cardiovascular system refers to the heart, blood vessels and blood that is circulated around the body. When the heart does not function effectively it can cause disease.

Coronary heart disease is one of the main causes of death. It is caused by a build-up of fatty deposits in the arteries around the heart that may result in:

- heart attacks caused by blockage in blood flow
- angina, causing pain or shortness of breath when blood flow is restricted
- heart failure when the heart can no longer pump blood around the body.



☐ Oxygen-poor, carbon dioxide-rich blood

■ Oxygen-rich, carbon dioxide-poor blood

Strokes happen when the blood supply to the brain is cut off temporarily. This can cause muscle weakness or paralysis in one side of the body or even death.

Peripheral arterial disease is caused by a build-up of fatty deposits in the arteries of the legs. It causes pain, potential ulcers or weakness.

Type 2 diabetes

Type 2 diabetes is a serious and common condition. The condition occurs when the pancreas is not working properly and cannot make enough insulin. This causes the blood sugar levels to rise.

Symptoms include tiredness, urinating more regularly and excessive thirst. High blood sugar levels over time can cause damage to eyes, feet or the heart.

Risk factors

In 2019, in the UK there were around 4 million people with type 2 diabetes. (NICE, 2020)

Individuals are more likely to experience type 2 diabetes if they are:

- overweight or obese
- have a family history of the disease
- are of black African, Caribbean, or South Asian descent.

Obesity

People who are very overweight are described as obese. An NHS report (2020) shows more than half of adults in the UK are overweight or obese and 20% of year 6 children.

Obesity is often caused when the body stores excess energy as body fat because a person:

- eats more calories than the body needs
- does not take exercise to burn off body fat.

Impacts on health and wellbeing

- breathlessness
- sweating
- low self-esteem
- difficulty in carrying out tasks
- higher risk of serious conditions such as heart disease, type 2 diabetes and high blood pressure.

Now try this

Name **three** of the possible effects of coronary heart disease.

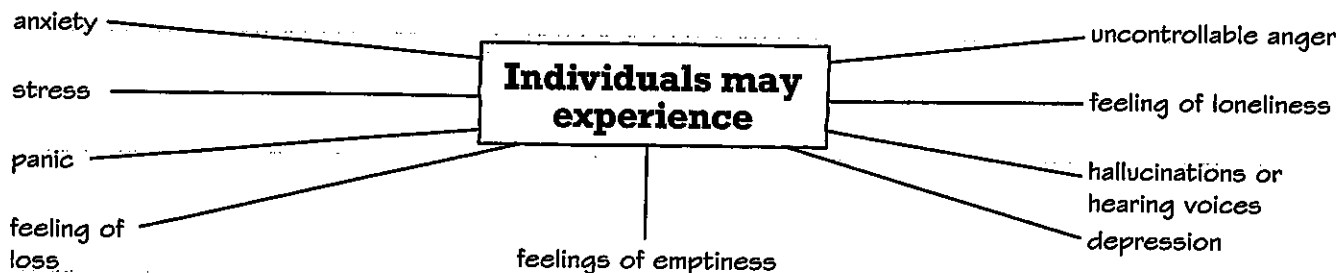


Fatty deposits prevent the blood from flowing properly.

Mental ill health

Mental health describes a person's psychological and emotional wellbeing. Events and circumstances that happen can cause mental ill health-effects; such as anxiety and stress.

Effects of mental ill health



Anxiety and stress

Stress happens when people experience:

- pressures at work
- exams
- financial difficulties
- life events and circumstances such as illness, relationship changes (marriage, divorce), moving home or bereavement.

Response

The body's response to stressful situations is a rise in the hormones cortisol and adrenaline (triggering the fight-or-flight response). Low-level or short-term stress can be positive, helping people to function better by boosting their concentration and thinking skills. Intense stress or stress over a longer period has negative, unhealthy effects on the body.

Effects of mental ill health on health and wellbeing

Physical	Increased heartbeat Muscle tension High blood pressure Heart disease Digestive problems Headaches Poor sleep patterns
Intellectual health	Poor concentration Forgetfulness
Emotional health	Difficulty controlling emotions – crying or getting angry Feeling insecure Negative self-concept Feeling anxious and frightened
Social	Isolation Breakdown of relationships or friendships

Now try this

Identify a situation in which you felt stressed, for example before an exam or when you experienced a challenging life event. List the effects it had on you.

Consider physical, intellectual, emotional and social effects.

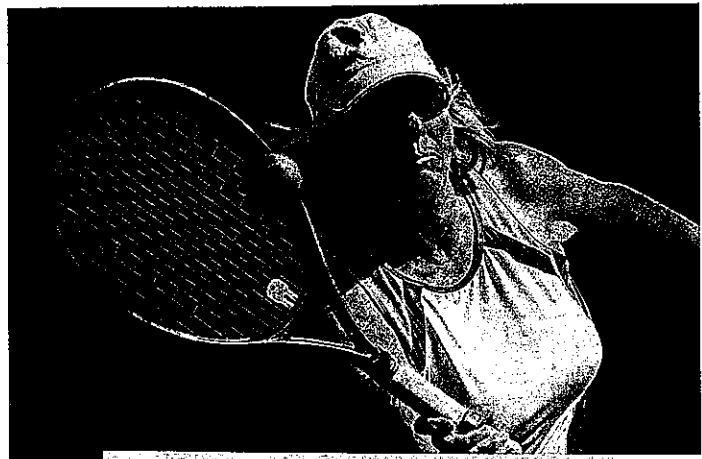
Had a look Nearly there Nailed it!

Physical abilities

Physical abilities describe how well a person can move and complete actions using their body strength and stamina; this determines how they carry out their daily life:

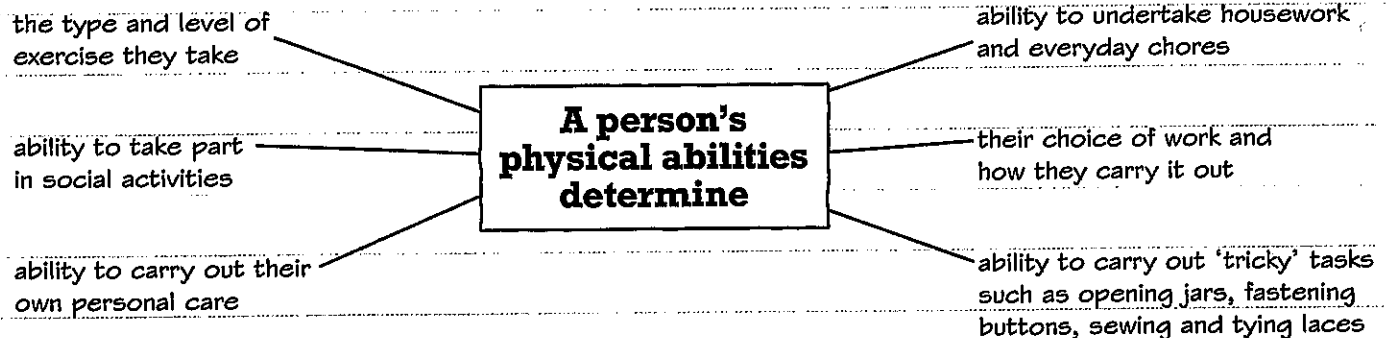
Physical skills

- Balance – ability to remain steady and control body movements.
- Strength – having power in muscles and joints to lift and move objects.
- Mobility – ability to move joints and muscles to move around freely.
- Stamina – sustained physical activity.
- Flexibility – ability to bend and twist.
- Fine motor skills – making movements in fingers, wrists and hands.



Strength, stamina, balance and flexibility are all important to play sports.

Effects of physical ability



Physical disability

This is a term used to describe conditions that affect part of a person's body, limiting their mobility and the functions of their body. It might be hereditary, acquired through accident or injury, or because of the ageing process.

Physical disability does not necessarily mean a person is not able to carry out tasks. They may need more time, support or equipment.

The impact of a physical disability

The loss of physical capacity results in the person having a reduced ability, or inability, to perform body movements. It may affect:

- standing or walking
- strength and stamina
- moving hands and arms
- control of muscles
- the use of small muscles in fingers.

Now try this

Give **two** examples of how difficulties in using small muscles in the fingers may impact on a person's daily life.

Think about the tasks you would find difficult if you didn't have flexibility or strength in your fingers.

Sensory impairment

Sensory impairment means the loss or partial loss of one of the senses: sight, hearing, smell or taste.

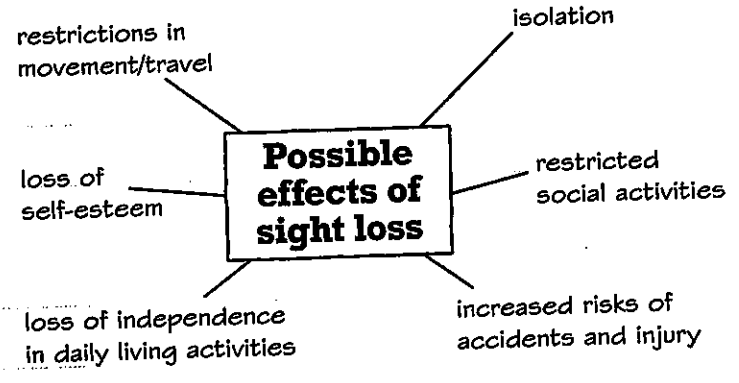
Types of visual impairment

- 1 Partially sighted – a degree of sight loss that cannot be rectified by glasses or contact lenses
- 2 Blindness – a total loss of sight

Causes

Causes of visual impairment may include:

- inherited conditions
- illness related, for example diabetes
- injury, for example work or sports
- age-related conditions such as macular degeneration or cataracts.



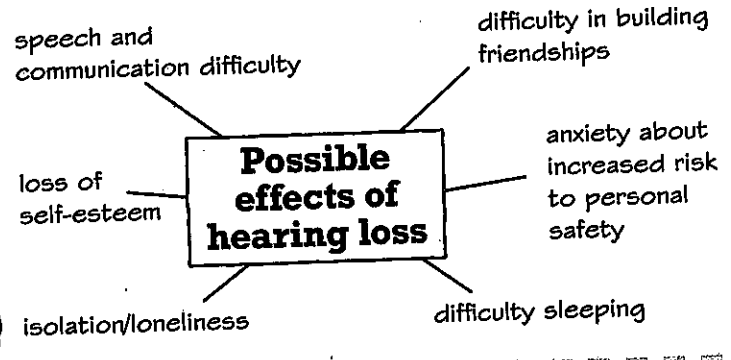
Types of hearing impairment or loss

- 1 Hearing impairment – when there is difficulty hearing
- 2 Hearing loss – when a person cannot hear sounds and it cannot be rectified by hearing aids

Causes

Causes of hearing impairment may include:

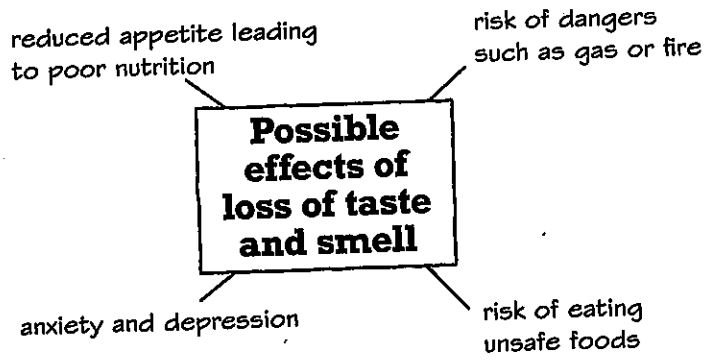
- inherited conditions
- injuries
- infection
- noise induced, for example machinery, music
- age-related loss.



Loss of taste and smell

The loss of taste and smell is often temporary but may be caused by:

- a virus or infection, for example coronavirus
- allergies
- polyps in the nose
- smoking
- drugs
- ageing.



Now try this

Give **two** reasons why a person with hearing impairment may experience isolation.

← Social isolation means having a feeling of not belonging.