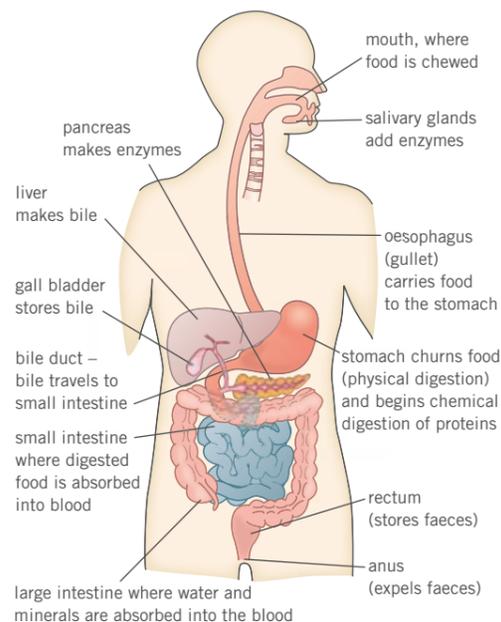


Diet

The digestive system



Bacteria live on fibre in your diet in the large intestine and make important vitamins (e.g., vitamin K).

Enzymes

Enzymes are special proteins that can break large molecules of nutrients down into small molecules.

Enzymes are known as biological **catalysts** – they speed up **digestion** without being used up.

There are three main types of enzyme involved in digestion:

| | Type of enzyme | | |
|---------|------------------------------|-------------|--------------------------|
| | carbohydrase | protease | lipase |
| digests | carbohydrates (e.g., starch) | protein | lipids |
| | ↓ | ↓ | ↓ |
| | sugars | amino acids | fatty acids and glycerol |

Nutrients

| Nutrient | Role in your body |
|-----------------------|---|
| carbohydrates | main source of energy |
| lipids | fats and oils provide energy |
| proteins | growth and repair of cells and tissues |
| vitamins and minerals | essential in small amounts to keep you healthy |
| water | needed in all cells and body fluids |
| fibre | provides bulk to food to keep it moving through the gut (not actually a nutrient) |

Starch

Add a few drops of iodine solution to the food solution.
Result: If the solution turns blue-black, the food contains starch.

Lipids

Add a few drops of ethanol to the food solution, shake it, and leave for one minute. Then pour the ethanol into a test tube of water.
Result: If the solution turns cloudy, the food contains lipids.

Food tests

Sugar

Add a few drops of Benedict's solution and heat the solution in a water bath.
Result: If the solution turns orange-red, the food contains sugar.

Protein

Add a few drops of copper sulfate solution and sodium hydroxide solution.
Result: If the solution turns purple, the food contains protein.

Effects of an unhealthy diet

A **balanced diet** is when you have the right proportions of the food groups to keep you healthy.

Eating an unbalanced diet can lead you to be:

underweight

Increased risk of:

- poor immune system
- lack of energy
- lack of vitamins and minerals.

overweight

Increased risk of:

- heart disease
- stroke
- diabetes
- some cancers.

vitamin and mineral deficient

Vitamin A deficiency can lead to night blindness.
Vitamin D deficiency can lead to rickets.

Effects of lifestyle on health

Drugs

Drugs are any chemicals that affect the way your brain and body work.

| Medical drugs | Recreational drugs |
|--|--|
| <ul style="list-style-type: none"> used in medicine benefit your health if used correctly used to treat symptoms or cure illness some have side effects <p>examples include: painkillers, antibiotics, and cough mixture</p> | <ul style="list-style-type: none"> taken for enjoyment/to relax/stay awake normally have no health benefits many can be harmful many are illegal <p>examples include: alcohol, caffeine, heroine, cocaine, tobacco</p> |

Alcohol

Alcohol is a depressant because it slows down your body's reactions.

Drinking large amounts of alcohol over a long time can cause:

- stomach ulcers
- heart disease
- reduced fertility
- brain damage
- liver damage (cirrhosis)

Drinking during pregnancy increases the risk of:

- miscarriage
- stillbirth
- premature birth
- low birth weight babies
- Fetal Alcohol Syndrome (FAS)

Smoking

Cigarette smoke is full of harmful chemicals including:

tar – clogs the lining of the lungs and alveoli, contains cancer-causing chemicals

nicotine – an addictive stimulant

carbon monoxide – stops blood from carrying oxygen.

Smoking can cause many different diseases, including:

- heart disease
- emphysema
- respiratory infections
- strokes
- lung cancer

Smoking during pregnancy increases the risk of miscarriage and low birth weight babies, and can also affect the fetus' development.

Addiction – When your body becomes used to the chemical changes caused by a drug and you need to take the drug to feel normal.

When a person who is addicted to a drug tries to stop taking it, they may suffer from sickness, nausea, stomach cramps, headaches, anxiety, and sweating. These are called **withdrawal symptoms**.



Key terms

Make sure you can write definitions for these key terms.

addiction anus balanced diet carbohydrase carbohydrate carbon monoxide catalyst deficiency digestion digestive system drug enzyme fibre food test large intestine lipid lipase mineral nicotine nutrient oesophagus protease protein rectum small intestine stimulant stomach tar vitamin withdrawal symptom