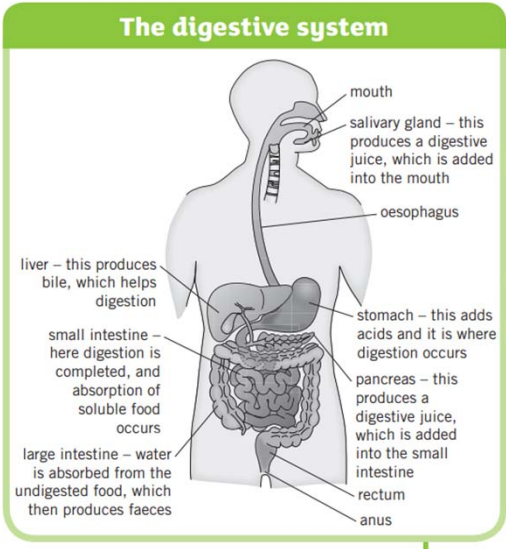


# Y8 Digestion



### Enzymes

- Enzymes are biological **catalysts**, they speed up the digestion of **nutrients**
- Each enzyme is specific to each nutrient
- The way the enzyme and nutrient bind with each other is called a lock and key model

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- Carbohydrases** break **carbohydrates** down into simple sugars
- Proteases** break **proteins** down into amino acids
- Lipase** breaks **lipids** (fats) down into fatty acids and glycerol

protein molecule → digestion → amino acid molecules

Deficiency diseases:  
When the body does not have enough of a certain nutrient.

Disease	Nutrient	Symptoms
Kwashiorkor	Essential nutrients, cause unknown	Inflamed skin, tiredness, poor growth, enlarged stomach, persistent infection
Rickets	Vitamin D and Calcium	Bone pain, poor growth, deformation of the skeleton
Scurvy	Vitamin C	Muscle and joint pain, bleeding and swelling of the gums
Anaemia	Iron	Tiredness, lack of breath, heart palpitations (noticeable heartbeats), pale complexion

### Nutrients

- A **balanced diet** involves eating the right amount of nutrients for your body to function
- Not eating enough of a nutrient means you have an unbalanced diet, and this can lead to a **deficiency**

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

**Food Tests**

**Starch test:** Add iodine liquid, if starch is present substance will change to a blue/black colour.

**Sugar/Glucose test:** Add benedict's solution to the substance. Warm in a water bath. If substance changes green/orange/red sugar is present.

**Protein test:** Add Biuret reagent. If substance changes to a purple colour protein is present.

**Fat test:** Wipe substance on filter paper. If paper becomes translucent fat is present. Alternatively add ethanol and water. Milky white emulsion appears in presence of fats.

**Overweight** people have a higher risk of: Heart disease, stroke, diabetes, some cancers

**Underweight** people often suffer from poor immune systems, tiredness and deficiencies.