Aerobic Respiration

Glucose + Oxygen ⟶ Carbon Dioxide + Water + Energy

(supplied to respiring cells by the bloodstream) (taken by blood to lungs) (passed into blood, lost as sweat, moist breath and urine.) (energy used for muscle contraction, metabolism and maintaining temp.)

Anaerobic Respiration

When muscles are subject to long periods of vigorous activity, they become fatigued - stop contracting efficiently, and hurt. If there isn't enough oxygen reaching your muscles, they use anaerobic respiration to obtain energy.

- Produces energy quicker than aerobic respiration
- Isn't very efficient - glucose don't break down completely.

Glucose (from the bloodstream) ⟶ Energy (small amount of energy released quickly and used for exercise activity) + Lactic Acid (accumulates in muscles making them feel tired and 'rubbery.)

Oxygen Debt - your body needs to break down the lactic acid; the oxygen needed is called an oxygen debt.
- when the muscles are fatigued, deep breathing is required to oxidise the lactic acid to carbon dioxide and water.

Exercise and the Body

During Exercise:
- heart rate increase
- arteries supplying your muscles dilate
- The rate and depth of breathing increases to remove the extra CO_2 produced.
- The supply of oxygen and sugar is increased (due to greater blood flow to exercising muscles) which speeds up removal of CO_2.
- Glycogen stored in your muscles is broken down to glucose to be used in respiration
- muscles start contracting harder and faster - need more glucose and oxygen to supply their energy needs.