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# The journey of a medicine

**How painkillers work** – when we are in pain or injured, a protein called COX2 releases chemicals called prostaglandins. These chemicals send a signal to your brain, telling you you're in pain. Painkillers like aspirin, ibuprofen and paracetamol bind to COX2, preventing it from producing any more prostaglandins. This reduces pain.

**Swallowing a tablet** – a common way for painkillers to enter our bodies is via swallowing or chewing.

**The heart** – the heart pumps the blood containing our medicines around our body to all the tissues and organs.

**Dissolved in the stomach** – all medicines need to be dissolved before they can be absorbed. Aspirin can be absorbed across the membranes of your stomach and small intestine, and enter your blood stream.

**Through the liver** – blood travels from your stomach to your liver, which removes harmful substances. Drugs like aspirin bind to proteins in your blood and pass through the liver undetected, meaning your liver doesn't dispose of it all straight away.

**Disposal** – five to six hours after taking the medicine, the liver will have completely removed it from our blood stream into the bile. This is then excreted from the body.

