

WHAT HAPPENS TO ALCOHOL IN THE BODY

SCIENCE/ ENVIRONMENTAL STUDIES 11 - 16 WORKSHEET 2

How alcohol enters the body

When someone swallows alcohol, it travels to the stomach and small intestine. The alcohol is absorbed through the lining of the stomach and intestine and passes into the bloodstream. It circulates to other parts of the body including the brain.

How quickly the alcohol is absorbed, and how much goes into the blood, depends on a number of factors including:

- the amount and type of alcohol in the drink
- how quickly the person is drinking
- whether they have a full or empty stomach (food slows down the absorption of alcohol into the bloodstream)
- body size and weight (the same amount of alcohol will have a larger effect on a smaller person)
- male or female (alcohol is distributed around the body in water - the female body has more body fat and less water than the male body so alcohol concentrations tend to be higher in females).

The amount of alcohol in someone's blood is measured by their BAC (blood alcohol concentration). BAC is usually measured as the number of milligrams (mg) of alcohol in 100 millilitres (ml) of blood.

Most of the alcohol a person drinks is metabolised (broken down) by the liver. It can break down about 8g of alcohol an hour in an average adult - that's around 1 unit an hour. Because the liver is the main organ breaking down alcohol, it's also one of the first parts of the body to be harmed by heavy drinking. Long term drinking kills off liver cells, leading to a disease called 'cirrhosis'. Long term excessive drinking can also lead to liver cancer.

How alcohol leaves the body

- Liver: about 90% of the alcohol is broken down by the liver
- Kidneys: 2-4% leaves the body in urine made by the kidneys
- Sweat glands: 2-6% leaves in perspiration from sweat glands
- Lungs: 2-4% is expired in the breath
- Mouth: 1-2% leaves in saliva

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ACTIVITY ONE

1. On the diagram of the adult human body, add a label to the two areas of the body from which alcohol is absorbed after swallowing. The lines from each area have already been added for you.
2. Alcohol is carried in the bloodstream to the main organs of the body. Label the organ which is affected by alcohol leading to blurry vision and lack of coordination.
3. Label the organ which metabolises most of the alcohol in the body.
4. Around 2-4% of alcohol leaves the body in urine. Label the organs which make urine.
5. A small percentage of alcohol also leaves the body in sweat, breath and saliva. Label the three areas of the body involved.

