

Alcohol and Effects on the Body

Age Range:

12+, Years 9+,
KS3, KS4

Topics Covered:

Knowledge on Alcohol and the effects on the body

Time:

20 - 40 minutes

Equipment needed:

'Alcohol and the Body' sheet, a clear space, 2 signs one labelled 'True' and the other 'False'.

Learning Outcomes:

- Young people have increased knowledge of the legal and advised limits around alcohol use.
- Young people have increased knowledge of the health risks involved in the misuse of alcohol including liver damage, links with obesity and heart disease.
- Young people have an increased understanding of the reasons why people should drink responsibly.

This supports key concepts for PSHE education in personal wellbeing including:

- Personal Identities
- Healthy lifestyles
- Risk
- Relationships

An exercise to increase knowledge about the effects of alcohol on the human body.

Introduction

This exercise uses creative thinking and reflective learning to help introduce young people to the topic of alcohol and learn about the physical effects on the body.

Exercise

This exercise uses 12 key statements about the effects of alcohol on the body as an introduction to understanding the physical effects of alcohol.

Place two cards out in a line stretching across the whole length of the room. On the left of the room place a sign reading 'FALSE' and on the right a sign reading 'TRUE'.

Read out the first statements from the 'Alcohol and the Body' sheet included and ask the group to decide whether they think that the statement is true or false. Ask them to move to the left hand side near the sign if they think it is 'FALSE' and to the sign on the right if they think that it is 'TRUE'. Use the whole length of the line so ask learners to stand along it depending on how confident they feel about their answer. So, if you they think the statement is definitely true then they should directly next to the right hand sign, if they are undecided or 50:50 then stand closer to the middle and so on. Encourage the group to debate their different views. Ask for volunteers to explain their choices to generate debate and discussion on the different answers. Work your way through all 12 statements.

Summary

Ask the group to see how many of the facts that they learned in the activity they can remember. Write these up on the board. You could also consolidate the learning by asking them each to do the activity again as a quick quiz where they write down the answers and swap with another learner or hand these in to be marked so you can assess their knowledge.

You could also invite someone from a local alcohol organisation to give a talk or provide literature on the effects of alcohol. There are some useful websites such as www.drinkaware.co.uk and www.talktofrank.com that can provide further information. There is an interesting article that was published a few years ago in The Independent which is available online and reproduced later in this document that could be used as a further exploration of the effects of alcohol over the course of a night as well as the short and long term effects.

ALCOHOL AND THE BODY

1. Alcohol is a stimulant and provides temporary improvements in mental and physical function.

FALSE – Alcohol isn't a stimulant, it's a depressant. That's why drinking too much often leads to impaired judgement, slurring of speech, a tendency to violent behaviour and loss of short-term memory. As alcohol also irritates the stomach, heavy drinking can cause sickness, nausea, and sometimes diarrhoea. Alcohol also has a dehydrating effect, which is the main reason why excessive drinking can lead to a hangover. It can also lead to temporary impotence in men.

2. Every year, 5,000 young people aged 11 to 17 are admitted to hospital as a result of drinking.

FALSE – In fact it is twice that number with 10,000 young people aged 11 to 17 admitted to hospital each year as a result of drinking. Over half of these, 6000 in fact, are young people under 16.

3. The weekly allowance of alcohol for men and women is 20 units.

FALSE – The weekly allowance is actually 14 units for men and women! The guidelines actually state that there's no safe amount of alcohol to be drinking, however to reduce risk they recommend that people cap their drinking to just 14 units per week. These units can't be saved up and consumed at once, however. They should be drunk over a period of 4-5 days with at least 2 days off!

4. Binge drinking is when someone drinks between 6-8 units or more?

TRUE – Binge drinking for a woman is 6 units or more and for a man is 8 units or more. It's slightly less for women as they have a higher fat to water ratio in their bodies compared to men! Binge drinking can increase risks for heart and liver disease, high blood pressure, type 2 diabetes and other health problems. Doctors say that due to binge drinking they are seeing much younger people with forms of liver diseases that they used to only see in people in their fifties or sixties.

5. Long term drinking helps the heart to pump blood more effectively.

FALSE – Long-term drinking and heavy alcohol consumption is linked with weakness of the heart muscle, known as cardiomyopathy. That means the heart can't pump blood as efficiently. Some research claims that red wine can help to keep the heart healthy but this is in small amounts.

6. Up to one in three adults drinks enough alcohol to create a risk of developing alcohol-related liver disease.

TRUE – According to drinkaware.org, up to one in three adults drinks enough alcohol to create a risk of developing alcohol-related liver disease. Rates of liver disease are dropping in the rest of Europe but are rising in the UK.

7. Experts estimate that alcohol is responsible for at least 20,000 deaths in the UK each year.

FALSE – Experts estimate alcohol is responsible for at least 33,000 deaths in the UK each year.

8. Women are more susceptible to alcohol-related liver damage than men.

TRUE – According to drinkaware, women are more susceptible to alcohol-related liver damage than men with one study suggesting the risk is almost 50% higher.

9. Heavy drinking causes a drop in testosterone levels in men, causes testicles to shrink and causes impotence.

TRUE – It can also affect women's fertility as their menstrual cycles can be disrupted by drinking alcohol. Studies have shown that women who drink up to five units of alcohol a week are twice as likely to conceive as those who drink 10 or more.

10. Alcohol is a poison.

TRUE – Alcohol is a poison and too much of it can kill. In fact over a 150 people die each year from acute alcohol poisoning. Acute alcohol poisoning is often caused by binge drinking as the alcohol content in the blood becomes dangerously high. More than 500 people a week are admitted to hospital with alcohol poisoning.

11. Liver damage due to alcohol nearly always leads to permanent damage or death.

FALSE – Although very serious there are different levels of liver damage due to alcohol. Some of the most common forms of liver damage such as 'fatty tissue' can be treated through abstaining from drinking alcohol. Other forms may require a liver transplant. Although, if somebody has liver damage and continues to drink alcohol they will not be allowed to have a liver transplant and the more advanced forms of damage can often lead to death.

12. If someone is suffering from alcohol poisoning you should let them sleep it off or give them coffee.

FALSE – You should never leave someone to 'sleep it off', as their condition could still be getting worse. Their blood alcohol level continues to rise even after they've stopped drinking, as alcohol in the digestive system will continue to be absorbed into the bloodstream. Coffee is also a bad idea as it will make the person even more dehydrated. Try to keep the person sitting up and awake, give them water, keep them warm and monitor their symptoms. If there are any concerns then you should call 999.

WHAT ALCOHOL REALLY DOES TO YOUR BODY -

Taken from The Independent newspaper

From heart to liver and brain to kidneys, a night on the tiles makes demands on us that we don't fully realise. Peta Bee reports

6PM ONE UNIT: IT'S BEEN A LONG DAY...

BRAIN: From the first sip, alcohol is absorbed into the bloodstream and reaches the brain. Although you won't be aware of it, there is an impairment of brain function, which deteriorates further the more you drink. Cognitive abilities that are acquired later in life, such as conduct and behaviour, are the first to go. Early on you will experience mild euphoria and loss of inhibition, as alcohol impairs regions of the brain controlling behaviour and emotion. Most vulnerable are the brain cells associated with memory, attention, sleep and coordination. Sheer lack of mass means that people who weigh less become intoxicated more quickly, and women will feel the effects faster than men. This is also because their bodies have lower levels of water.

HEART: Your pulse quickens after just one unit. Alcohol is a vasodilator - it makes the peripheral blood vessels relax to allow more blood to flow through the skin and tissues, which results in a drop in blood pressure. In order to maintain sufficient blood flow to the organs, the heart rate increases. Your breathing rate may also speed up.

8PM FIVE UNITS: WHOSE ROUND IS IT THEN?

DIGESTIVE SYSTEM: The Government advises men to drink no more than three to four units a day and women no more than two to three, so after two pints of normal-strength beer (four units) or a large glass of red wine (3.5 units) we have already exceeded our healthy guidelines. The alcohol is absorbed through the stomach and small intestine and if you are not used to it, even small amounts of alcohol can irritate the stomach lining. This volume of alcohol also begins to block absorption of essential vitamins and minerals.

SKIN: Alcohol increases blood flow to the skin, making you feel warm and look flushed. It also dehydrates, increasing the appearance of fine lines. According to Dr Nicholas Perricone, a dermatologist, even five units will lead to an unhealthy appearance for days.

11PM 10 UNITS: SORRY, WHAT WAS YOUR NAME AGAIN?

LUNGS: A small amount of alcohol speeds up the breathing rate. But at this level of intoxication, the stimulating effects of alcohol are replaced by an anaesthetic effect that acts as a depressant on the central nervous system. The heart rate lowers, as does blood pressure and respiration rates, possibly to risky levels - in extreme cases the effect could be fatal. During exhalation, the lungs excrete about 5 per cent of the alcohol you have consumed - it is this effect that forms the basis for the breathalyser test.

1AM 15 UNITS: LET ME TELL YOU ABOUT MY EX...

LIVER: Alcohol is metabolised in the liver and excessive alcohol use can lead to acute and chronic liver disease. As the liver breaks down alcohol, by-products such as acetaldehyde are formed, some of which are more toxic to the body than alcohol itself. It is these that can eventually attack the liver and cause cirrhosis. A heavy night of drinking upsets both the delicate balance of enzymes in the liver and fat metabolism. Over time, this can lead to the development of fatty globules that cause the organ to swell.

It is generally accepted that drinking more than seven units (men) and five units (women) a day will raise the risk of liver cirrhosis.

3AM 20 UNITS: WHERE AM I? I NEED TO LIE DOWN

HEART: More than 35 units a week, or a large number in one sitting, can cause 'holiday heart syndrome'. This is atrial fibrillation - a rapid, irregular heartbeat that happens when the heart's upper chambers contract too quickly. As a result, the heartbeat is less effective at pumping blood from the heart, and blood may pool and form clots. These can travel to the brain and cause a stroke. Atrial fibrillation gives a person nearly a fivefold increased risk of stroke. The effect is temporary, provided heavy drinking is stopped.

BLOOD: By this stage, alcohol has been carried to all parts of the body, including the brain, where it dissolves into the water inside cells. The effect of alcohol on the body is similar to that of an anaesthetic - by this stage, inhibitions are lost and feelings of aggression will surge.

THE MORNING AFTER: CAN YOU PLEASE JUST SHUT UP...

BRAIN: Alcohol dehydrates virtually every part of the body, and is also a neurotoxin that causes brain cells to become damaged and swell. This causes the hangover and, combined with low blood-sugar levels, can leave you feeling awful. Cognitive abilities such as concentration, coordination and memory may be affected for several days.

DIGESTION: Generally, it takes as many hours as the number of drinks you have consumed to burn up all the alcohol. Feelings of nausea result from dehydration, which also causes your thumping headache.

KIDNEYS: Alcohol promotes the making of urine in excess of the volume you have drunk and this can cause dehydration unless extra fluid is taken. Alcohol causes no damage or harm to the kidneys in the short term, but your kidneys will be working hard.

ONE YEAR ON: WHERE DID IT ALL GO WRONG?

REPRODUCTIVE ORGANS: Heavy drinking causes a drop in testosterone levels in men, and causes testicular shrinkage and impotence. In females, menstrual cycles can be disrupted and fertility is affected. Studies have shown that women who drink up to five units of alcohol a week are twice as likely to conceive as those who drink 10 or more. It is thought it may affect the ability of the fertilised egg to implant.

BRAIN: Over time, alcohol can cause permanent damage to the connection between nerve cells. As it is a depressant, alcohol can trigger episodes of depression, anxiety and lethargy.

HEART: Small amounts of alcohol (no more than a unit a day) can protect the heart, but heavy drinking leads to chronic high blood pressure and other heart irregularities.

BLOOD: Alcohol kills the oxygen-carrying red blood cells, which can lead to anaemia.

CANCER: Excessive alcohol consumption is linked to an increase in the risk of most cancers. Last week, Cancer Research UK warned how growing alcohol use is causing a steep rise in mouth cancer cases.