Alcohol

Short term:

Aggressive behaviour

Vomiting

Stop breathing

Possible death

Long term

Liver damage

Deficiency diseases

Brain damage

Small amounts of alcohol cause a person to feel relaxed and less intimidated. It can therefore stimulate people. Further consumption has a depressant effect, making uncoordinated reactions and impaired speech.

It is a diuretic, which means it causes more urine to be produced. This leads to dehyr cation which contributes to a hangover. It also makes blood vessels dilate, leading to beat loss.

Alcohol slows a person's reaction times, gives a false server of confidence and affects a person's decision making ability.

Men should drink no more than I to to per day and workin should drink no more than 3 units per day.

Like all drugs, alcohol is broken down, or metabolised by the liver. Over time, heavy drinking damages liver cells, causing them to produce fibrous scar tissue which blocks liver function. This is a disease called cirrhosis. Heavy drinkers are also at risk of cancer and damage to the brain, kidney and immune system.

In the digestive system – cancer of mouth and oesophagus and inflammation of the digestive tract.

Alcohol interferes with heart beats.

It causes high blood pressure.

Coronary heart disease is also caused by alcohol.

It prevents the immune system from working properly ending in them suffering from infections.

The overall impact of legal drugs on health is much greater than the impact of illegal drug because more people use them.

Strokes/ heart attacks

Mood swings

Liver damage

Reduced breast size

Urinary and bowel problems

Blood clots

Hear disease

High blood pressure

Bloating

Nausea

Aching joints

Aggressiveness

Increased risk of tendonitis

Enlarged clitoris

Increased facial and body hair





Anaerobic

This is respiration without oxygen.

If oxygen levels in your muscles fall too low the cells will switch to anaerobic respiration.

Glucose – lactic acid + energy

Less energy is released in anaerobic respiration as the glucose is only partially broken down.

Chromosomes, DNA and genes

Allele – a different form of the same gene, e.g. eye colour.

Large structures such as hair and nails are made from proteins

Proteins form the basis for many tissues, such as bone, brain and muscle

Within cells, proteins form a large part of structures such as mitochondria

Proteins control what can enter and leave the cell

Proteins produce the colour of your eyes, hair and skin



Cell division

Mitosis

Normal cell division, formation of new body cells, e.g. growth and repair.



In the graph of a population size, the line representing the predator would be the similar shape of the prey line but shifted a little to the right.

Pollution indicators

Human activities pollute the air and water. Certain animal and plant species are affected by pollution. They can be used to indicate the levels of a pollution in a particular habitat. These are called bioindicator species!

Air Pollution

Combustion of fossil fuels is the most common source of air pollution, i.e. vehicle engines and power stations. Sulfur dioxide is released if the fuel contains sulfur compounds and irom Notesale.co.uk 29 of 38 contributes to acid rain.

Linchens:

Natural indicators Grow ir exposed places e.g rocks

They absorb rainwater

air pollutants dissolved in the rainwater can damage lichens

Bushy lichens need really clean air = this species indictes no air pollution- no sulfur dioxide in air

Leafy lichens can survive a small amount of air pollution = this species indicates a small amount of air pollution

Crusty lichens can survive in more polluted air = indicates high sulfur dioxide concentration in air

No lichens growing = often a sign that air is heavily polluted with sulfur dioxide

the pressure of the different solutions
that particles move in both directions through the membrane. Changing the pressure or the concentration on one side of the membrane will change the movement of the particles until equilibrium is reached. Root hair cells also absorb mineral ions by active transport: The concentration of minerals in the soil is very low. They dissolve in water and move around the soil in solution. Minerals cannot be absorbed by osmosis (which is the movement of water only) or diffusion (because the minerals are in very low concentration). The root hair cells have carrier molecules on their surface that pick up the minerals and move them into the cell against the concentration gradient. This requires energy, and is called active transport. How are dissolved materials transported around the body? The heart pumps blood around the body. Blood flows from the heart to the organs through arteries and returns through veins. In the organs, blood flows through capillaries. Substances needed by cells in the body tissues pass out of the blood, and substances produced by the cells pass into the blood through the walls of the capillaries. There are two separate circulation systems, one to the lungs and one to all the other organs of the body. The blood is a liquid tissue consisting of:
Plasma
Red blood cells
White blood cells
Platelets AQA B3 revision Blood plasma transports:
Carbon dioxide from the organs to the lungs
soluble products of digestion from the small intestine to other organs \Box urea from the liver to the kidneys \Box hormones Red blood cells transport oxygen from the lungs to the organs. Red blood cells have no nucleus. They are packed with a red pigment called haemoglobin. In the lungs oxygen combines with oxygen to form oxyhaemoglobin. In other organs oxyhaemoglobin splits up into haemoglobin and oxygen. White blood cells ingest and destroy pathogens, produce antibodies to destroy pathogens, and produce antitoxins that neutralise the toxins released by pathogens. Platelets are irregularly shaped bodies. They help to form clots to stop bleeding. AQA B3 revision AQA B3 revision bleeding. exercise affect the exhanges taking place within the body? During exercise affect the exhanges taking place within the body? and depth of breathing increases and arteries supplying the prosterial ate. Blood flow to the muscles is increased (as well as the supply of sugar an oxygen), and the rate of removal of carbon dioxide is increased. Energy released through espiration is used to solbe muscles to contract. Respiration happens in mitochondrin in cells. Glycogen stores in the muscles are used during exercise. Respiration score process of breaking down grucose to release energy: Aerobic respiration uses of generative success + oxygen > bon cockide + water (+energy) This is the most efficient way to release energy from glucose. Anaerobic respiration happens when there is not enough oxygen available: glucose \diamond lactic acid (+energy) This is not the best way to release energy from glucose – it is a last resort. Poisonous lactic acid builds up in the muscles and causes painful cramps. When exercise stops there is an oxygen debt – you must keep breathing in order to get oxygen to the muscles and oxidise the lactic acid into carbon dioxide and water. The kidneys Our bodies need to get rid of waste products. Three waste products our bodies must excrete are CO2, urea and sweat. This is known as homeostasis (controlling conditions inside the body). AQA B3 revision The lungs breathe out CO2. The liver produces urea. The kidneys make urine. The skin sweats. Liver Urea (a waste product from the breakdown of amino acids) is produced in the liver. Urea is toxic in high concentrations, although the liver releases it into the blood stream to be filtered out by the kidneys. Kidneys We take in water from food and drink, and water is a waste product of respiration. We lose water in sweat, faeces, urine and breathing out. For our cells to work properly their water content must be maintained at the correct level. Our kidneys help us to maintain that balance. Stages of blood filtration in the kidneys: Stage 1: Ultrafiltration. Blood is brought to the kidneys to be filtered – blood passes through tiny tubules and water, salt, glucose and urea are squeezed out. AQA B3 revision Stage 2: Selective reabsorption. The kidneys send all of the glucose and as much water and salt as the body needs into the blood. Sugar and dissolved ions may be actively absorbed against a concentration gradient. Stage 3: Waste. Water, salt and urea are left - this is urine. Urine is sent to

the through the ureter to the bladder where it is stored before being excreted. Controlling water content: The amount of urine produced can be affected by water intake, heat and exercise. The concentration of urine is controlled by anti-diuretic hormone (ADH) produced by pituitary gland. ADH production is controlled by a negative feedback mechanism: AQA B3 revision Kidney failure: Sometimes the kidneys can fail due to infections, toxic substances or genetic reasons. A patient with kidney failure will soon die unless there is a way to rid the body of the urea and excess salt. A kidney dialysis machine provides an artificial kidney for the sufferers of kidney failure. The patient must use a dialysis machine for 3-4 hours three times a week. The patients' blood flows alongside a partially permeable membrane, surrounded by dialysis fluid which contains the same concentration of dissolved ions and glucose as the blood (this ensures that glucose and useful mineral ions are not lost) lons and waste can pass through, but big molecules like blood cells and proteins can't pass through (like in the kidneys). Dialysis removes urea and maintains blood sodium and glucose levels. Instead of dialysis a kidney could be transplanted into the patient. This option is cheaper than dialysis but it requires a donor (a normal person can still function with one kidney). The new kidney might be rejected by the body's immune system. To prevent rejection of the transplanted kidney a donor kidney with a 'tissue-type' similar to the recipient is used and the patient can take immunosuppressant drugs. AQA B3 revision Transplanted kidneys only work for around 9 years, then the patient has to return to dialysis. Dialysis Kidney Transplant Advantages
Can be carried out at home if the patient owns a dialysis machine \Box No hospital visits are required \Box Longer living life \Box Fewer diet and fluid restrictions
More energy Better quality of life Disadvantages
Takes up a lot of time 🗆 Risk of infection 🗆 Side effects – nausea, vomiting, headaches, muscle cramps depression 🗆 Surgery risks 🗆 Risk of rejection 🗆 Need to take anti-rejection drugs 👩 life Mycoprotein is a low-fat, protein-rich food suitable for vegetarians. It is the fungus Fusarium. The fungus grows and reproduces rapidly on a those stress supply (sugar syrup) in a fermenter. It requires aerobic conditions to grow the las doubles every 5 hours or so. The biomass is harvested, purified and dried to leave a rober of a colour and racours are added to enhance it. Fuels from fermentation Bicry's, a finimable mixicre of gate (mostly methane), forms when bacteria break down i swaste material of dead and hais or plants in anaerobic conditions. Animal waste, Pad al mal and plant meridian agarden waste all contain carbohydrates which make them a good energy source for biogas generators. They tend to work best at around 30°C so are usually in hot countries. The reactions that take place are exothermic, so if kept insulated the generator can be used in a cold country. 10kg of dry dung can produce 3m3 of biogas, which can fuel 3 hours of cooking, 3 hours of lighting, or 24 hours of running a fridge. The leftovers that aren't converted to gas can be used as fertiliser. In China, vegetables, human and animal faeces and urine are used, this produces low quality gas and high amounts of fertiliser. AQA B3 revision In India only animal waste is fed in (there are taboos against using human waste), this produces high quality gas but little amounts of fertiliser. Biogas can be produced on a large scale, or on a small scale. For example, a small biogas generator can be used to supply the energy needs of a family, or the waste of a sugar factory or sewage works can be used to power a village or town. Ethanol-based fuels Sugar cane crops can grow fast – 4-5m per year. Their juice is rich in carbohydrates like sucrose. The starches of Maize can be broken down into glucose by using carbohydrase enzymes. If the sugar rich products of sugar cane or maize are fermented with yeast anaerobically, the sugars break down into ethanol and water. Ethanol is extracted by distillation and used as a car fuel. Some cars (e.g. in Brazil) run on a mixture of ethanol and petrol (called gasohol - 90% petrol, 10% ethanol). Ethanol does not produce toxic gases when burned and so does not pollute as much as other fuels (which produce CO and SO2). Countries like America do not have enough maize crops to produce large amounts of ethanol, and poorer countries that do have the crops don't have the money to buy the equipment. Using a fuel like ethanol is called carbon neutral because you are not contributing to