

Drugs

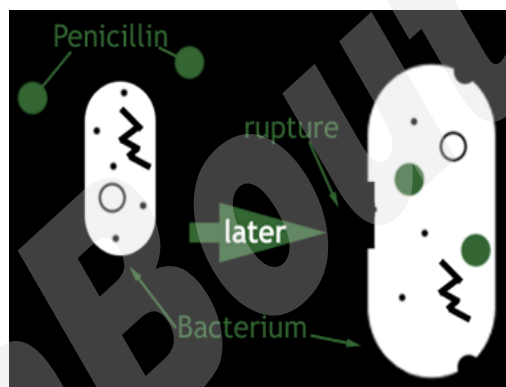
(IGCSE Biology Syllabus 2016-2018)

Drugs

- Any substance taken into the body that modifies or affects chemical reactions in the body

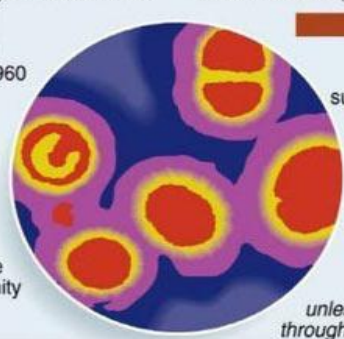
Antibiotics

- Antibiotics work by stopping a metabolic practice performed by the bacteria (attack bacterial cell wall) but not performed by human cells (human cells do not contain cell wall)



- Some bacteria are resistant to antibiotics which reduce the effectiveness of antibiotics
- Development of resistance bacteria such as MRSA can be minimized by limiting use of antibiotics only when essential and ensuring treatment is completed

MRSA		Caused by Staphylococcus aureus bacteria (staph)
Origins	<ul style="list-style-type: none"> ▶ Recognised first in hospitals around 1960 ▶ Entered wider community in 1990s, where it came to be known as community-associated MRSA or CA-MRSA ▶ Dramatic rise of the disease in community reported in recent years 	<p>The problem</p> <p>Bacteria has evolved to survive common antibiotics</p> <p>e.g. penicillin, oxacillin, methicillin, amoxicillin</p> <p>Generally harmless to healthy adults unless enters body through cut or wound</p>

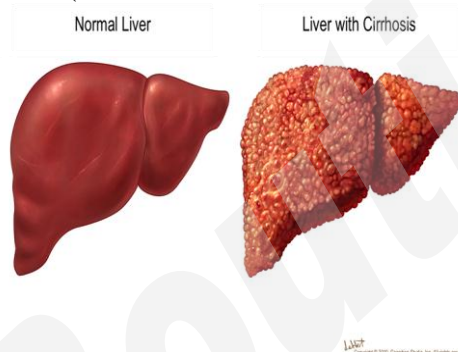


- Antibiotics do not work on viruses because viruses are not really living

Misused Drugs

Alcohol

- Effects of excessive consumption of alcohol
 - Coronary heart disease
 - Reduced self-control
 - Depression
 - Effect on reaction times
 - Damage to liver – cirrhosis (loss of liver cells and irreversible scarring of the liver)

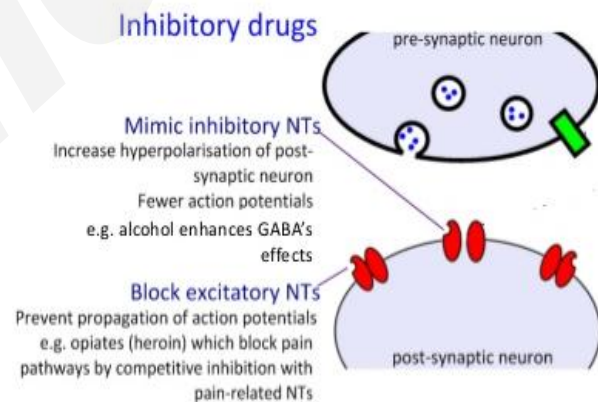


Heroin

- Effect of the abuse of heroin
 - Problems with addiction
 - Severe withdrawal symptoms (vomiting, restlessness)
 - Malnourishment as drug reduces appetite
 - Financial problem – stealing to buy drugs
 - Infection from sharing needles, e.g. HIV/AIDS
 - Affects nervous system by its effect on the synapses

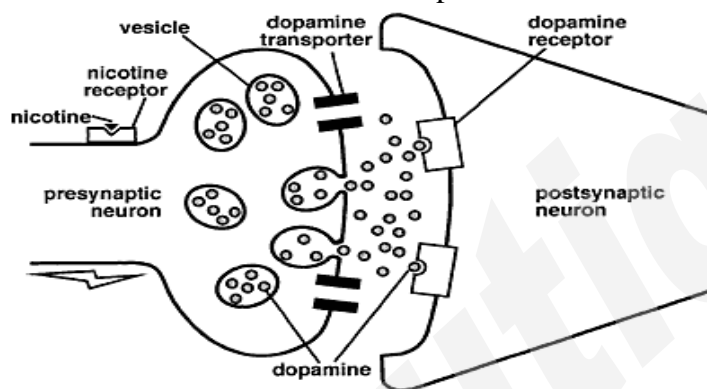
Psychoactive drugs affect the brain and personality by either increasing or decreasing postsynaptic transmission.

They can act on the synapses in many ways:



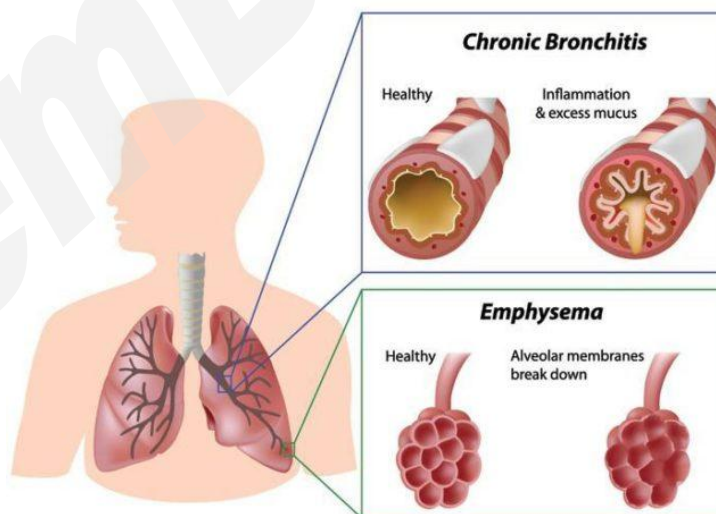
Smoking

- Some effects of tobacco smoke:
 - Drying effect and heat irritate lungs – destroyed cilia
 - Nicotine is addictive: **stimulant** → it increases pulse rate and narrows blood vessels



- Tobacco smoking can cause **chronic obstructive pulmonary heart disease (COPD)**, lung cancer and coronary heart disease
- COPD → **Emphysema**: walls between alveoli break making large sacs, reducing surface area massively and making smokers breathless

Chronic Obstructive Pulmonary Disease (COPD)



- Tar causes cancer, irritant that causes coughing
- Other irritants: smoke particles, ammonia and sulphur dioxide
- Lower sperm count
- Carbon monoxide irreversibly bonds with haemoglobin which can lead to oxygen starvation

Hormones and Sports

- Hormones: can be used to improve sporting performance
- Testosterone:
 - Improved hand-eye coordination
 - Improved body-fat composition
 - Increased muscle mass
- Anabolic androgenic steroids
 - Mood swings
 - Impaired judgment
 - Kidney failure
 - Increased risks of prostate cancer (male)
 - Inconsistencies of menstrual cycle (female)
 - Changes in blood cholesterol