Drugs

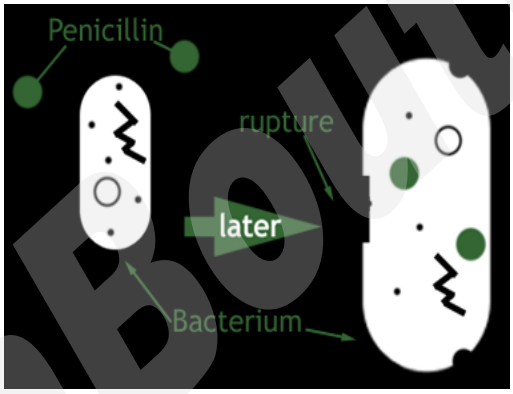
(IGCSE Biology Syllabus 2016-2018)

Drugs

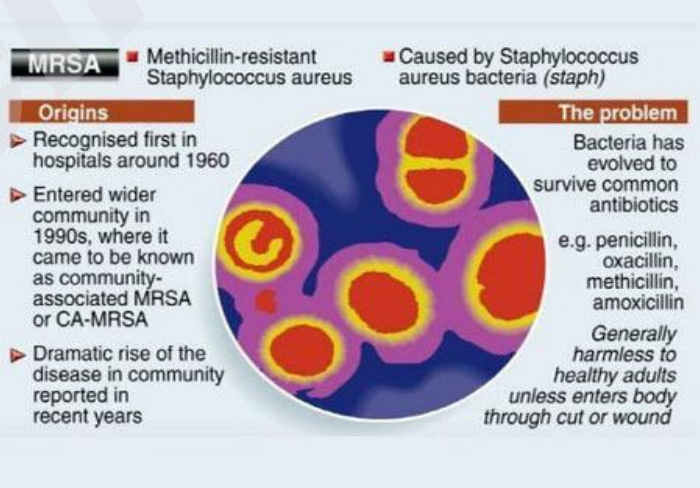
- Any substance taken into the body that modifies or affects chemical reactions in the body

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

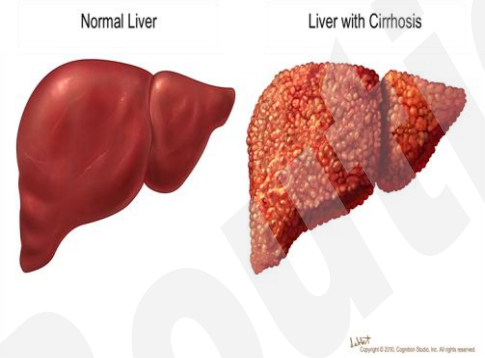


- Antibiotics do not work on viruses because viruses are not really living

Misused Drugs

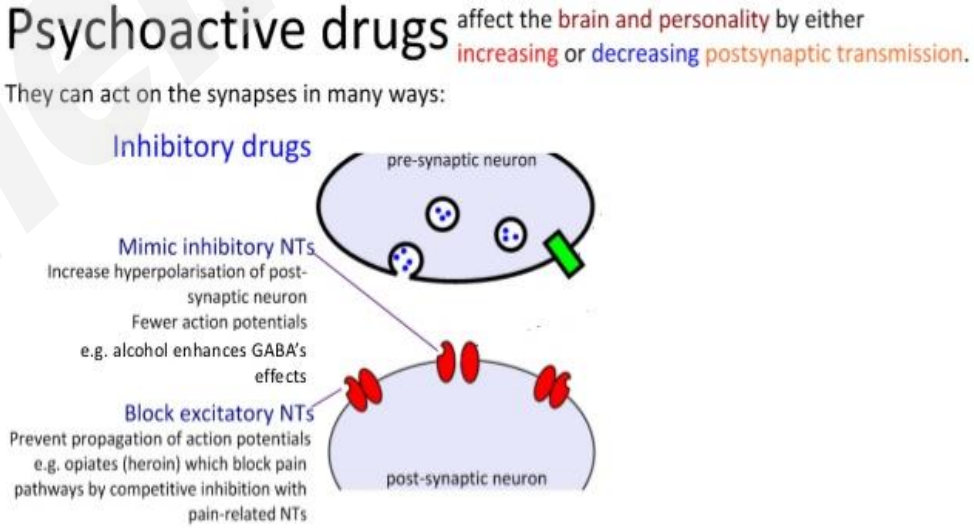
Alcohol

- 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)



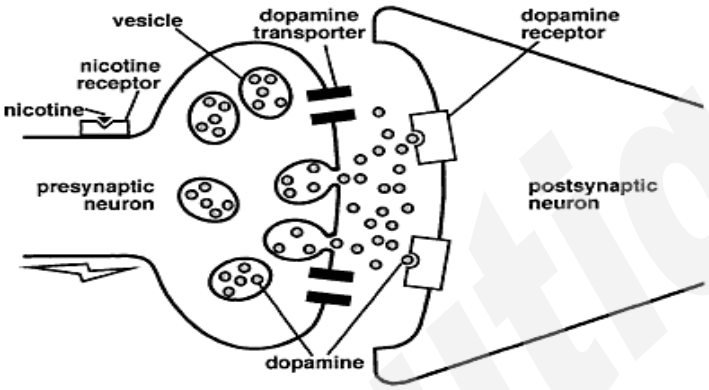
Heroin

- 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

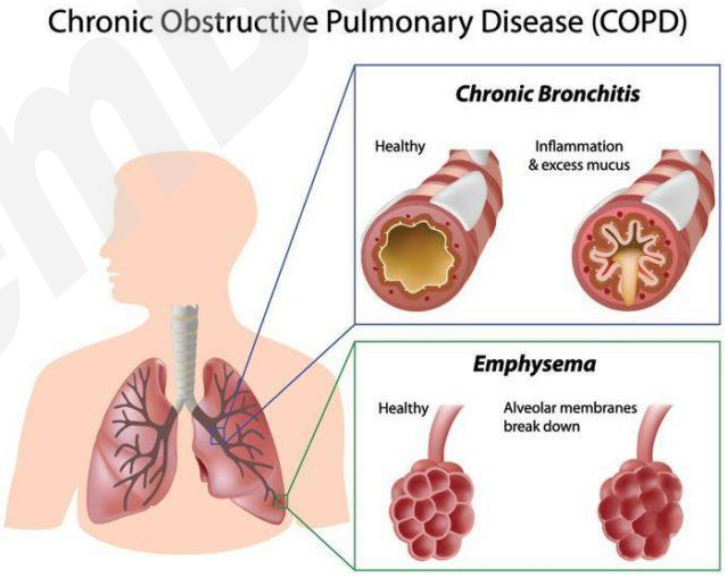


Smoking

- 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



  - 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