

GCSE Knowledge Organiser

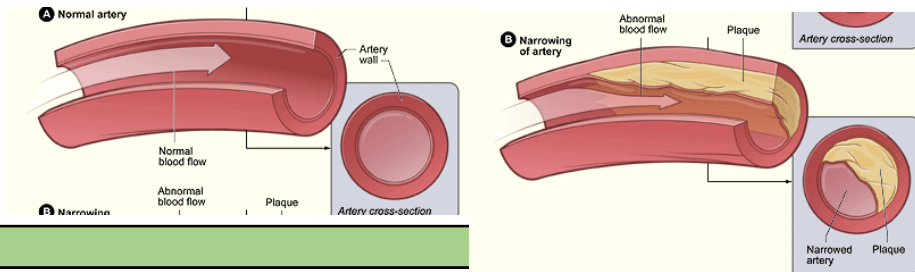
Unit 3 – Lifestyle & Health

SCIENCE

ONE

HEALTH & DISEASE

Key term	Definition
Health	A state of physical, mental and social well-being. Not just being disease-free
Disease	Stops part(s) of the body from working properly, causing symptoms
Communicable disease	Diseases caused by pathogens, which can be spread by direct contact, water or air. Also called infectious diseases
Non-communicable disease	Diseases that cannot be spread, such as cancer or heart disease
Risk Factors	Aspects of a person's lifestyle or environment that have been shown to have a link to increased rate of a disease
Pathogens	Microbes that cause disease, such as bacteria, viruses, fungi or protists
Symptoms	A physical or mental feature associated with particular disease(s)



THREE

TREATING CARDIOVASCULAR DISEASE

In coronary heart disease, layers of fatty material build up inside the coronary arteries. This reduces the flow of blood through the coronary arteries and can deprive the heart of oxygen it needs. This can lead to a heart attack.

Statins	Statins are a medication widely used to reduce blood cholesterol levels, which slows down the rate of fatty material deposit
Stents	Stents are used to keep the coronary arteries open
Biological or mechanical valves	Valves may become faulty (unable to open or leaky), and can be replaced. Replacements may be biological tissue or mechanical valves
Heart transplant	In heart failure, heart (and possibly lung) transplants are used. Artificial hearts can be used temporarily while patients are waiting for a heart donor to become available

TWO

RISK FACTORS FOR NON-COMMUNICABLE DISEASES

Disease	Risk factor(s)
Lung disease & lung cancer	Smoking
Cardiovascular disease	Smoking, diet, exercise
Liver disease	Alcohol and other substances
Type 2 diabetes	Obesity, diet, exercise, alcohol
Cancer	Carcinogens, radiation
Effects on unborn babies	Smoking & alcohol during pregnancy

FOUR

HOMEOSTASIS

Homeostasis is the regulation of the internal conditions of a cell or organism to maintain optimum conditions in response to internal and external changes.

Examples of homeostasis include maintaining a constant body temperature, blood glucose concentrations and water concentration.

To maintain homeostasis an organism must continuously monitor internal conditions and respond when these conditions deviate from their optimum.

These automatic control systems can involve nervous or chemical responses. Most are co-ordinated by hormones.

FIVE: INSULIN & DIABETES

Blood glucose is high...

After eating a meal, blood glucose levels rise

This causes the pancreas to produce and release insulin

Insulin causes cells to take up glucose, reducing the blood glucose levels

Glucose is either used in respiration or converted into glycogen and stored



Type 1 diabetes is a disease where the pancreas does not produce enough insulin. It is usually treated with insulin injections

Type 2 diabetes is a condition where the body's cells no longer respond to the insulin that is produced. This is generally managed through diet and exercise. Obesity is a risk factor.

SEVEN

CONTRACEPTION

Method	Description	Advantages/Disadvantages
Surgical sterilisation	Involves cutting the oviduct (female) or sperm duct (male) to prevent fertilisation	+ virtually 100% reliable - irreversible
Barrier methods (condoms)	A physical barrier that prevents sperm reaching an egg cell	+ easily obtained + protects against STIs - Unreliable if not used correctly
Pill	An oral pill taken regularly to prevent ovulation	+ very reliable - Must be taken daily - No protection against STIs
Spermicide	Chemicals which kill or disable sperm	+ can be added to physical barriers - Some people have allergic reactions
Implant/injection	A small tube placed under the skin of the arm, or an injection which releases hormones slowly, over a long period of time	+ long-lasting + very reliable - No protection against STIs
Intrauterine devices (IUD)	Also known as a coil, placed in the uterus to prevent implantation of an embryo	+ can last up to 10 years - Small risk of ectopic pregnancy - Need to be fitted by a medical professional
Abstinence	Sexual intercourse avoided around time of ovulation	+ a natural method - Can be difficult for women with irregular cycles

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SIX

HUMAN REPRODUCTIVE HORMONES

Testosterone	Produced by the testes	Male reproductive hormone
Follicle-Stimulating Hormone	Produced in the pituitary gland	Stimulates the maturation of an egg in the ovary, also stimulates production of oestrogen
Oestrogen	Produced by the ovaries	Stops FSH being produced (so only 1 egg matures), thickens the uterus lining and stimulates production of LH
Luteinising Hormone	Produced in the pituitary gland	Triggers ovulation (release of a mature egg from the ovaries)
Progesterone	Produced by the ovaries	Maintains a thick uterus lining during the middle of the menstrual cycle and during pregnancy

EIGHT

TREATING INFERTILITY (HT)

Method	Explanation
Fertility Drug	- Woman given high doses of FSH and LH in a fertility drug - Boosts woman's FSH levels to increase likelihood of an egg maturing - Boosts woman's LH levels to increase likelihood of ovulation
In Vitro Fertilisation (IVF)	- Woman treated with high doses of FSH and LH to encourage maturation and ovulation of multiple eggs - Mature eggs removed and fertilised in a petri dish with sperm - Woman treated with oestrogen to prepare uterus lining - Successfully fertilised egg implanted into woman's uterus

EVALUATING INFERTILITY TREATMENT

Advantages	Disadvantages
Opportunity for couples to have children of their own	Emotionally and physically stressful
	Low success rates
	Can lead to multiple births, which can be a risk for both mother and baby