

BIOLOGY – YEAR 10 – HOMEOSTASIS AND RESPONSE (FOUNDATION)

A THE NERVOUS SYSTEM		
1	The Central Nervous System (CNS)	The Brain and the Spinal cord together, Co-ordinates the response of the effectors
2	Stimulus	A change in the environment <i>e.g. a loud noise or change in temperature</i>
3	Receptor	Detects a stimulus - <i>e.g. Specialised cells in eyes and nose</i>
4	Sensory Neuron	Transmits electrical impulse to the CNS
5	Coordination Centre	Receives and processes information from receptors <i>e.g. CNS</i>
6	Motor Neuron	Transmits electrical impulse from the CNS to the effector
7	Effector	Produces a response, is either a muscle or a gland
8	Synapse	The gap between two neurons
9	Reflex action	A fast automatic reaction does not require thinking parts of the brain
10	Relay Neuron	Transmits impulses from sensory neuron directly to <u>motor neuron</u> , as part of the reflex action.

B THE MENSTRUAL CYCLE		
1	Ovulation	The release of an egg cell. Occurs approximately every 28 days.
2	FSH	Produced by the pituitary gland. A hormone that causes an egg to mature in the ovary. Causes oestrogen to be produced.
3	Oestrogen	Produced by the ovaries. Causes blood lining of uterus to develop. Stops FSH being produced. Stimulates release of LH.
4	LH	Produced by the pituitary gland. A hormone that causes ovulation.
5	Progesterone	Produced by the ovary. Maintains blood lining in uterus. Stops production of LH and FSH.

C METHODS OF CONTRACEPTION

1	Oral contraceptives	The contraceptive pill. Contain hormones to inhibit FSH production so eggs do not mature.	+ 99% effective + Reduces risk of some cancers - Can cause side effects <i>e.g. nausea</i>
2	Progesterone	Injection, implant or skin patch of slow-release progesterone to stop eggs maturing and being released.	+ Fewer side effects than pill. + Doesn't need to be taken daily so less likely to be forgotten - Less effective than pill
3	Barrier methods	Condom or diaphragm. Prevents sperm reaching the egg.	+ 98% effective (when used correctly) + Prevent STIs - Can break or be used incorrectly

D HORMONAL CONTROL		
1	Endocrine System	The system of glands that secrete hormones.
2	Hormone	A chemical secreted by a gland that travels in the blood and has an effect on a target organ. The effects are slower and longer-lasting than responses from the nervous system.
3	Pituitary Gland	A gland that secretes several hormones into the blood. These hormones in turn act on other glands to stimulate other hormones to be released to bring about effect.
4	Testosterone	Male hormone produced by testes. Stimulates sperm production.

E BLOOD GLUCOSE CONTROL		
1	Pancreas	The gland that monitors and controls blood glucose concentration.
2	Insulin	A hormone produced when blood glucose concentration is too high. Causes glucose to move from the blood into the cells. In liver and muscle cells excess glucose is converted to glycogen.
4	Glycogen	A storage molecule made from many glucose molecules bonded together. Found in liver and muscle cells.
5	Type I Diabetes	Disorder in which the pancreas fails to produce enough insulin. Causes uncontrolled high blood glucose levels. Treated with insulin injections.
6	Type II Diabetes	Body cells no longer respond to insulin produced by the pancreas. A carbohydrate controlled diet and exercise are common treatments. Obesity is a risk factor.

4	Spermicide	Kills or disables sperm. Used with diaphragms to make them more effective.	+ Increases effectiveness of some barriers - Can't be used on its own
5	Avoiding intercourse	Avoiding intercourse when an egg might be in an oviduct.	- High risk of becoming pregnant
6	Sterilisation	Undergoing surgery to stop sperm or eggs being able to fertilise.	+ Permanently stops pregnancy - Risks from surgery - Expensive to reverse and may not work
7	Intra-uterine device (IUD)	An implant into the uterus that prevent fertilised eggs implanting into the wall of the uterus or release hormones.	+ Long lasting but can be reversed - Small risk of infection or uterus damage when IUD is implanted