Triple Science, Higher Tier

B5 Homeostasis Revision Checklist

Topic	Content	✓
Homeostasis and the Human Nervous System	Homeostasis: Regulation of internal conditions to maintain stability, key controlled factors: body temperature, blood glucose levels, water balance, role of components: receptors, coordination centres, effectors	
	The Human Nervous Systems: Structure and function of CNS (brain & spinal cord), sensory, relay, and motor neurons, describe how information from receptors passes along neurones and synapses to generate a response, importance of reflex action reflex actions: stimulus-response pathways , required practical 7: investigate reaction times using a ruler drop test	
The Brain, The Eye and Control of Body Temperature	The Brain: Label parts of the brain: cerebrum (conscious thought), cerebellum (coordination), medulla (automatic functions), describe the development of methods of studying the brain: MRI, electrical stimulation, brain damage case studies	
	The Eye: structures and how it relates to their functions: cornea, iris, lens, retina, optic nerve. Describe accommodation: lens changing shape for focusing. Describe pupil reflex in adaptation to dim light. Describe eye defects: myopia (short-sighted), hyperopia (long-sighted), corrective treatments (glasses, contact lenses, laser surgery)	
	Controlling Body Temperature: Thermoregulatory centre in brain monitors body temperature, role of vasodilation and sweating to lower temperature in cooling down, vasoconstriction and shivering increase temperature, role of body hair in controlling body temperature	
The Human Endocrine System	Endocrine System: Glands and their hormones: pituitary (controls other glands), thyroid (metabolism), pancreas (insulin/glucagon), adrenal glands (adrenaline), ovaries/testes (reproductive hormones). Compare the endocrine and nervous systems	
	Adrenal and Thyroxine: where adrenaline and thyroxine are secreted from and describe their role in the body.	
Control of Blood Glucose Concentration	Blood Glucose Regulation: Controlling blood glucose, describe the role of insulin (lowers blood glucose) and glucagon (raises blood glucose). Describe how glucagon raises blood glucose.	
	Type 1 and Type 2 Diabetes, type 1 diabetes treatments: insulin injections, pancreas transplants, type 2 diabetes treatment: diet control, exercise, medication.	

Triple Science, Higher Tier

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Topic	Content	✓
Maintaining Water and Nitrogen Balance	Osmotic changes in body fluids, describe the deamination of amino acids, role and function of kidneys for controlling water: filtration of blood, selective reabsorption, excretion of urea. Compare how water, ions and urea are removed from the body	
	ADH: Controls water levels via negative feedback.	
	Kidney Failure: Causes. Treatments: basic principles of kidney dialysis, kidney transplants	
Hormones in Human Reproduction, Contraception and Treatment Infertility	Describe the role of female hormones in human reproduction including the menstrual cycle: FSH (matures egg), LH (triggers ovulation), oestrogen & progesterone (maintain uterus lining)	
	Describe the role of testosterone in males in human reproduction	
	Hormonal contraceptive methods: pill, implant, patch, IUD	
	Non-hormonal contraceptive methods: condoms, diaphragm, surgical sterilisation. Ethical and religious considerations.	
	The fertility drug, In Vitro Fertilisation, understand the development of IVF techniques, evaluating the social and ethical issues associated with IVF treatment, evaluate methods from the perspective of patients and doctors	
Plant Hormones	Phototropism and gravitropism: role of auxin, required practical 8: investigate effect of light/gravity on seedling growth.	
	Commercial use of plant hormones: auxins (growth control, weed killers, rooting powders), gibberellins (seed germination, fruit growth), ethene (fruit ripening).	

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Triple Science, Foundation Tier

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The Brain, The Eye and Control of Body Temperature	The Brain: Label parts of the brain: cerebrum (conscious thought), cerebellum (coordination), medulla (automatic functions), describe the development of methods of studying the brain: MRI, electrical stimulation, brain damage case studies	
	The Eye: structures and how it relates to their functions: cornea, iris, lens, retina, optic nerve. Describe accommodation: lens changing shape for focusing. Describe pupil reflex in adaptation to dim light. Describe eye defects: myopia (short-sighted), hyperopia (long-sighted), corrective treatments (glasses, contact lenses, laser surgery)	
	Controlling Body Temperature: Thermoregulatory centre in brain monitors body temperature, role of vasodilation and sweating to lower temperature in cooling down, vasoconstriction and shivering increase temperature, role of body hair in controlling body temperature	
The Human Endocrine System	Endocrine System: Glands and their hormones: pituitary (controls other glands), thyroid (metabolism), pancreas (insulin/glucagon), adrenal glands (adrenaline), ovaries/testes (reproductive hormones). Compare the endocrine and nervous systems	
Control of Blood Glucose Concentration	Blood Glucose Regulation: Controlling blood glucose, describe the role of insulin (lowers blood glucose) and glucagon (raises blood glucose).	
	Type 1 and Type 2 Diabetes, type 1 diabetes treatments: insulin injections, pancreas transplants, type 2 diabetes treatment: diet control, exercise, medication.	

Triple Science, Foundation Tier

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Hormones in Human Reproduction, Contraception and Treatment Infertility	Describe the role of female hormones in human reproduction including the menstrual cycle: FSH (matures egg), LH (triggers ovulation), oestrogen & progesterone (maintain uterus lining)	
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	Hormonal contraceptive methods: pill, implant, patch, IUD	
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Plant Hormones	Phototropism and gravitropism: role of auxin, required practical 8: investigate effect of light/gravity on seedling growth.	

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Double Science, Higher Tier

B5 Homeostasis Revision Checklist

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	The Human Nervous Systems: Structure and function of CNS (brain & spinal cord), sensory, relay, and motor neurons, describe how information from receptors passes along neurones and synapses to generate a response, importance of reflex action reflex actions: stimulus-response pathways , required practical 6: investigate reaction times using a ruler drop test	
The Human Endocrine System	Endocrine System: Glands and their hormones: pituitary (controls other glands), thyroid (metabolism), pancreas (insulin/glucagon), adrenal glands (adrenaline), ovaries/testes (reproductive hormones). Compare the endocrine and nervous systems	
Control of Blood Glucose Concentration	Blood Glucose Regulation: Controlling blood glucose, describe the role of insulin (lowers blood glucose) and glucagon (raises blood glucose). Describe how glucagon raises blood glucose.	
	Type 1 and Type 2 Diabetes, type 1 diabetes treatments: insulin injections, pancreas transplants, type 2 diabetes treatment: diet control, exercise, medication.	
Hormones in Human Reproduction, Contraception and Treatment Infertility	Describe the role of female hormones in human reproduction including the menstrual cycle: FSH (matures egg), LH (triggers ovulation), oestrogen & progesterone (maintain uterus lining)	
	Describe the role of testosterone in males in human reproduction	
	Hormonal contraceptive methods: pill, implant, patch, IUD	
	Non-hormonal contraceptive methods: condoms, diaphragm, surgical sterilisation. Ethical and religious considerations.	
	The fertility drug, In Vitro Fertilisation, understand the development of IVF techniques, evaluating the social and ethical issues associated with IVF treatment, evaluate methods from the perspective of patients and doctors	

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Double Science, Foundation Tier

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