

Animal coordination, control and homeostasis

Hormones

Endocrine glands

Pituitary Thyroid Pancreas Adrenal glands

Carried in the blood

Target organs

Ovaries and testes

Adrenalin: fight or flight **Higher tier**

Heart rate up Blood pressure up Blood flow to muscles

Glycogen to glucose

Thyroxine: metabolic rate **Higher tier**

TRH TSH Negative feedback

Menstrual cycle

Stages of the cycle

Menstruation Repair Ovulation Maintenance

Oestrogen: repair

Uterus lining

Progesterone: maintain

Uterus lining

FSH, LH interactions **Higher tier**

FSH: egg matures LH: ovulation

Hormonal contraception

No ovulation Thick mucus

Barrier methods

Condoms STI protection

ART **Higher tier**

IVF Clomifene

Homeostasis

Constant internal environment

Thermoregulation: 37°C **Triple only**

Enzyme activity Denaturing

Osmoregulation **Triple only**

Cells swell Cells shrink

Skin and hypothalamus **Triple only**

Epidermis Dermis Hypothalamus

Shivering and sweating **Triple only**

Vasoconstriction and vasodilation

Triple only **Higher tier**

Blood glucose

Insulin

Glucose into cells Glucose to glycogen

Glucagon **Higher tier**

Glycogen to glucose

Type 1 diabetes

Not enough insulin Insulin injections

Type 2 diabetes

Cells do not respond Diet and exercise

BMI and waist:hip ratio

Mass ÷ height² Correlation

Sugar in urine test

Benedict's solution Heat Blue to brick red

Kidneys **Triple only**

Urinary system

Kidney Ureter Bladder Urethra

Urea from liver

Excess amino acids

Nephron

Glomerulus filtration Glucose reabsorbed

Water reabsorbed

ADH **Higher tier**

Collecting duct permeability

Kidney failure

Dialysis Transplant