

Cells and control

Mitosis and cancer

Cell cycle

Interphase Mitosis Cytokinesis

Stages of mitosis

Prophase Metaphase Anaphase Telophase

Two identical daughter cells

Same chromosomes Diploid

Importance

Growth Repair Asexual reproduction

Cancer

Uncontrolled division Tumour

Growth and stem cells

Animal growth

Cell division Differentiation

Plant growth

Cell division Elongation Differentiation

Differentiation

Specialised cells Tissues and organs

Percentile charts

Monitor growth Percentage change

Stem cells

Embryonic Adult Meristems

Stem cells in medicine

Benefits Risks

Neurones and reflexes

Sensory receptor

Detects stimulus Makes impulse

Three neurones

Sensory Relay Motor

Neurone structure

Axon Dendron Myelin sheath

Synapse

Gap Neurotransmitter diffuses New impulse

Reflex arc

Fast Automatic Protective

Reaction time practical

Ruler drop Mean

The brain Triple only

Cerebral hemispheres Triple only

Memory Language Consciousness

Cerebellum Triple only

Coordination Balance

Medulla oblongata Triple only

Heart rate Breathing rate

CT scan Triple only Higher tier

X-rays Structure

PET scan Triple only Higher tier

Radioactive tracer Function

Treatment limitations Triple only Higher tier

Spinal injury Brain tumours

The eye Triple only

Cornea and lens Triple only

Refract light Focus on retina

Iris Triple only

Controls light entering

Rods and cones Triple only

Rods: dim light Cones: colour

Cataracts Triple only

Cloudy lens Artificial lens

Long-sightedness Triple only

Focus behind retina Convex lens

Short-sightedness Triple only

Focus in front of retina Concave lens

Colour blindness Triple only

Faulty cone cells