Homeostasis, Cells, Epithelia

Homeostasis

Anatomy vs Physiology

➔ Anatomy= branch science which studies structures
➔ Physiology= branch science which studies functions of living organism + their structure

Homeostasis definition

➔ Body's ability detect change activating mechanisms to oppose it to maintain a constant internal environment within tolerable limits

Dynamic state equilibrium

➔ Body is forever conducting, regulated by NS (electrical impulses) and endocrine system (chemical reactions)

Components homeostasis

Stimulus	Provokes change i.e. temperature
Receptor	Senses change i.e. skin
Receptors send message to control center	The brain
Control center	Processes sensory info and sends message to effector
Effector	Caries final action restore homeostasis
Response	Response of the effector i.e. shivering

This is known as negative feedback loop (body senses change + activates mechanism to reverse= dynamic equilibrium)

Negative feedback loop

- Body senses change and acts in opposite to reverse change, this is done by negative feedback loop

Example: blood pressure in bed;

➔ Sitting up causes drop in BP (stimulus) -> detected by baroreceptors and sends message to cardiac center in brain (receptor) -> cardiac center sends message to increase HR (control center) -> nerve signal increases heart rate (effector) -> BP returns to normal (response)

Positive feedback loop

- Are self-amplifying cycle that results in rapid change
- Feedback loop starts and is repeated causing an even greater change (cascade effect)

Example: childbirth;