Homeostasis

Nervous System

rapid response to stimuli via electrical signals

Endocrine System

long-term response using chemical signals (hormones)

Homeostatic Mechanisms

Sensor

detects environmental stimulus

Integrator

receives and processes signals

Effector

cells respond to regulatory signals

Feedback Mechanisms

Negative Feedback	primary mechanism of homeostasis. Used to produce opposite effect of the change and bring back to homeostasis.
Positive Feedback	increases the effects of change produced by environmental stimulus. Does not bring back to homeostasis.
Thermo-regulation	Conduction, Convection, Radiation, Evaporation

Thermoregulation

Heat Stress	1) **Monitor**
	thermoreceptors of peripheral nervous system detect increased temp
	2) **Coordinate**
	hypothalamus signals CNS via motor nerves to sweat glands
	3) **Regulate**
	sweat glands initiate sweating, blood vessels dilate
Cold Stress	1) **Monitor**
	thermoreceptors signal hypoth-alamus using sensory neurons
	2) **Coordinate**
	hypothalamus sends message via motor neurons
	3) **Regulate**
	arterioles and smooth muscle of skin contract, captures heat, skeletal muscles contract-shivering

Osmoregulation

Osmosis

water from high conc. to low conc.

Osmoregulation

regulating osmotic pressure of bodily fluids and cells, management of bodies water and solute content

Excretion

composition of bodily fluids. regulation of blood pH, volume, and pressure. Excretion of metabolic waste.

Nitrogenous Waste

Ammonia

released when liver breaks down proteins - by deamination. Very soluble and toxic. Must be diluted w/ H_2O

Urea

product of Ammonia and CO_2. Conversion occurs in liver. Low toxicity.

Uric Acid

product of nucleic acid breakdown. Released through liver metabolism. Non toxic and insoluble in H_2O

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