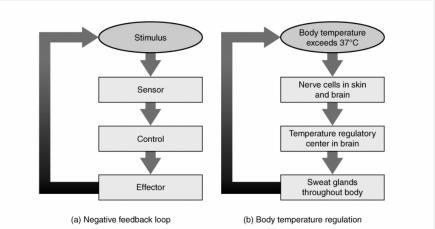
Key Concepts

Homeostasis	- the maintenance of a stable internal environment despite external changes
Components of a homeostatic system	- Sensor (Receptor): Detects changes in the environment (e.g., thermoreceptors).
	-Integrator (Control Center): Compares the detected change to a set point (e.g., hypothalamus).
	-Effector: Produces a response to correct deviations (e.g., sweat glands, muscles).
Negative Feedback loops	- Counteracts changes from the set point.
	- Example: Thermoregulation – if body temp rises, mechanisms lower it.
Positive Feedback Loops	- Amplify changes rather than reverse them.
	- Example: Childbirth, oxytocin increases contractions.
Set Points	- Optimal values for physiological parameters (e.g., 98.6°F for body temperature).
	- Can be influenced by circadian rhythms, age, or disease.

Physiological Parameters

Parameter	Normal Range	Homeostatic Effectors
Body Temperature	~37°C (98.6°F)	Sweat glands, muscles
Blood pH	7.35–7.45	Respiratory & renal
Blood glucose	70–110 mg/dL	Insulin, glucagon
Blood Pressure	~120/80 mmHg	Heart rate, vessel diameter

Negative Feedback Loop



Positive feedback Loop