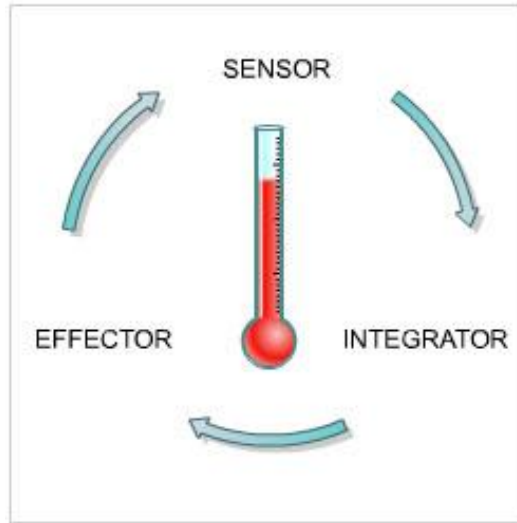


Homeostasis



What is homeostasis?

- Maintenance of a stable internal environment = a dynamic state of equilibrium
- Homeostasis must be maintained for normal body functioning and to sustain life

What is homeostasis?

- The body communicates through neural and hormonal control systems
- Homeostatic imbalance – a disturbance in homeostasis resulting in disease

Maintaining Homeostasis

****Note**** The receptor, control center, and effector are structures/organs of the body - not processes.

- **Receptor**

- Responds to changes in the environment (stimuli)
- Sends information to control center

Maintaining Homeostasis

- **Control center**

- Determines set point
- Analyzes information
- Determines appropriate response

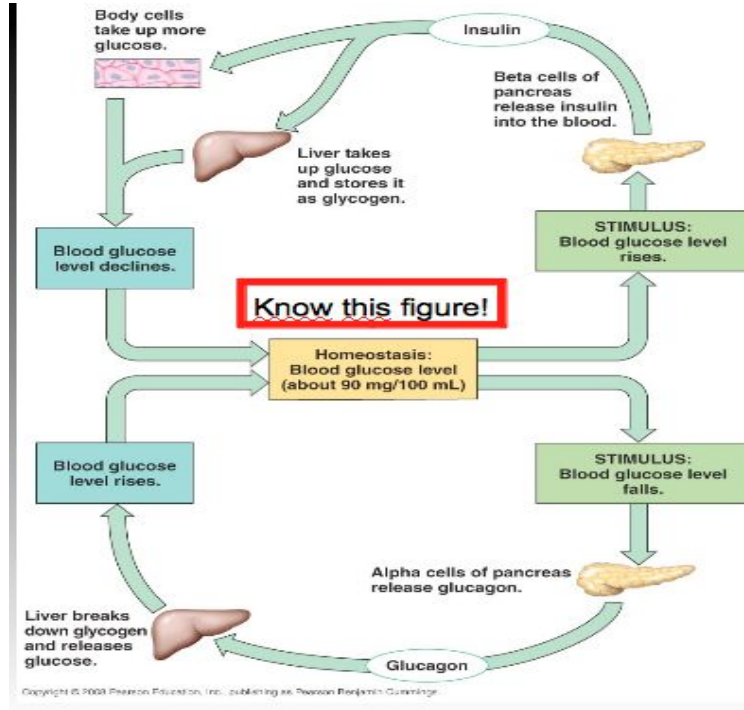
- **Effector**

- Provides a means for response to the stimulus

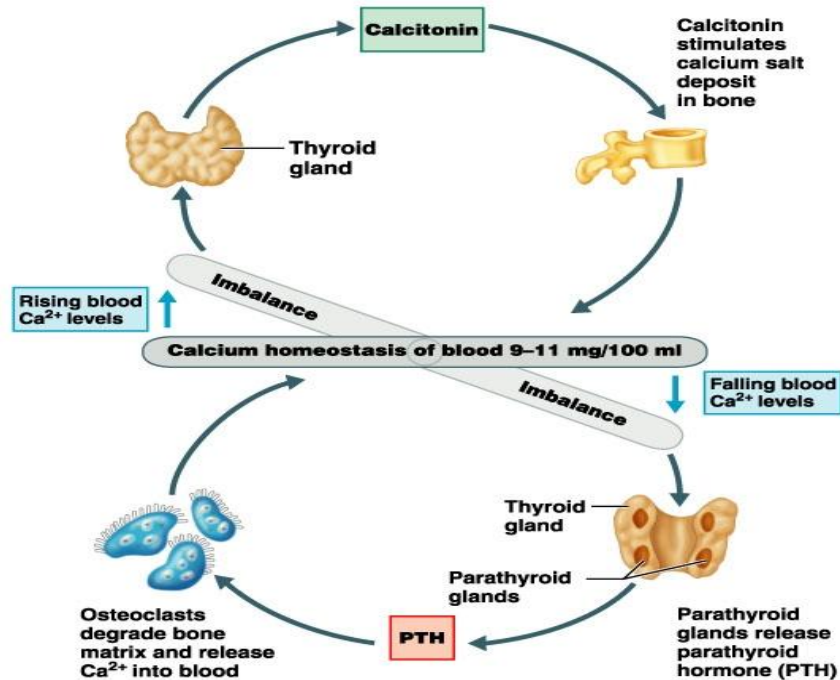
Feedback Mechanisms

- Negative feedback
 - Includes most homeostatic control mechanisms
 - Shuts off the original stimulus, or reduces its intensity
 - Works like a household thermostat

Regulating Blood Glucose Levels



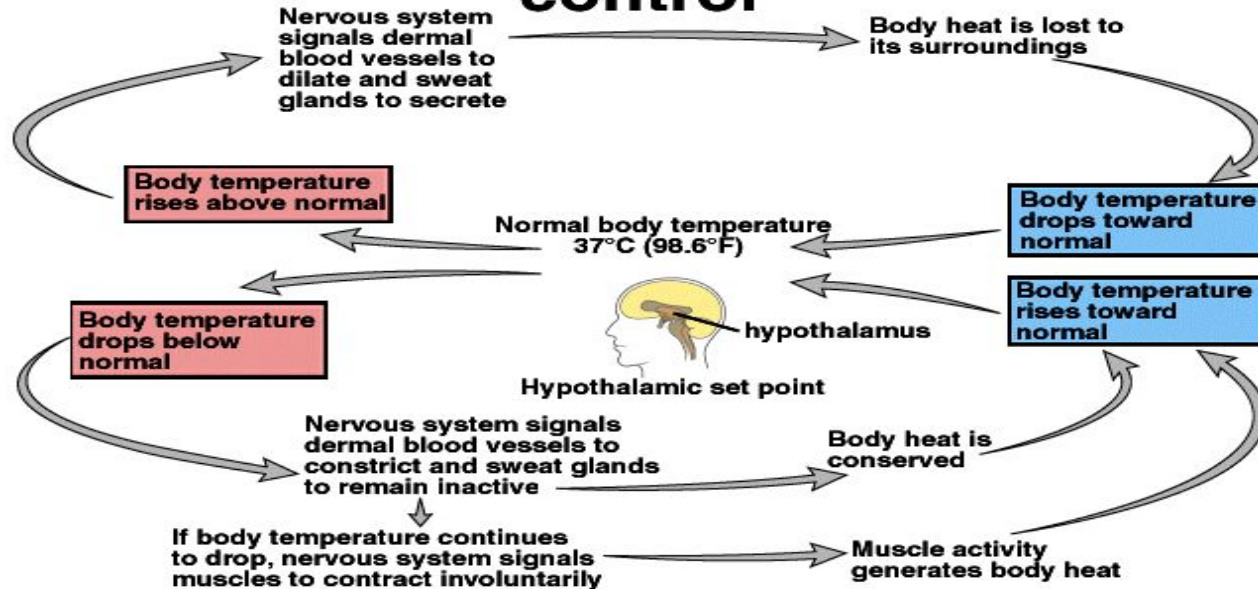
Regulating Blood Calcium Levels



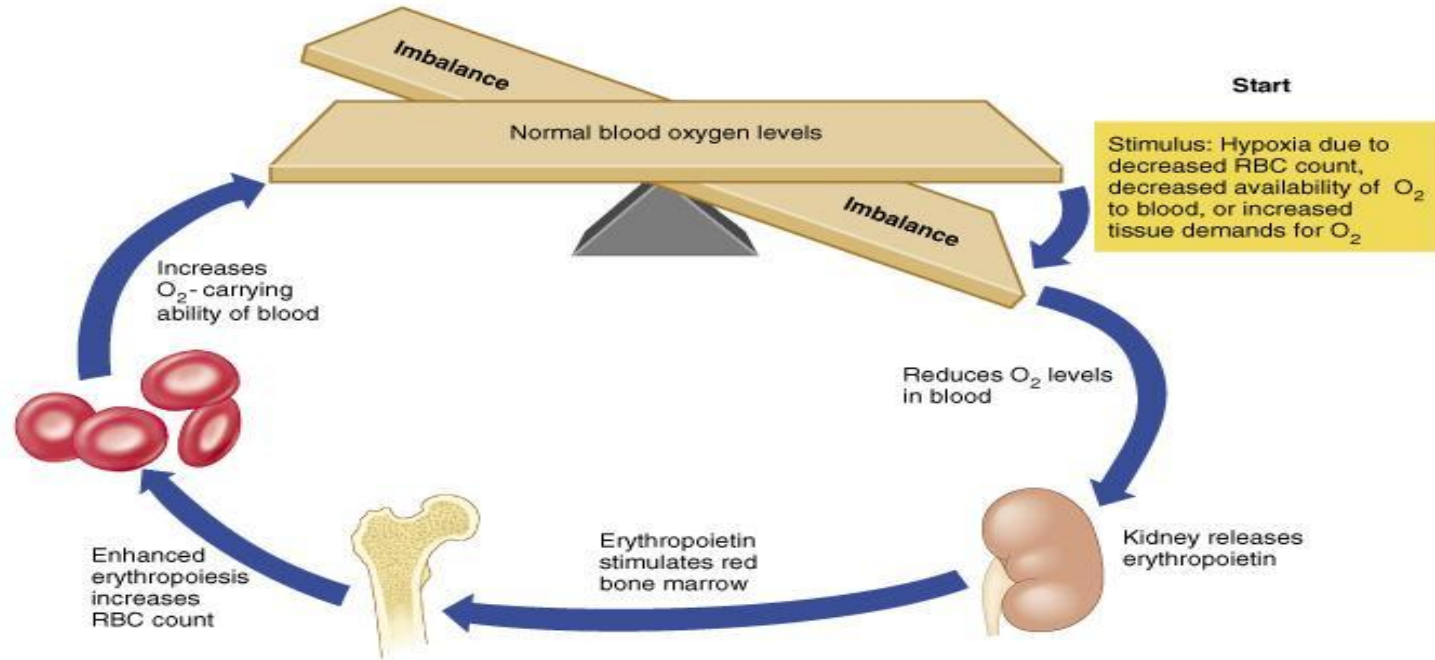
Regulating Body Temperature

Copyright © The McGraw-Hill Companies, Inc. Permission required for reproduction or display.

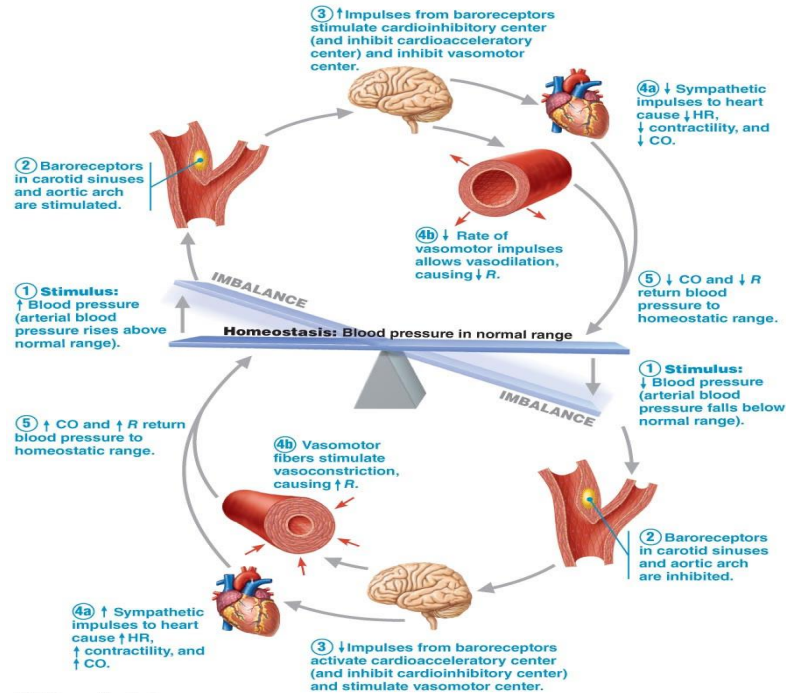
Homeostasis and temperature control



Regulating Blood Oxygen Levels



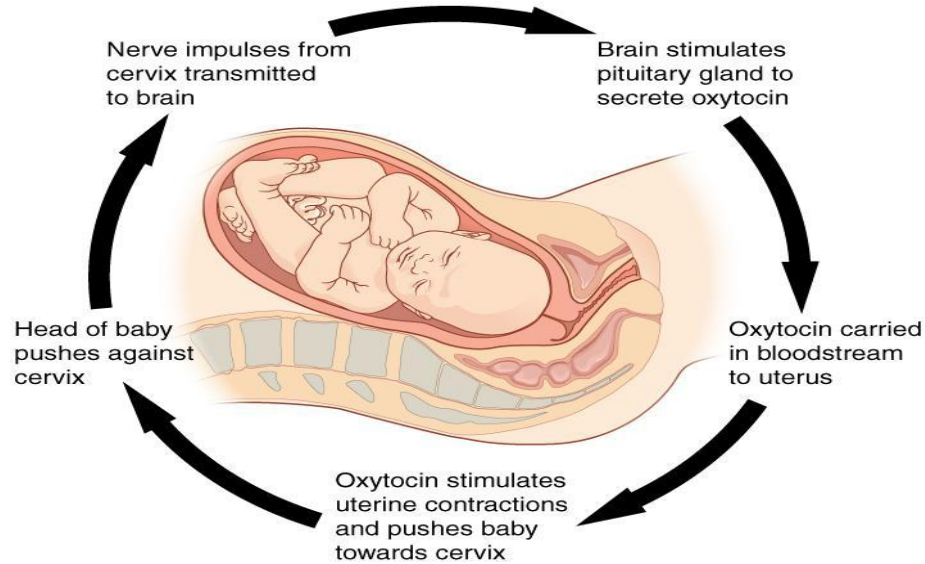
Regulation of Blood Pressure



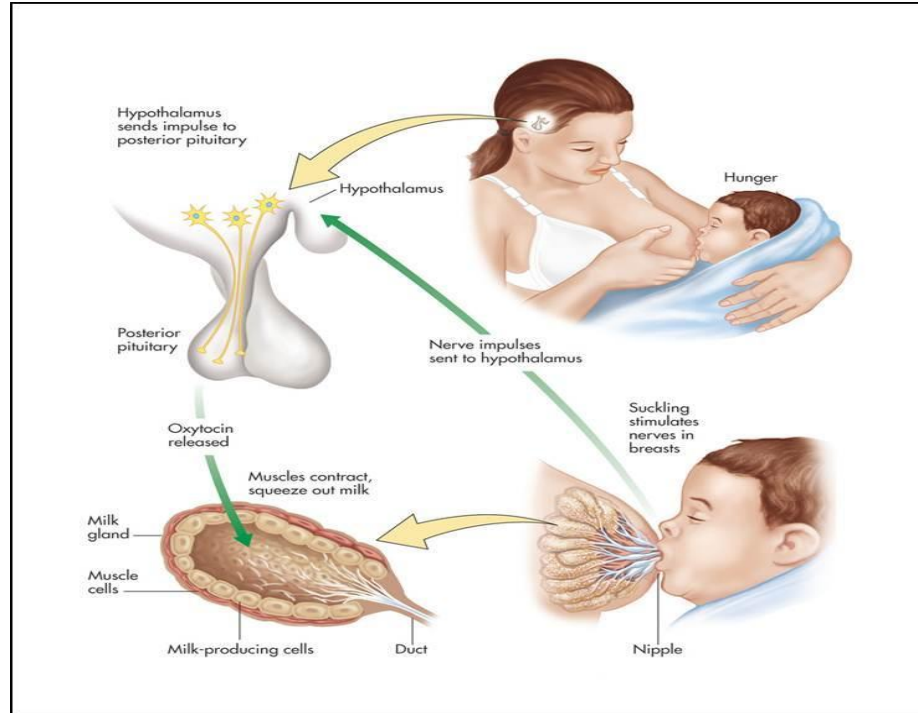
Feedback Mechanisms

- Positive feedback
 - Increases the original stimulus to push the variable farther
 - In the body this only occurs in blood clotting, lactation, and birth of a baby

Childbirth



Producing Milk



Blood Clotting a Wound

1 Endothelium of vessel is damaged, exposing connective tissue; platelets adhere

2 Platelets form a plug

3 Seal is reinforced by a clot of fibrin

