



## Today's Study Tip

- Meet your neighbors. Exchange contact information. Make a study date.



1

---

---

---

---

---

---

---

---



## Chapter 1

### Introduction

2

---

---

---

---

---

---

---

---



## Homeostasis



- "keeping the body in balance"
- 1. Intrinsic control
  - "local"
  - Ex: overworked muscle needs O<sub>2</sub> and waste removal
    - Signals nearby blood vessels
    - Vasodilation of vessels
    - Blood flow increases
    - Homeostasis is achieved

3

---

---

---

---

---

---

---

---

## Cont...



### 2. Extrinsic control

- "outside"
- Ex: overworked muscle needs  $O_2$  and waste removal
  - Chemoreceptors in carotid arteries are signaled
  - Signal to brain and nervous system
  - Commands to vasodilate to entire muscle
  - Homeostasis is achieved

4

---

---

---

---

---

---

---

---

## Four components of homeostasis

1. Stimulus – causes a change in balance
2. Sensor
  - Notices the stimulus
  - Sends information out afferent pathway
3. Integrating Center
  - Receives information from sensor
  - Establishes the "setpoint"
  - Analyzes and then sends information out efferent pathway

5

---

---

---

---

---

---

---

---

## Cont...

### 4. Effector

- The organ that carries out the directions given by the integrating center



6

---

---

---

---

---

---

---

---

## Group Question



List the Stimulus, Sensor, Integrating Center and Effector for this scenario of "homeostasis".

Last summer, 8 year old Charlene was walking barefoot on the sidewalk. She stepped on a sharp piece of glass and her immediate reaction was to lift up her foot.

7

---

---

---

---

---

---

---

---

## Negative Feedback



- The major physiological response to stimuli
- Always opposes the stimulus
- Examples
  - Body temp at 37 °C
  - Blood sugar at 100 mg/dL
  - Heart rate at 70 BPM

8

---

---

---

---

---

---

---

---

## Positive Feedback



- Less common method
- Set point is ignored
- Response intensifies the stimulus
  - Does not encourage homeostasis!
- Examples
  - Blood clotting
  - Parturition or birth

9

---

---

---

---

---

---

---

---



## Remaining topics of chapter 1

- Tissues, organs, systems
- I expect you to already know the rest of the chapter which is anatomy review

10

---

---

---

---

---

---

---

---