



Science Virtual Learning

LEP Science - Homeostasis

April 9, 2020



LEP Science
Lesson: April 9, 2020

Objective/Learning Target: I can explain what Homeostasis is and give examples of how it works in the body.

Let's get started.

Answer the following questions in your notebook or on a sheet of paper.

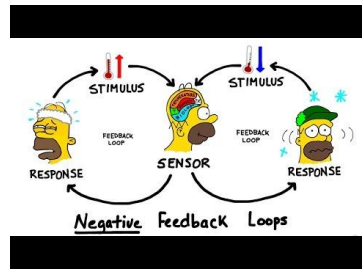
1. What happens when you get too hot? This is usually a response to exercise or a lot of movement.
2. What happens when you get too cold? What does your body do?

Let's get started.

Answer the following questions in your notebook or on a sheet of paper.

1. What happens when you get too hot? This is usually a response to exercise or a lot of movement. **You sweat**
2. What happens when you get too cold? What does your body do? **You shiver**

Engagement Activity



As you watch the video, answer these questions in your notebook or on your paper.

(You may have to pause the video as you write your answers)

1. What is the definition of Homeostasis?
2. What are 2 examples given in the video?
3. What can potentially happen if homeostasis is not maintained?
4. A barrier between internal and external environments needs to be maintained, what is the barrier for cells called?
5. What are the 3 parts of a feedback loop?
6. What are the 2 types of feedback loops?
7. How does a cell maintain homeostasis--what types of energy are used?

How did you do with the video?

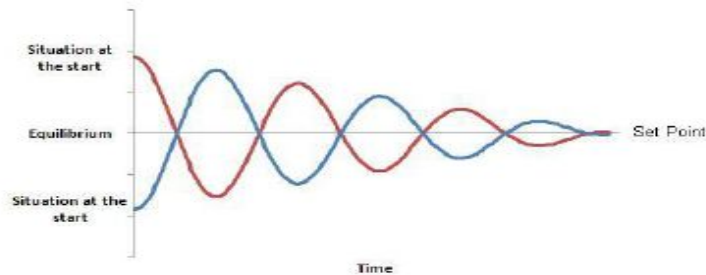
1. What is the definition of Homeostasis? **A dynamic equilibrium which is actively regulated to maintain a variable at a constant level**
2. What are 2 examples given in the video? **Body temperature and Blood glucose levels**
3. What can potentially happen if homeostasis is not maintained? **Tissue death**
4. A barrier between internal and external environments needs to be maintained, what is the barrier for cells called? **Cell membrane**
5. What are the 3 parts of a feedback loop? **Stimulus, Sensor, Response**
6. What are the 2 types of feedback loops? **Positive and Negative**
7. How does a cell maintain homeostasis--what types of energy are used? **Cell use both passive and active transport.**

Practice: Copy the information below in your notebook or on your paper.

Positive Vs. Negative Feedback

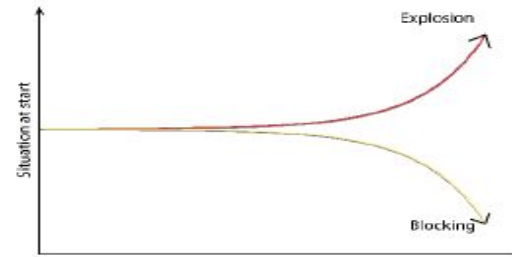
Negative Feedback 😊:

- Maintains conditions within certain limits
- Self-limiting
- Most common mechanism for maintaining homeostasis



Positive Feedback:

- Intensifies conditions
- Self-perpetuating
- Less common process in organisms



Follow the link below to practice with the vocabulary

If you need to write the terms and definitions down, do so in your notebook or on your paper.

[Quizlet practice with vocabulary](#)

Using the information you just copied, answer the questions to the right. Write your answers in your notebook or on your paper.

Homeostasis Worksheet

In **negative feedback systems**, the response reverses a change in a controlled condition

In **positive feedback systems**, the response strengthens the change in a controlled condition.

State whether each of the following indicates negative or positive feedback:

1. _____ If blood temperature rises too high, specialized neurons in the hypothalamus of the brain sense the change. These neurons signal other nerve centers, which in turn send signals to the blood vessels of the skin. As these blood vessels dilate, more blood flows close to the body surface and excess heat radiates from the body.
2. _____ If the blood temperature falls too low, specialized neurons in the hypothalamus of the brain sense the change and signals are sent to the cutaneous arteries (those supplying the skin) to constrict them. Warm blood is then retained deeper in the body and less heat is lost from the surface.
3. _____ Part of the complex biochemical pathway of blood clotting is the production of an enzyme that forms the matrix of the blood clot. This has a self-catalytic, or self-accelerating effect, so that once the clotting process begins, it runs faster and faster until, ideally, bleeding stops.
4. _____ During childbirth stretching of the uterus triggers the secretion of the hormone oxytocin, which stimulates uterine contractions and speeds up labor.
5. _____ The walls of arteries stretch in the presence of high blood pressure. Baroreceptors located in these walls also stretch and as a result, a signal is sent to the brain which in turn slows down the body's heart rate. This slows the flow of blood through the arteries causing less pressure. As BP drops the baroreceptors become flaccid and a signal is sent to speed up the heart rate.

Check your work

1. Negative
2. Negative
3. Positive
4. Positive
5. Negative

More places to practice

[Try your luck with these questions.](#)

More resources for information

