



# **HOMEOSTASIS: POSITIVE AND NEGATIVE FEEDBACK MECHANISM**

**Homeostasis** refers to the maintenance of relatively constant internal conditions. For example, your body shivers to maintain a relatively constant body temperature when the external environment gets colder.

To maintain homeostasis, your body adapts two types of feedback mechanisms:

- Negative feedback occurs when a change in a variable triggers a response which reverses the initial change.
- Positive feedback occurs when a change in a variable triggers a response which causes more change in the same direction.

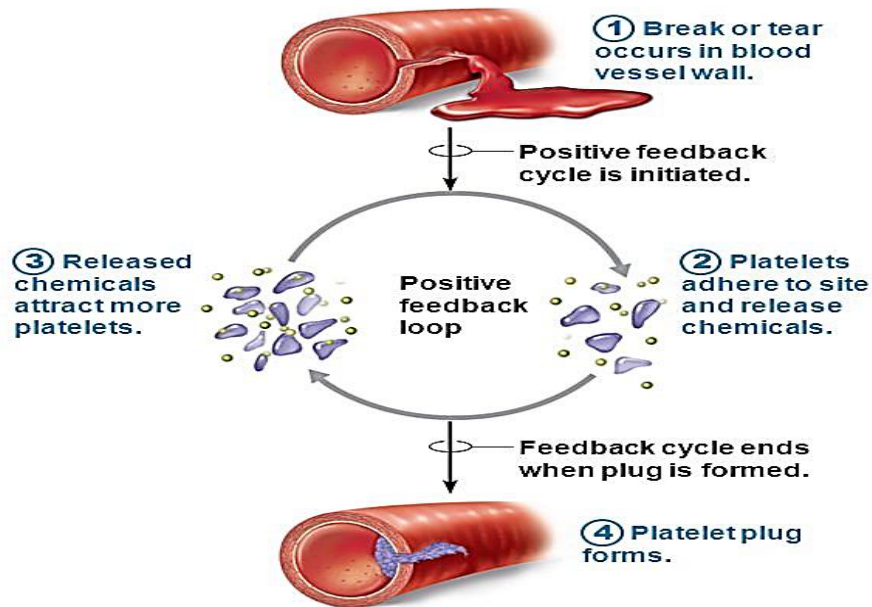


# POSITIVE FEEDBACK MECHANISM

- Positive Feedback can be explained by an example. When you have a cut on your finger, positive feedback contributes to the rapid formation of a platelet plug in an injured blood vessel.
- The injured area attracts platelets, and each of these platelets secretes chemicals that attract more platelets.



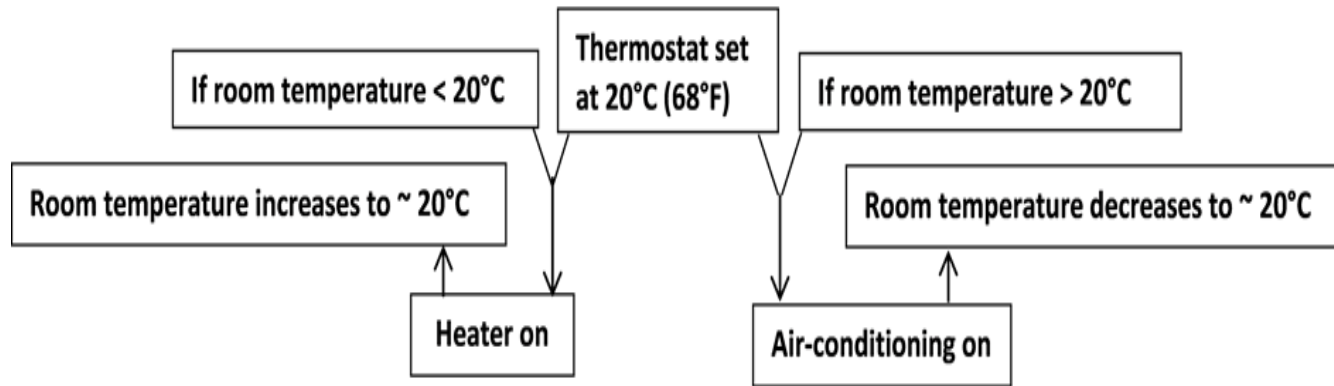
- Thus, many platelets accumulate quickly and together these platelets plug the hole in the injured blood vessel and prevent excessive blood loss.
- The process **is** shown in the picture **below**.



# NEGATIVE FEEDBACK MECHANISM

- Your body responds to hot and cold environments, and these responses help you to keep your body temperature from rising too high, and falling too low respectively.
- These body responses are an example of negative feedback. **Negative feedback** occurs when a change in a **regulated variable** triggers a response which reverses the initial change and brings the regulated variable back to the **set point**.





- This flowchart shows negative feedback regulation of temperature in a home with central heating and air-conditioning. Negative feedback maintains the regulated variable (room temperature) relatively constant at approximately the set point (20°C).
- The experiment provided will help you better understand about the negative feedback mechanism.



# REFERENCE

Drs. Ingrid Waldron, Lori Spindler and Jennifer Doherty (2016). Homeostasis and Negative feedback- Concepts and Breathing Experiments, Dept of Biology, University of Pennsylvania. Retrieved from [http://serendip.brynmawr.edu/sci\\_edu/waldron/pdf/BreathingLabProtocol.pdf](http://serendip.brynmawr.edu/sci_edu/waldron/pdf/BreathingLabProtocol.pdf)

