Homeostasis and feedback mechanism

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Definition of Homeostasis

- **Homeostasis: The tendency of an organism or cell to regulate its internal environment and maintain equilibrium, usually by a system of feedback controls, so as to stabilize health and functioning.**
- **Every organ in the body contributes to homeostasis. A complex set of chemical, thermal, and neural factors interact in complex ways, both helping and hindering the body while it works to maintain homeostasis.**
- **Homeostasis can be considered in regards to a cell, tissue, organ, biological system, or environmental system.**
- **Actively maintained by organs and tissues**

Definition of Homeostasis

- **Lungs provide oxygen consumed by cells, and remove carbon dioxide produced by cells**
- **Kidneys regulate ion concentrations by disposal of waste product.**
- **Arrest of bleeding.**
- **Prevent excessive blood loss.**

1- Vasoconstriction of damaged blood vessels.

2- Platelet plug forming.

3- Coagulation or blood clotting.

TYPES OF FEEDBACK MECHANISM

There are two types of feedback mechanism:-

1-Negative feedback mechanism.

2- Positive feedback mechanism.

Negative feedback mechanism

Negative feedback : Is the primary mechanism through which your endocrine system maintains " homeostasis ".

*Example :-

The control of blood sugar (glucose) by insulin is another good example of a negative feedback mechanism. When blood sugar rises, receptors in the body sense a change . In turn, the control center (pancreas) secretes insulin into the blood effectively lowering blood sugar levels. Once blood sugar levels reach homeostasis, the pancreas stops releasing insulin.

POSITIVE FEEDBACK MECHANISM

Positive feedback mechanism: Increase in function in response to a stimulus

***Example :-**

A- A good example of a positive feedback system is child birth. During labor, a hormone called **oxytocin** is released that intensifies and speeds up contractions. The increase in contractions causes more **oxytocin** to be released and the cycle goes on until the baby is born. positive feedback mechanism.

B- Another good example of a positive feedback mechanism is blood clotting. Once a vessel is damaged, platelets start to cling to the injured site and release chemicals that attract more platelets. The platelets continue to pile up and release chemicals until a clot is formed.

POSITIVE & NEGATIVE FEEDBACK MECHANISM

*Note :-

Just remember that positive feedback mechanisms enhance the original stimulus and negative feedback mechanisms inhibit it.

FEEDBACK MECHANISM

A feedback mechanism is a process that uses the conditions of one component to regulate the function of the other. It is done to either increase or dampen the change in the system. When the process tends to increase the change in the system, the mechanism is known as positive feedback. Negative feedback is when the process seeks to counter the change and maintain equilibrium.

**Homeostasis is the tendency to resist change in order to maintain a stable, relatively constant internal environment.*

THE END