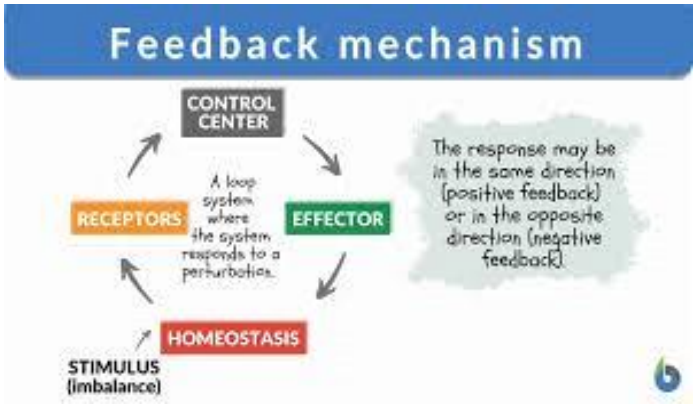
Most control mechanisms in living organisms use a negative feedback control loop to maintain homeostatic balance. This involves a receptor (or sensor) and an effector.



The receptor detects stimuli that are involved with the condition (or physiological factor) being regulated.
The body has receptors which detect external stimuli and other receptors that detect internal stimuli.
These receptors send information about the changes they detect through the nervous system to a central control in the brain or spinal cord. This sensory information is known as the input.
The central control instructs an effector to carry out an action, which is called the output.
These actions are sometimes called corrective actions as their effect is to correct (or reverse) the changes that are detected.

The homeostatic mechanisms in mammals require information to be transferred between different parts of the body.
There are two coordination systems in mammals that do this: the nervous system and the endocrine system.
Sometimes control mechanisms **do not respond via negative feedback.**
If a person breathes air that has very high carbon dioxide content, a high concentration of carbon dioxide in the blood results.
This is sensed by carbon dioxide receptors, which cause the breathing rate to increase.
So the person breathes faster, taking in even more carbon dioxide, which stimulates the receptors even more, so the person breathes faster and faster.
This is an example of a positive feedback. You can see that positive feedback **cannot** play any role in keeping conditions in the body constant.

Excretion

Many of the metabolic reactions occurring within the body produce unwanted substances.
Some of these are toxic (poisonous). The **removal** of these unwanted products of metabolism is known as excretion.
Many excretory products are formed in humans, but **two** are made in much greater quantities than others. These are carbon dioxide and urea.