

# 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.