

Negative Feedback Loops: In this exercise you will be tracing a hormone's negative feedback loop from the initial homeostatic disturbance, through the hormone's effects on its target cells to restore homeostasis, and finally the decline of the concentration of the hormone in the blood.

Following is an example:

Start: the concentration of glucose in the blood falls → the pancreas releases glucagon → the level of the hormone glucagon in the blood rises → the hormone glucagon causes glycogenolysis by the liver → the concentration of glucose in the blood rises → the level of the hormone glucagon in the blood decreases → **End**

- 1. Start:** the concentration of the blood increases (i.e., there is inadequate water in the blood) → the hypothalamus releases the hormone _____ and stores it in the _____ → the stored hormone _____ is released and so its level in the blood rises → the hormone _____ causes _____ → the concentration of the blood _____ → the level of the hormone _____ in the blood _____ → **End**
- 2. Start:** the concentration of glucose in the blood increases → the pancreas releases the hormone _____ → the level of the hormone _____ in the blood rises → the hormone _____ causes _____ → blood glucose levels _____ → the level of the hormone _____ in the blood _____ → **End**
- 3. Start:** the concentration of calcium ions in the blood decreases → the parathyroid glands release the hormone _____ → the level of the hormone _____ in the blood rises → the hormone _____ causes _____ → the concentration of calcium ions in the blood _____ → the level of the hormone _____ in the blood _____ → **End**
- 4. Start:** the concentration of potassium and hydrogen ions in the blood increases → the adrenal cortex releases the hormone _____ → the level of the hormone _____ in the blood rises → the hormone _____ causes _____ → the concentration of potassium and hydrogen ions in the blood _____ → the level of the hormone _____ in the blood _____ → **End**
- 5. Start:** the body is exposed to a stressor → the hypothalamus releases corticotropin-releasing hormone → CRH stimulates the release of the hormone _____ from the anterior pituitary gland → the hormone _____ stimulates the release of the hormone _____ from the adrenal cortex → the level of the hormone _____ in the blood rises → the hormone _____ causes _____ → the body adapts to the stressor → the level of the hormones _____ in the blood _____ → **End**