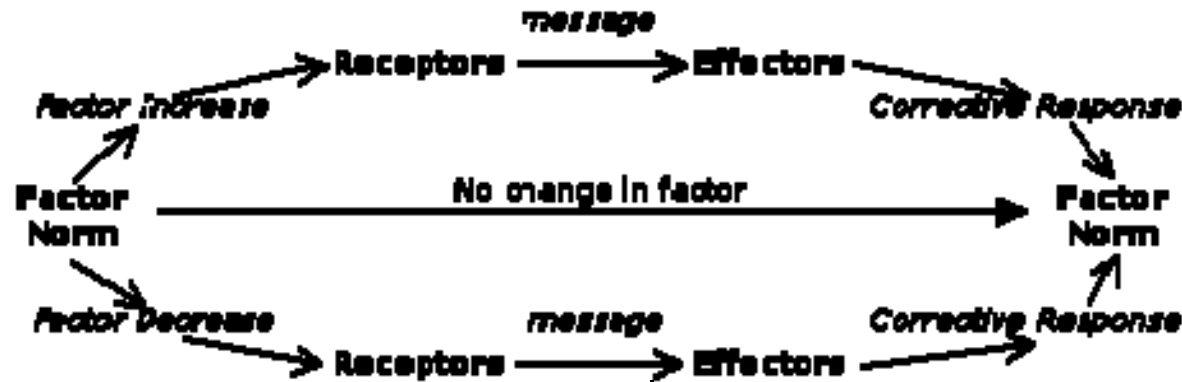


# Negative feedback

Below is a flow chart of a generalized negative feedback loop. What is the goal of any feedback mechanism? (Write the answer here)



## Blood Sugar Maintenance

The normal blood glucose level is generally accepted as being between 70 to 110 mg/dl (milligrams per deciliter). Glucose is constantly being used in the manufacture of ATP, especially by the brain, which uses more glucose than any of the body's other organs. It would make sense then, that we would need a mechanism to increase the amount of glucose when it gets too low. Conversely, when we eat, all of the carbohydrates that we consume are converted to glucose in the intestines before we absorb it into the bloodstream, so we need a mechanism to lower the glucose in the bloodstream after we eat.

There is a part of the pancreas called the islets of Langerhans that has special glucose receptors. When the **glucose** level increases too **high**, the beta cells in these islets secrete insulin. Insulin then travels to the liver and sends the message to convert **glucose** to **glycogen**. When the glucose level gets too low, the alpha cells in the islets secrete a hormone called glucagon. Glucagon sends the message to the liver to start converting its store of glycogen back to glucose.

Use the diagram above, the information in the reading and your enormous cerebral cortex to answer the questions on the back.

1. What is the fuel for cellular respiration?
2. After eating a Pop-tart, what happens to blood sugar levels?
3. Which organ is responsible for detecting and responding to blood sugar levels?
4. Which hormone is produced in response to high glucose in the blood?
5. What does that hormone allow body cells to do?
6. What happens to blood sugar levels?
7. As we go through cellular respiration but skip breakfast, what happens to blood glucose levels?
8. Which organ responds to the lower glucose levels?
9. What does that organ produce now?
10. What does that hormone cause to happen?
11. As this conversion takes place, what happens to blood sugar levels?
12. What do we call the state of balance of anything in your body?

