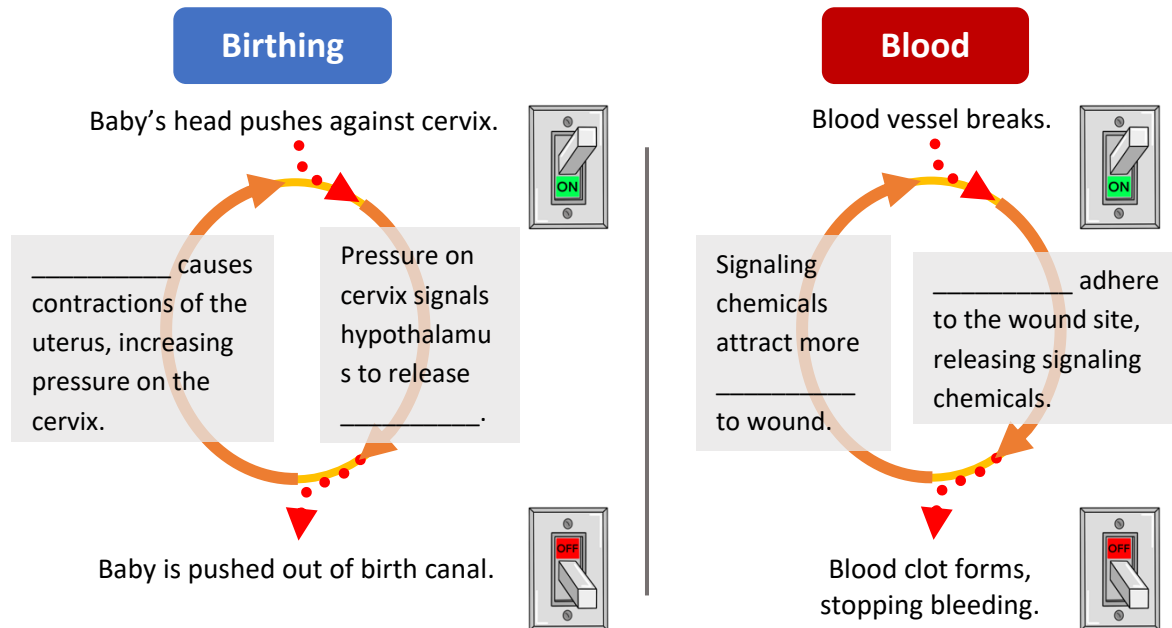


TOPIC: FEEDBACK LOOPS: POSITIVE FEEDBACK

- Recall: Positive feedback loops move the body in the same direction of the stimulus.
- Positive feedback loops are less common: _____ main examples.



EXAMPLE: Hemophilias and thrombophilias are both classes of dangerous blood clotting disorders. If blood does not clot properly, it is referred to as hemophilia. If blood clots too easily, it is referred to as thrombophilia. We previously compared positive feedback mechanisms to a fire. Explain how thrombophilia and hemophilia relate to the analogy of positive feedback as a fire.



TOPIC: FEEDBACK LOOPS: POSITIVE FEEDBACK

PRACTICE: Which of the following is an example of a positive feedback loop?

- a) The body increasing heart rate after a drop in blood pressure.
- b) The body shivering to increase temperature on a cold day.
- c) The action of platelets to form a blood clot when you get a paper cut.
- d) Parathyroid hormone signaling bone to release calcium when calcium levels are low.

PRACTICE: Ori overhears his study partners discussing a feedback loop where Substance M is released, and the more Substance M is released the more is generated. They note that humans don't release Substance M all the time, only when the pathway is activated. What type of feedback loop is this and why?

- a) Negative feedback because it's the most common.
- b) Negative feedback because the process is returning the body to the set point.
- c) Positive feedback because the amount of the substance is increasing.
- d) Positive feedback because the process increasingly moves away from the starting condition.

PRACTICE: Labor and delivery is one of the more dangerous normal physiological functions that humans perform. How does this danger relate to the concept of feedback loops?

- a) The negative feedback loop of oxytocin release may have the effect of stalling labor.
- b) Reducing pressure on the cervix when the baby is born breaks the positive feedback cycle. If the pressure on the cervix cannot be decreased, the positive feedback loop will continue indefinitely.
- c) Labor and delivery is an example of a negative feedback loop. Negative feedback loops are inherently more dangerous, because lowering any physiological parameter too far may be irreversible.
- d) Labor and delivery can be dangerous because due to physiological variation some people experience it as negative feedback while some experience it as positive feedback.