



MAKING A MODEL OF LYMPH NODE FUNCTION

Explore how lymph nodes filter harmful substances and help protect the body.

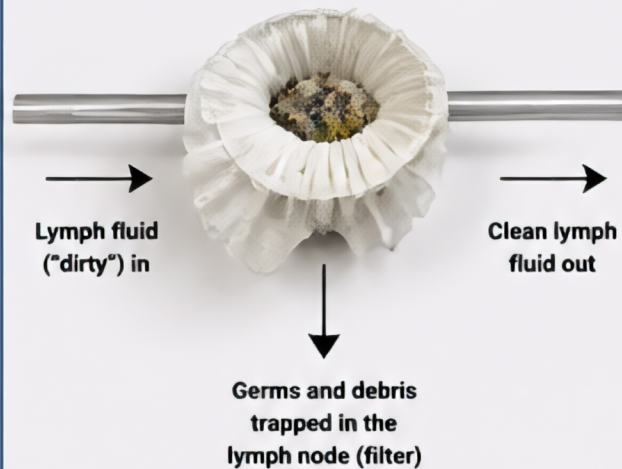
OBJECTIVE

To model how lymph nodes filter lymph fluid, trap harmful particles, and allow clean fluid to continue flowing.

BACKGROUND

Lymph nodes are small, bean-shaped structures in the lymphatic system. They act as filters for lymph fluid, trapping germs, debris, and other harmful substances. Immune cells inside the lymph node help destroy these threats. Clean lymph fluid then continues on its way through the body.

YOUR MODEL



MATERIALS

- 2 clear plastic cups
- Coffee filter
- Rubber band
- 2 pieces of clear plastic tubing or straws (at least 6 inches each)
- Water
- Food coloring (optional)
- Small "germs" (use a mix of items such as: ground pepper, glitter, small beads, or dirt)
- Tape (optional)

PROCEDURE

1. **Build the lymph node filter:** Place a coffee filter inside one cup and fold it down so it lines the cup. Secure the rim of the filter around the outside of the cup with a rubber band.
2. **Create the pathway:** Make a hole on opposite sides of the cup (just below the rim). Insert the plastic tubing or straws through the holes so they meet in the center of the cup inside the coffee filter. Seal around the holes with tape if needed to prevent leaks. The setup should look like a cup with a filter "pouch" in the middle and a tube/straw entering from one side and exiting the other.
3. **Prepare the lymph fluid:** In the second cup, mix water with a few drops of food coloring (optional). Add a mixture of "germs" (e.g., ground pepper, glitter, small beads, or dirt).
4. **Run the model:** Slowly pour the "dirty" lymph fluid into the input tube/straw. Watch as the liquid flows through the coffee filter (lymph node) and out the other side.
5. **Observe:** Examine what was trapped in the filter and compare the "dirty" input fluid to the "clean" output fluid.

OBSERVATIONS

What did the input (dirty lymph) look like? _____

What did the output (clean lymph) look like? _____

What was trapped in the filter (lymph node)? _____

REFLECTION

1. What does your model show about the job of a lymph node?

2. How does this help protect the body from illness?

3. What are some ways you can keep your lymphatic system healthy? _____

THINK LIKE A SCIENTIST!



In real life, immune cells in the lymph node destroy germs. In your model, the filter trapped them. Both help keep harmful things out and let good fluid continue moving.