Beyond the Swelling

Trace how different conditions affect immune and lymphatic tissues.

HAP.11.7 "Research and analyze the causes and effects of various pathological conditions (e.g., viral infections, auto-immune disorders, immunodeficiency disorders, and lymphomas)."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline each cause or cell change, then number the effects that follow it in order. Use your marks to compare how different conditions can produce similar symptoms.

One Symptom, Different Causes

1. A tender lump under the jaw can signal that immune cells are multiplying inside a lymph node. During an influenza infection, the virus infects cells lining the airways. Immune cells respond to the infection and may make nearby nodes swell. The immune response can cause fever and fatigue, while injured airways trigger a cough. The swelling is a response to the virus, not proof that the virus has invaded the node. HIV follows a different route: it infects and damages CD4 T cells, which help coordinate immune defenses. Over time, untreated HIV can weaken those defenses, making certain serious infections more likely.

2. Another patient has swollen nodes but no identified active infection. In systemic lupus erythematosus, the immune system makes antibodies that bind to the body's own molecules. The resulting immune complexes can lodge in tissues and drive inflammation. In the kidneys, that inflammation may damage filters that normally keep protein in the blood, allowing protein to enter urine. Lupus can also cause fever, fatigue, and swollen lymph nodes, so symptoms alone cannot identify the cause. Unlike influenza, lupus is not caused by a virus, and an antibiotic cannot fix the mistaken immune targeting.

3. A third patient has a node that stays enlarged without a recent respiratory illness. In lymphoma, abnormal lymphocytes multiply uncontrollably and form a cancer in lymphatic tissue. As these cells accumulate, nodes may enlarge; some people also have fever, drenching night sweats, or unexplained weight loss. These signs can overlap with infections, so a swollen node alone cannot diagnose lymphoma. A clinician might use blood tests and, when needed, a biopsy to investigate its cause. The four conditions show why tracing the chain from a trigger or cell change to tissue damage matters more than matching a single symptom.

2 ANSWER WITH EVIDENCE

Use the passage

1. How does a lymph node become enlarged during influenza infection, and how does it become enlarged in lymphoma?

2. Compare how HIV and lupus disrupt immune function. What effect can each disruption have?

3. Trace the steps from antibody production in lupus to protein appearing in urine.

4. A patient has fever and an enlarged lymph node. Why would those symptoms alone not show whether the patient has influenza or lymphoma?

3 YOUR TURN

Your own words

Invent a patient case in four or five sentences. Include two symptoms, explain a cause-to-effect chain for one possible condition from the passage, and name a different condition that could share a symptom but have a different cause.

Beyond the Swelling

PART 1 · READ AND MARK

Underline each cause or cell change, then number the effects that follow it in order. Use your marks to compare how different conditions can produce similar symptoms. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How does a lymph node become enlarged during influenza infection, and how does it become enlarged in lymphoma?	**During influenza, responding immune cells multiply in a node. In lymphoma, abnormal lymphocytes multiply uncontrollably and accumulate.**
2	Compare how HIV and lupus disrupt immune function. What effect can each disruption have?	**HIV damages CD4 T cells and can weaken defenses, making serious infections more likely. In lupus, the immune system targets the body's own molecules, causing inflammation that can damage tissues.**
3	Trace the steps from antibody production in lupus to protein appearing in urine.	**Antibodies bind to the body's own molecules, forming immune complexes. These can lodge in kidney tissue and cause inflammation that damages filters, allowing protein into urine.**
4	A patient has fever and an enlarged lymph node. Why would those symptoms alone not show whether the patient has influenza or lymphoma?	**Both conditions can cause fever and enlarged nodes, but influenza involves a viral infection and immune response, while lymphoma involves uncontrolled growth of abnormal lymphocytes.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

A patient has a cough and a tender swollen node under the jaw. Influenza is one possibility because it infects airway cells and triggers an immune response that can enlarge nearby nodes. Lymphoma could also cause an enlarged node, but its cause is uncontrolled growth of abnormal lymphocytes rather than an airway infection. The shared symptom alone cannot confirm either condition.

Accept accurate cause-to-effect chains and reasonable comparisons supported by the passage. Student cases should treat symptoms as clues, not as proof of a diagnosis.