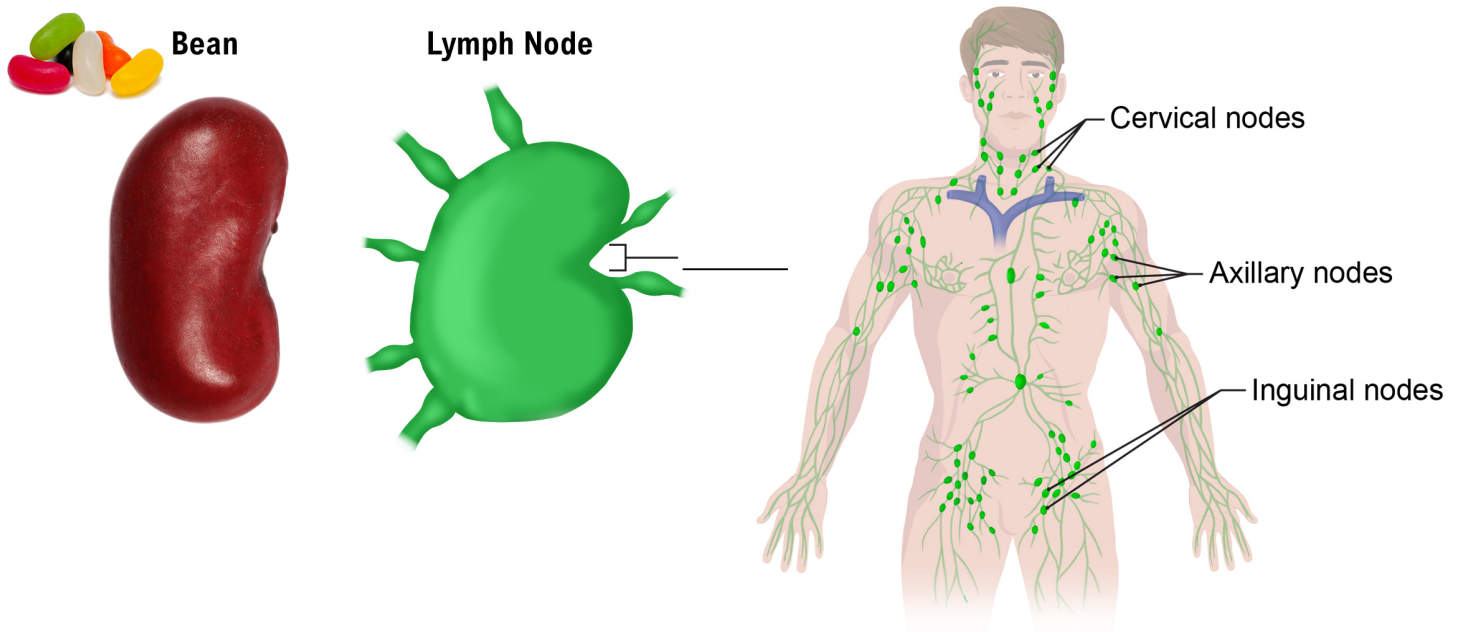


## TOPIC: SECONDARY LYMPHOID ORGANS: LYMPH NODES

### Introduction to Lymph Nodes

- ◆ **Lymph Nodes:** small, bean-shaped structures along lymphatic vessels throughout body that \_\_\_\_\_ lymph.
  - ▶ Amount, size, & shape of lymph nodes \_\_\_\_\_ & is *dynamic*; typically there are hundreds!
  - ▶ Each lymph node contains lots of *immunocompetent* \_\_\_\_\_.
- ◆ Lymph nodes are also critical for *immune* system \_\_\_\_\_.
  - ▶ \_\_\_\_\_ cells transport antigens to lymph nodes to *activate* lymphocytes.
  - ▶ Activated lymphocytes can *migrate* to site of infection to generate immune response.



### **EXAMPLE**

Which of the following is NOT a function of lymph nodes?

- a) Filtration of lymph.
- b) Providing a site for lymphocytes to mature.
- c) Initiating the immune response when a foreign antigen is detected.
- d) These are all functions of lymph nodes.

### **PRACTICE**

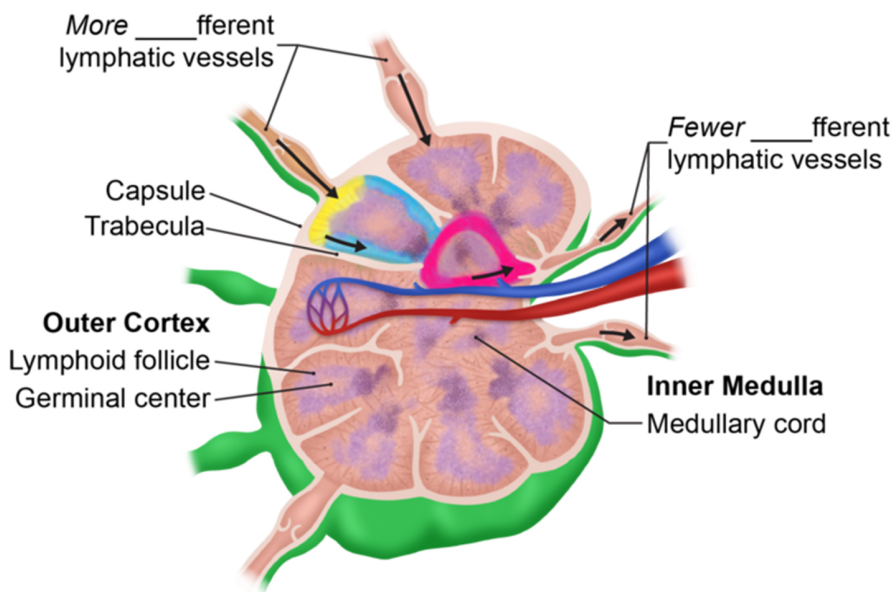
In which of the following areas are lymph nodes usually highly concentrated?

- a) Feet.
- b) Chest.
- c) Hands.
- d) Neck.

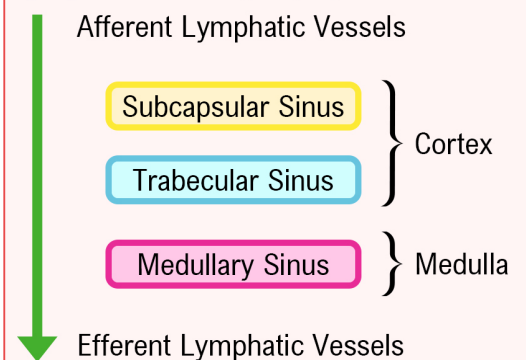
## TOPIC: SECONDARY LYMPHOID ORGANS: LYMPH NODES

### Lymph Node Structure

- ◆ Externally, they are surrounded by a \_\_\_\_\_.
- ◆ Internally, they are divided into \_\_\_\_\_ interior regions: 1) Outer Cortex & 2) Inner Medulla.
  - ▶ Cortex has lymphoid follicles with mostly \_\_\_\_\_ cells; medulla has *medullary cords* with both B & \_\_\_\_\_ cells.
  - ▶ **Trabeculae**: inward capsular extensions that partially \_\_\_\_\_ outer cortex into compartments.
  - ▶ **Sinuses**: series of lymph carrying \_\_\_\_\_ with branching reticular fibers & lymphoid cells.



### Lymph Flow Through Lymph Node



**Note:** a small % of lymph & activated lymphocytes may enter the bloodstream at each lymph node.

### EXAMPLE

Which of the following features are present in both the thymus and in lymph nodes?

- a) Medulla.
- b) Sinuses.
- c) Lymphoid nodules.
- d) Germinal centers.

### PRACTICE

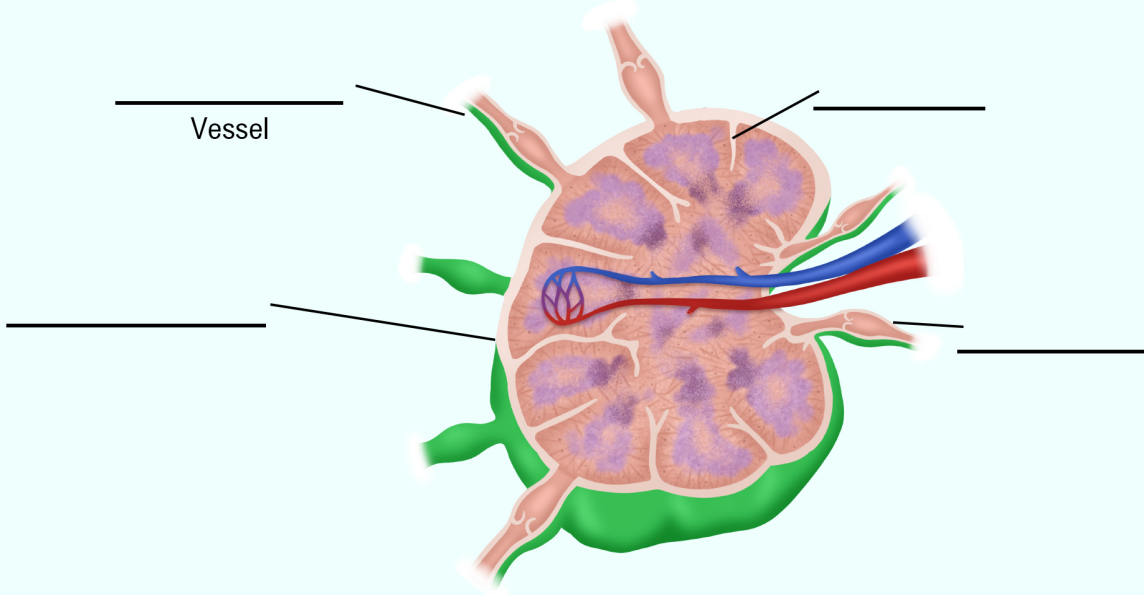
Lymph enters the convex side of a lymph node via \_\_\_\_\_ lymphatic vessels. It moves through the \_\_\_\_\_ & then into the \_\_\_\_\_. Lymph exits the node at its hilum, via \_\_\_\_\_ lymphatic vessels

- a) Efferent; cortex; medulla; afferent.
- b) Efferent; medulla; cortex; afferent.
- c) Afferent; cortex; medulla; efferent.
- d) Afferent; medulla; cortex; efferent.

## TOPIC: SECONDARY LYMPHOID ORGANS: LYMPH NODES

### EXAMPLE

Correctly label the indicated areas of the lymph node.



## PRACTICE

Which of the following options correctly represents the flow of lymph through a lymph node?

- a) Afferent vessel > subcapsular sinus > trabecular sinus > medullary sinus > efferent vessel.  
b) Afferent vessel > trabecular sinus > subcapsular sinus > medullary sinus > efferent vessel.  
c) Efferent vessel > subcapsular sinus > trabecular sinus > medullary sinus > afferent vessel.  
d) Afferent vessel > subcapsular sinus > medullary sinus > trabecular sinus > efferent vessel.