

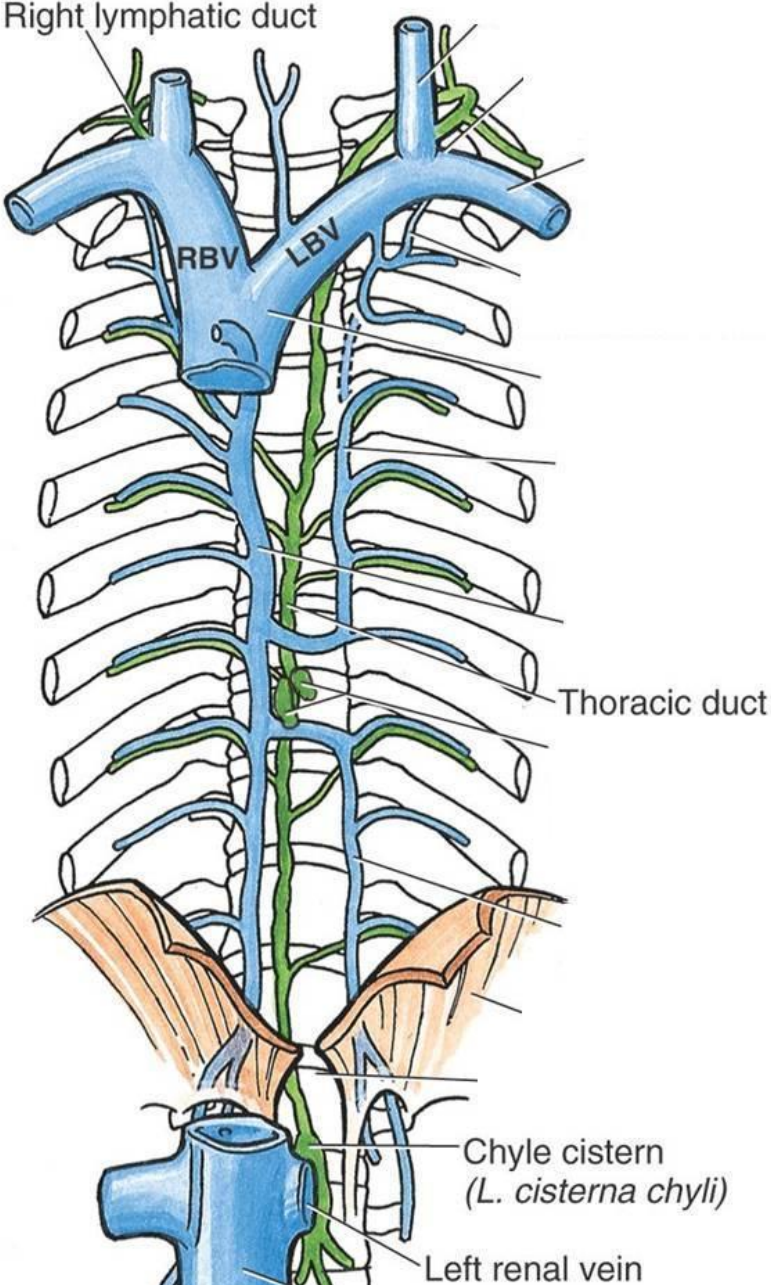
Lymph collection in the body

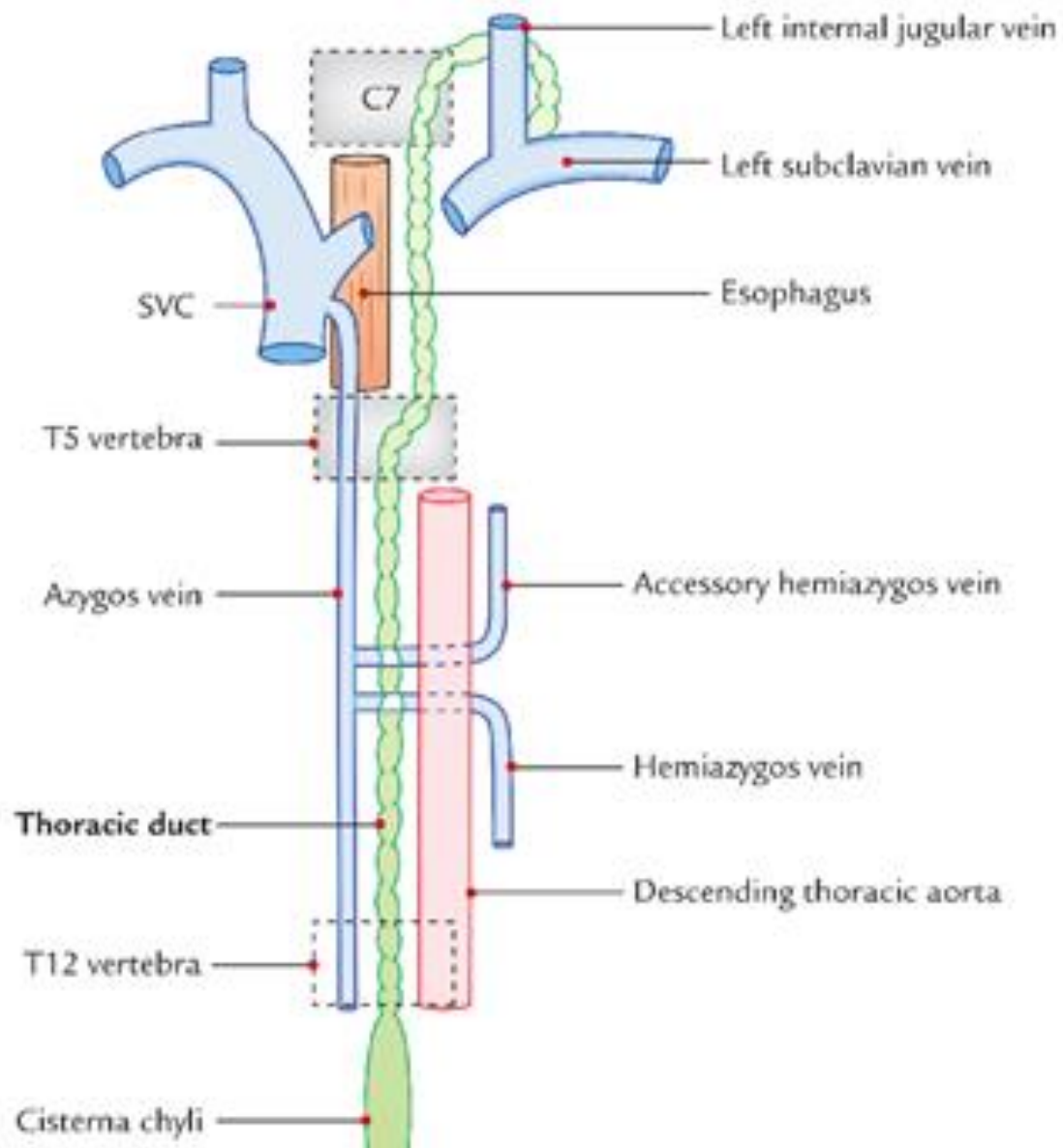
- Lymph is the name given to tissue fluid once it has entered a lymphatic vessel.
- Lymph capillaries are a network of fine vessels that drain lymph from the tissues.
- The capillaries are in turn drained by small lymph vessels, which unite to form large lymph vessels.
- Lymph vessels have a beaded appearance because of the presence of numerous valves along their course.
- Before lymph is returned to the bloodstream, it passes through at least **one lymph node** and often through several.

- The lymph vessels that carry lymph to a lymph node are referred to as afferent vessels and those that transport it away from a node are efferent vessels. The
- lymph reaches the bloodstream at the root of the neck by large lymph vessels called **the right lymphatic duct and the thoracic duct**

Thoracic duct

- The thoracic duct begins below in the abdomen as a dilated sac, **the cisterna chyli**.
- It ascends through the aortic opening in the diaphragm, on the right side of the descending aorta.
- It gradually crosses the median plane behind the esophagus and reaches the left border of the esophagus at the level of the lower border of the body of the 4th thoracic vertebra (sternal angle). It then runs upward along the left edge of the esophagus to enter the root of the neck, Here, it bends laterally behind the carotid sheath and in front of the vertebral vessels. It turns downward in front of the left phrenic nerve and crosses the subclavian artery to enter the beginning of the left brachiocephalic vein.

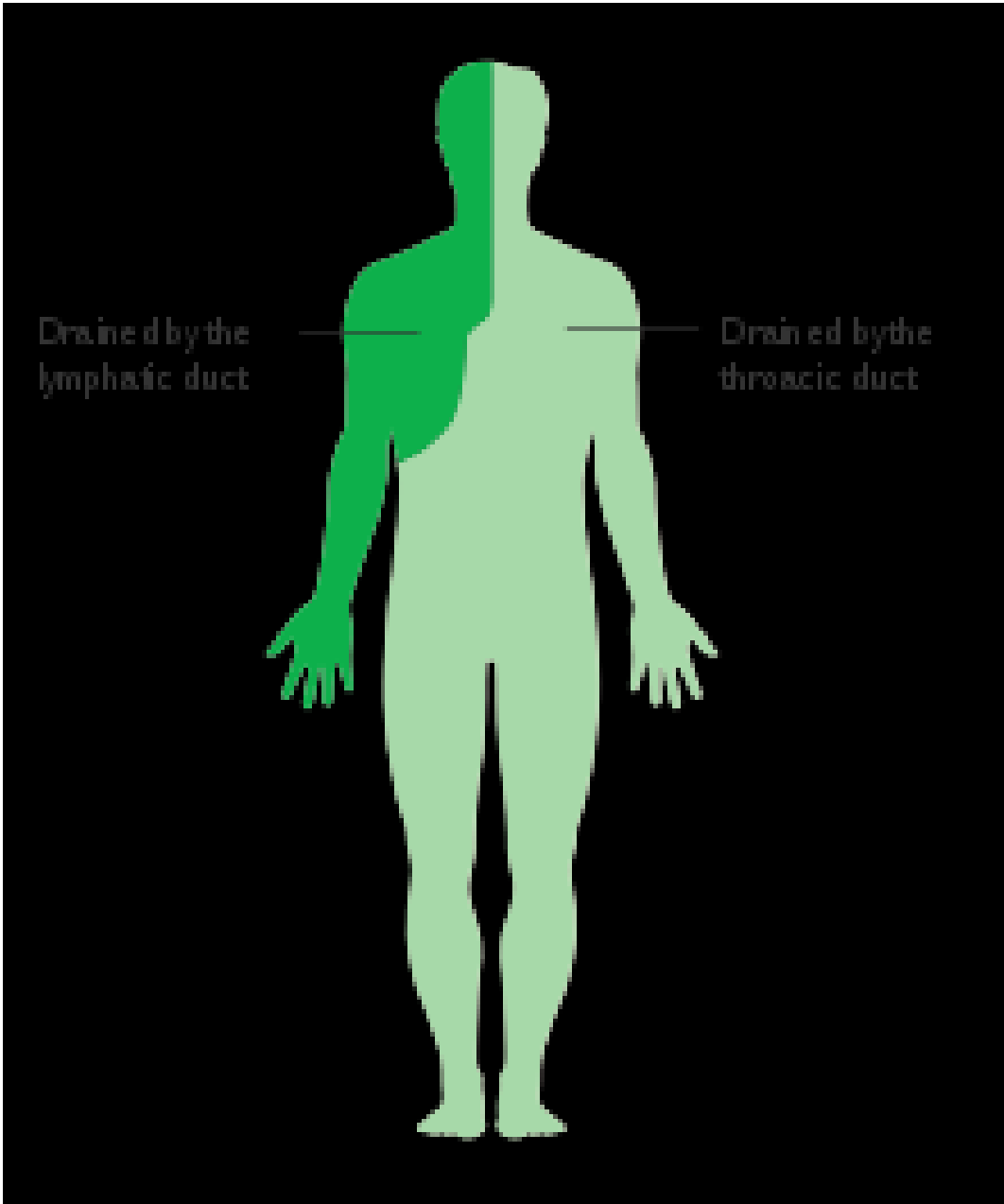




At the root of the neck, the thoracic duct receives the

- left jugular,
- subclavian,
- and bronchomediastinal lymph trunks, although they may drain directly into the adjacent large veins.
- The thoracic duct thus conveys to the blood all lymph from :

1. the lower limbs,
2. pelvic cavity,
3. abdominal cavity,
4. left side of the thorax, and left side of the head, neck, and left arm



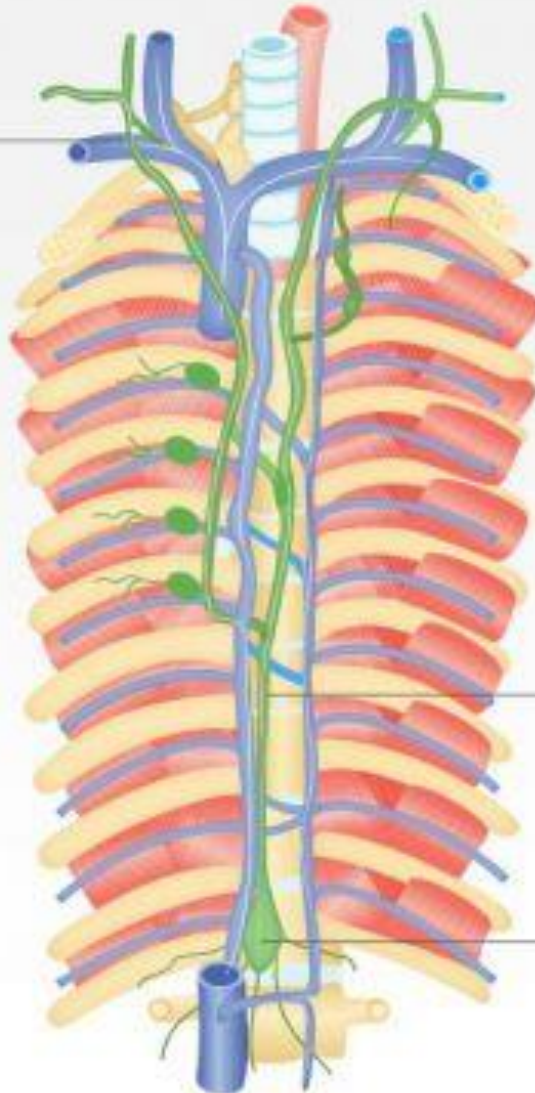
Right Lymphatic Duct

- The right jugular, subclavian, and bronchomediastinal trunks, which drain the right side of the head and neck, the right upper limb, and the right side of the thorax, respectively, may join to form the right lymphatic duct. This common duct, if present, is about 0.5 in. (1.3 cm) long and opens into the beginning of the right brachiocephalic vein.

Alternatively, the trunks open independently into the great veins at the root of the neck.

Right lymphatic duct

Right lymphatic duct empties at junction of right internal jugular and right subclavian veins



Thoracic duct - empties into junction of left internal jugular and left subclavian veins

Cisterna chyli - most inferior part of thoracic duct

Lymph nodes in the body

- 1 Lymph nodes of the head
- 2 Lymph nodes of the neck
- 3 Lymph nodes of the thorax
- 4 Lymph nodes of the abdomen
- 5 Lymph nodes of the arm
- 6 Lower limbs

Lymph nodes of the head

- Occipital lymph nodes
- Mastoid lymph nodes
- Parotid lymph nodes

Lymph nodes of the neck

1. Cervical lymph nodes
2. Submental lymph nodes
3. Submandibular lymph nodes
4. Deep cervical lymph nodes
5. Deep anterior cervical lymph nodes
6. Deep lateral cervical lymph nodes
7. Inferior deep cervical lymph nodes
8. Jugulo-omohyoid lymph node
9. Jugulodigastric lymph node
10. Supraclavicular lymph nodes
11. Virchow's node

Lymph nodes of the thorax

1. **Lymph nodes of the lungs:** The lymph is drained from the lung tissue through subsegmental, segmental, lobar and interlobar lymph nodes to the hilar lymph nodes, which are located around the hilum of each lung. The lymph flows subsequently to the mediastinal lymph nodes.

2. Mediastinal lymph nodes: They consist of several lymph node groups, especially along the trachea (5 groups), along the esophagus and between the lung and the diaphragm.

- In the mediastinal lymph nodes arises lymphatic ducts, which drains the lymph to the left subclavian vein.

Lymph nodes of the abdomen

1. Periaortic lymph nodes
2. Preaortic lymph nodes
3. Celiac lymph nodes
4. Hepatic lymph nodes
5. Gastric lymph nodes
6. Splenic lymph nodes
7. Superior mesenteric lymph nodes
8. Inferior mesenteric lymph nodes
9. Retroaortic lymph nodes
10. Nodes around the iliac vessels are:
11. Common iliac lymph nodes
12. Internal iliac lymph nodes
13. External iliac lymph nodes
14. Sacral lymph nodes
15. Retroperitoneal lymph nodes

Lymph nodes of the arm

- **Superficial lymph nodes of the arm:**
- Supratrochlear nodes: Situated above the medial epicondyle of the humerus, medial to the basilic vein, they drain the C7 and C8 dermatomes.
- Deltoideopectoral nodes: Situated between the pectoralis major and deltoid muscles inferior to the clavicle.
- **Deep lymph nodes of the arm:**
- These comprise the axillary nodes, which are 20-30 individual nodes and can be subdivided into:
 - Lateral nodes
 - Anterior or pectoral nodes
 - Posterior or subscapular nodes
 - Central or intermediate nodes
 - Medial or subclavicular nodes

Lower limbs lymph nodes

- Superficial inguinal lymph nodes
- Deep inguinal lymph nodes
- Popliteal lymph nodes