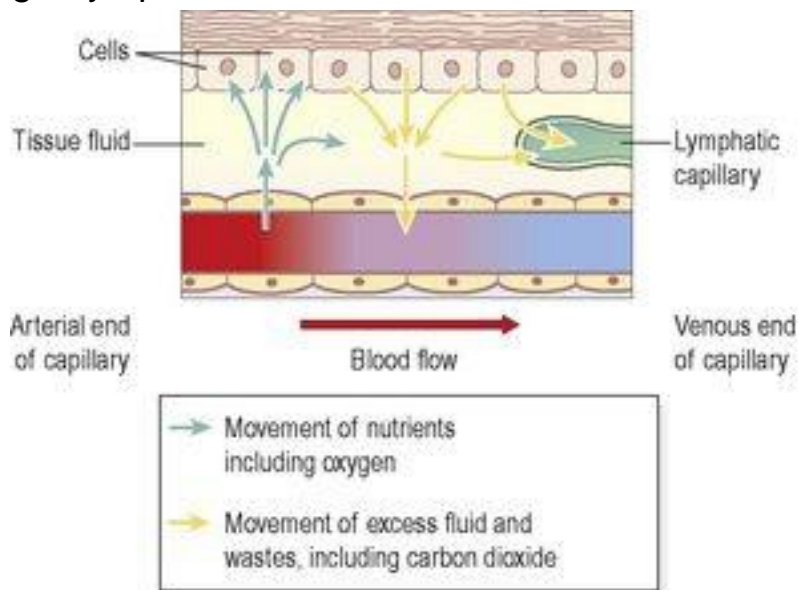


## Lymph

Lymph is a clear watery fluid, similar in composition to plasma, with the important exception of plasma proteins, and identical in composition to interstitial fluid. Lymph transports the plasma proteins that seep out of the capillary beds back to the bloodstream. It also carries away larger particles, e.g. bacteria and cell debris from damaged tissues, which can then be filtered out and destroyed by the lymph nodes. Lymph contains lymphocytes, which circulate in the lymphatic system allowing them to patrol the different regions of the body. In the lacteals of the small intestine, fats absorbed into the lymphatics give the lymph (now called *chyle*), a milky appearance.

## Lymph capillaries

These originate as blind-end tubes in the interstitial spaces. They have the same structure as blood capillaries, i.e. a single layer of endothelial cells, but their walls are more permeable to all interstitial fluid constituents, including proteins and cell debris. The tiny capillaries join up to form larger lymph vessels.



**Fig: The origin of a lymph capillary**

## Larger lymph vessels

Lymph vessels are often found running alongside the arteries and veins serving the area. Their walls are about the same thickness as those of small veins and have the same layers of tissue, i.e. a fibrous covering, a middle layer of smooth muscle and elastic tissue and an inner lining of endothelium. Like veins, lymph vessels have numerous cup-shaped valves to ensure that lymph flows in a one-way system towards the thorax. There is no 'pump', like the heart, involved in the onward movement of lymph, but the muscle layer in the walls of the large lymph vessels has an intrinsic ability to contract rhythmically (the lymphatic pump).

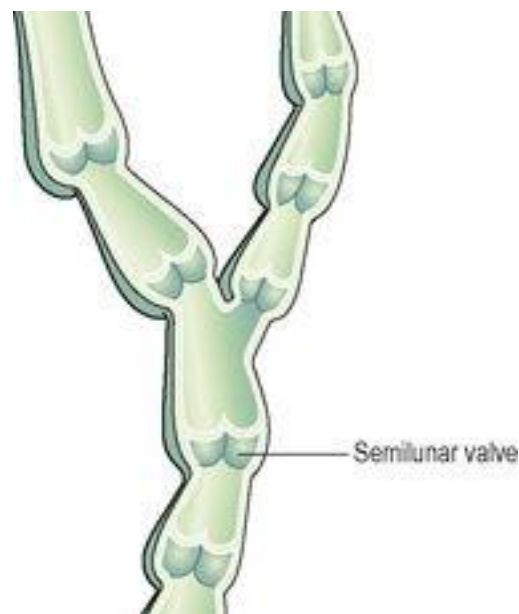


Fig:A lymph vessel cut open to show valves.

## Thoracic duct

This duct begins at the *cisterna chyli*, which is a dilated lymph channel situated in front of the bodies of the first two lumbar vertebrae. The duct

is about 40 cm long and opens into the left subclavian vein in the root of the neck. It drains lymph from both legs, the pelvic and abdominal cavities, the left half of the thorax, head and neck and the left arm.

### **Right lymphatic duct**

This is a dilated lymph vessel about 1 cm long. It lies in the root of the neck and opens into the right subclavian vein. It drains lymph from the right half of the thorax, head and neck and the right arm