

HUMAN ANATOMY AND PHYSIOLOGY 1(BP101T)

UNIT: 3 LYMPHATIC SYSTEM

CLASS: 8

TOPIC: LYMPHATIC ORGANS AND TISSUES

Lymphatic system composed of

1. Lymph
2. Lymphatic capillaries, lymphatic venules or lymphatic vessels
3. Lymphatic duct
4. Lymphatic nodes
5. Lymphatic organs
6. Diffused lymphoid tissue

1. 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.

Definition: Lymph is a thin, watery, clear, modified tissue fluid formed by the passage of substance from the blood capillaries into the tissue spaces. It flows in a closed system of vessels, sinuses, capillaries etc. called lymphatic system.

Composition of lymph:

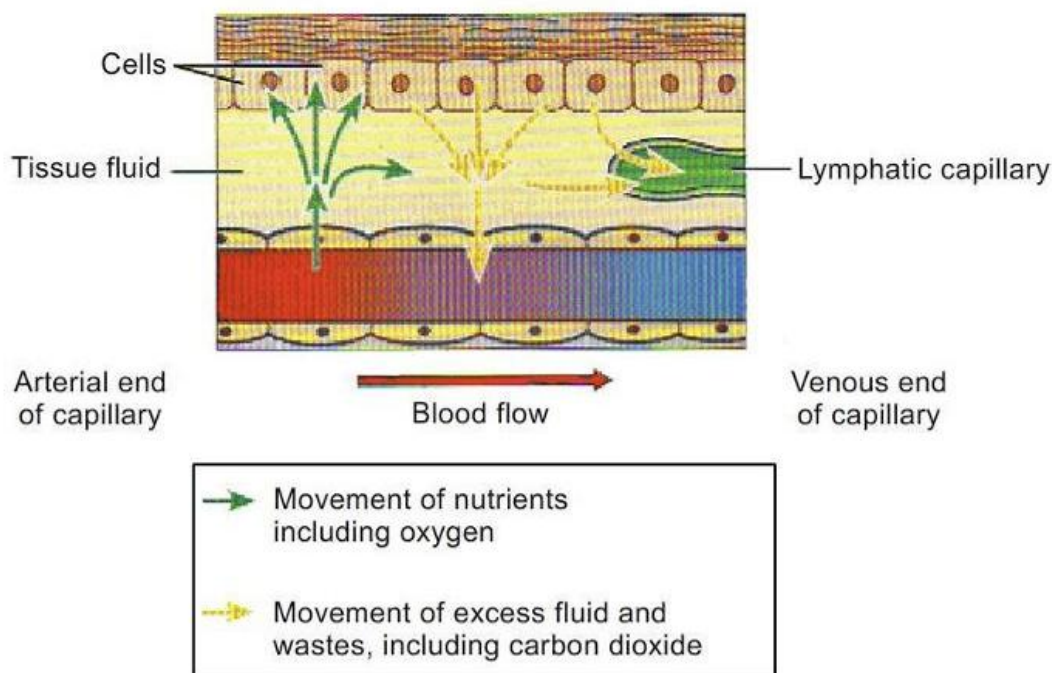
Lymph consists of large number of leucocytes mainly lymphocytes ranging from 1000 to 20,000/mm³.

- Platelets and RBCs are absent in lymph.

- The noncellular part consists of 94% water and 6% solids in a soluble form.
- The composition of solids varies from time to time and according to the site.
- The main solids are:

S.NO	SOLID SUBSTANCE	QUANTITY
1.	Protein	2.0-4.5%
2.	Fats	5.0-15.0%
3.	Carbohydrates	130mg%
4.	Urea	23.5%
5.	Non-Proteinous Nitrogen substance	34.0%
6.	Creatine	1.4 mg%
7.	Other inorganic	

Formation of lymph: Lymph is formed by passage of capillaries in to the tissue spaces by the process of transudation.



The transudation includes filtration and diffusion. Since the lymph is formed from the tissue fluid, anything that increases the lymph formation and its flow are called lymphagogue.

FUNCTIONS OF LYMPH:

- 1) To drain the excess of interstitial fluid in to the circulatory system.
- 2) To supply nutrients to such parts where blood does not reach besides dissolved nutrients, it also supplies oxygen to those parts.
- 3) Lymph also helps in transport of proteins from interstitial fluid to blood.
- 4) Défense mechanism is one of the important functions of lymph.
- 5) It drains the bacteria and toxins along the lymphatics and traps them in lymph nodes. Lymphocytes and monocytes contained in lymph acts as body defense. Thus it is a filter and also a killer of microbes and their toxins and other foreign bodies. 6) Fats are absorbed from interstitial villi through blind- end lymphatic called lacteals. The lymphocytes contained in the lymph acts as porters of fat.