Medical Terminology





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Lecture Five

IMMUNITY

An overview of lymphatic system and immunity

The lymphatic system is a network of tissues and vessels that is widespread throughout the body. The lymphatic system and the cardiovascular system are closely related body systems that are joined by a capillary network. The lymphatic system circulates fluid called **lymph** through a one-way system as opposed to the closed circuit of the cardiovascular system. Lymph is similar to blood in that it is composed of special cells and fluid. **Lymphocytes** (lymph/o means "lymph"; -cyte means "cell") are a type of white blood cell that work in the lymph system to fight disease and infection. Therefore, the lymph system is an integral part of the body's defense against disease. **Immunity** (from a Latin word meaning "exemption or free from service") means protection against disease. In other words, one of the major functions of the lymphatic system is immunity or to protect the body from infection. The other two major functions of the lymphatic system are to maintain a balance of fluid and to absorb fats that are broken down in the digestive tract.



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Structure and Function

The lymph system consists of lymph vessels, lymph, special lymphoid (lymph/o means "lymph"; -oid means "like" or "resembling") tissues called lymph nodes, and lymph organs.

All of these structures play an important role in the body's immune responses. As mentioned earlier, one of the other major functions of the lymphatic system is to maintain fluid balance.

Lymphatic structures

The lymph capillaries (comes from the Latin word *capillus* meaning "hair") are similar to blood capillaries in that they are thin-walled tubes that carry fluid (lymph) to larger vessels.

Lymph is a clear yellowish liquid that is collected from tissue as it seeks out of capillaries from cardiovascular system, it contains Lymphocytes that attack and destroy foreign organismic Lymph is picked up by Lymph vessels, filtered by the Lymph node, L. node are small beans shape, structures that filter the Lymph.

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Lymphatic organs

There are four protective organs (lymphoid tissues) that play a role in immunity. They arethe tonsils, spleen, thymus gland, and the appendix

- Tonsils (tonsill/o is the root): Located in the pharynx, this lymphoid tissue filters bacteria.
- Spleen (splen/o is the root): Located in the upper left quadrant of the abdomen, this lymphatic tissue filters bacteria from the blood and removes old blood cells by means of a process called hemolysis (hem/o means "blood"; -lysis means "destruction of"). The process by which the lymphocytes engulf the bacteria and debris in the spleen is called **phagocytosis** (phag/omeans "to ingest"; cyt/o means "cell"; -osis means "abnormal condition of").
- Thymus (thym/o is the root) gland: Located superior to the heart, this endocrine gland processes lymphocytes and stimulates immunity.
- Appendix (appendic/o is the root): An attachment to the large intestine, it contributes to the development of immunity. **Peyer's patches** are small bundles of lymphoid tissue located on the walls of the small intestine that help protect against invading organisms.

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Types of Immunity

- 1-Natural Immunity
- 2- Acquired Immunity
- 3-Artificial Immunity

Natural immunity it passed from mother to child before birth.

Acquired immunity is obtained when a person acquires an infection disease such as chickenpox.

Artificial Immunity (immunization) it is acquired through vaccination, example (flu, hepatitis B, measles).

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Disorder and treatments

A Lymphadenitis: mean inflammation of Lymphatic gland.

Lymphedema: (means accumulation of excess fluid) due obstruction of Lymphatic vessels due to tumors or surgical excision.

Acquired immunodeficiency syndrome (AIDS): it is an advanced stage of human ammuno -adenopathy.

Infectious mononucleosis: caused by virus and noted by enlarged cervical Lymph node.

Splenomegaly: enlargement of spleen seen with other infectious disease.

Anaphylaxis: it means without protection life threating reaction.

Hodgkin lymphoma: Chronic malignant disease of the lymph nodes.

Rheumatoid arthritis: An autoimmune disorder.

Lupus erythematosus: Chronic inflammatory disorder that affects multiple body systems; characterized by a "butterfly rash" over the face.

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Pharmacology

A number of drug classifications are used as part of a therapeutic regimen in lymphatic and immune disorders.

Corticosteroids is used to relieve inflammatory condition.

Immunosuppressants suppressant means prevent disease of foreign tissues. Immunization or vaccination.

Antiviral use to treat a diseases caused by viral infection.

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Abbreviation table, the lymphatic system and Immunity

| Abbreviation Table • The Lymphatic System and Immunity | |
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| ABBREVIATION | MEANING |
| AIDS | acquired immunodeficiency syndrome |
| CBC | complete blood count |
| HIV | human immunodeficiency virus |
| HLA | human leukocyte antigen |
| RA | rheumatoid arthritis |
| RIA | radioimmunoassay |
| SLE | systemic lupus erythematosus (usually shortened to lupus), an autoimmune disorder |