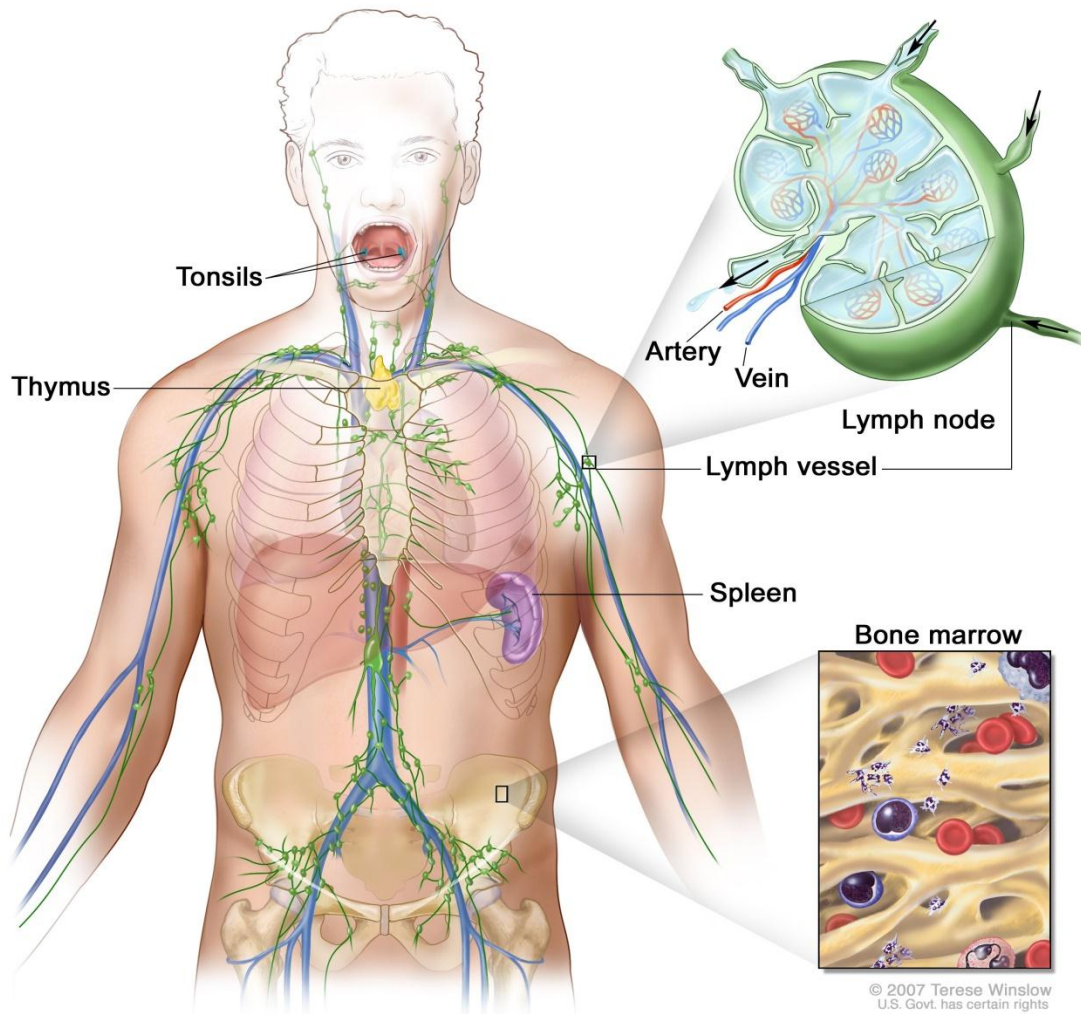


The Lymphatic System



What is the lymphatic system?

The lymphatic system is a network of tissues, vessels and organs that work together to move a colorless, watery fluid called lymph back into the circulatory system (bloodstream).

The lymphatic system actually has many functions. Its key functions include:



-
- Maintains fluid levels in our body.
 - Absorbs fats from the digestive tract.
 - Protects the body against foreign invaders.
 - Transports and removes waste products and abnormal cells from the lymph.

What are the parts of the lymphatic system?

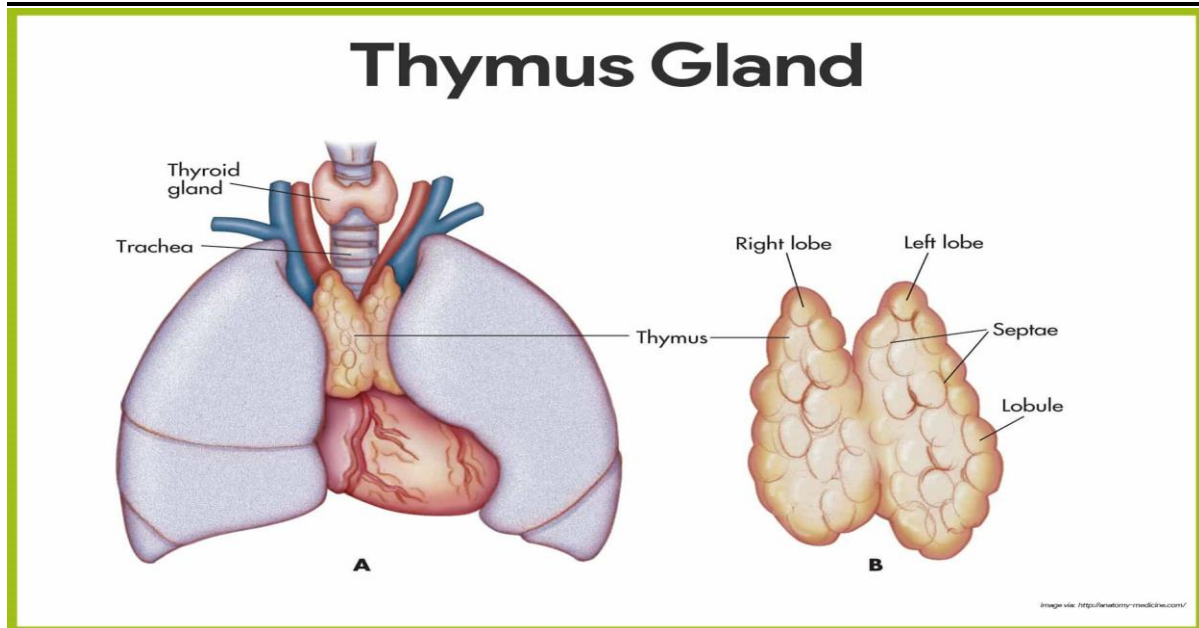
The lymphatic system consists of many parts. These include:

- **Primary lymphoid organs** (or central lymphoid organs) - sites where lymphocytes mature and become immune-competent - B cells in bone marrow and T cells in the thymus.
- **Secondary lymphoid organs** (or peripheral lymphoid tissue) - mature lymphocytes are distributed via blood or lymph to secondary lymphoid organs (*e.g.*, lymph nodes, spleen, and diffuse lymphoid tissues) where they await activation.

❖ Thymus

The **thymus** is a primary lymphoid organ in which T lymphocytes proliferate and mature before distribution to peripheral lymphoid tissues. It generates a diverse population of T lymphocytes that respond to foreign antigens, but not to self-antigens.

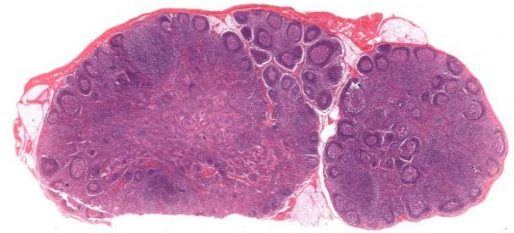
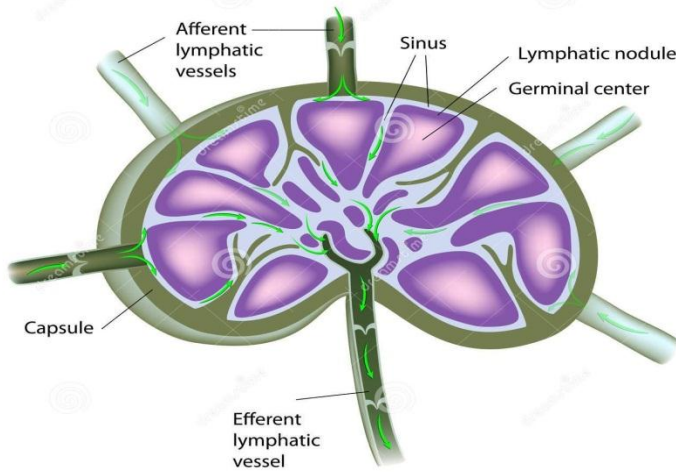
The thymus continues to enlarge up to puberty but then undergoes a slow involution becoming replaced by adipose tissue.



❖ Lymph Node

A small bean-shaped encapsulated structure that is part of the body's immune system. Lymph nodes filter substances that travel through the lymphatic fluid, and they contain lymphocytes (white blood cells) that help the body fight infection and disease. There are hundreds of lymph nodes found throughout the body. They are connected to one another by lymph vessels. Clusters of lymph nodes are found in the neck, axilla (underarm), chest, abdomen, and groin. For example, there are about 20-40 lymph nodes in the axilla. Also called lymph gland.

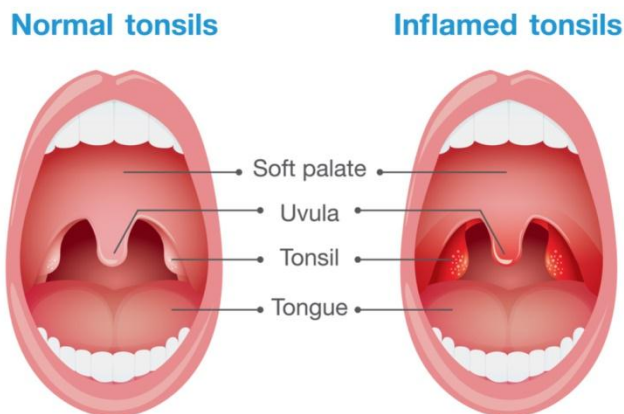
Anatomy of a Lymph Node



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❖ Tonsils

Tonsils are mucosa-associated lymphoid tissue (MALT) found in the underlying connective tissue surrounding the upper part of the pharynx. These diffuse, non-encapsulated nodules are named according to their location. The tonsils are immune-competent organs which serve as the immune system's first line of defense against ingested or inhaled foreign pathogens





❖ Spleen

The **spleen** is the largest secondary lymphoid organ in the body. It contains two morphologically and functionally distinct compartments:

- **Red pulp** - filters the blood of foreign material and old or damaged red blood cells
- **White pulp** - site of immune reactions to blood-borne antigens

The spleen is also a storage site of red blood cells, platelets, and iron.