

PRACTICAL HISTOLOGY

Lymphoid Tissue

Lymphoid tissue covers all of the various tissues that are important in mounting an immune response. This includes discrete organs such as the spleen, thymus and lymph nodes, as well as more diffuse aggregations of lymphocytes.

A fluid called **lymph**, (*lymph* = clear fluid) flows in lymphatic vessels, lymphatic tissue and red bone marrow.

Fluid filters out of capillaries and drains into lymphatic vessels to become lymph.

The content of **lymph** is the same as interstitial fluid, the fluid around tissue cells.

Lymph eventually drains into venous blood.

Lymph drains interstitial fluid, transports dietary lipids and facilitates immune responses.

Primary and Secondary Lymphoid Tissues

Primary lymphatic organs are where **lymphocytes** are **formed and mature**. They provide an environment for stem cells to divide and mature into B- and T- cells:

There are two primary lymphatic organs: the red bone marrow and the [thymus gland](#).

Both T-cell and B-cells are 'born' in the bone marrow.

However, whereas B cells also mature in the bone marrow, T-cells have to migrate to the thymus, which is where they mature in the thymus.

Secondary lymphoid tissues are arranged as a series of filters monitoring the contents of the extracellular fluids, i.e. lymph, tissue fluid and blood. The lymphoid tissue filtering each of these fluids is arranged in different ways. Secondary lymphoid tissues are also where lymphocytes are **activated**.

These include: **lymph nodes, tonsils, spleen, Peyer's patches** and **mucosa associated lymphoid tissue (MALT)**.

Tonsils are large partially-encapsulated masses of lymphoid tissue, found in the walls of the pharynx and nasopharynx, and at the base of the tongue. They form an incomplete ring around the gastrointestinal and respiratory tracts, where they cross over.

Peyer's patches are large masses of confluent lymphoid follicles, found in the walls of the ileum, part of the small intestine.

The **spleen** is a large encapsulated organ in left upper part of abdomen, the outer capsule is fibro-elastic.