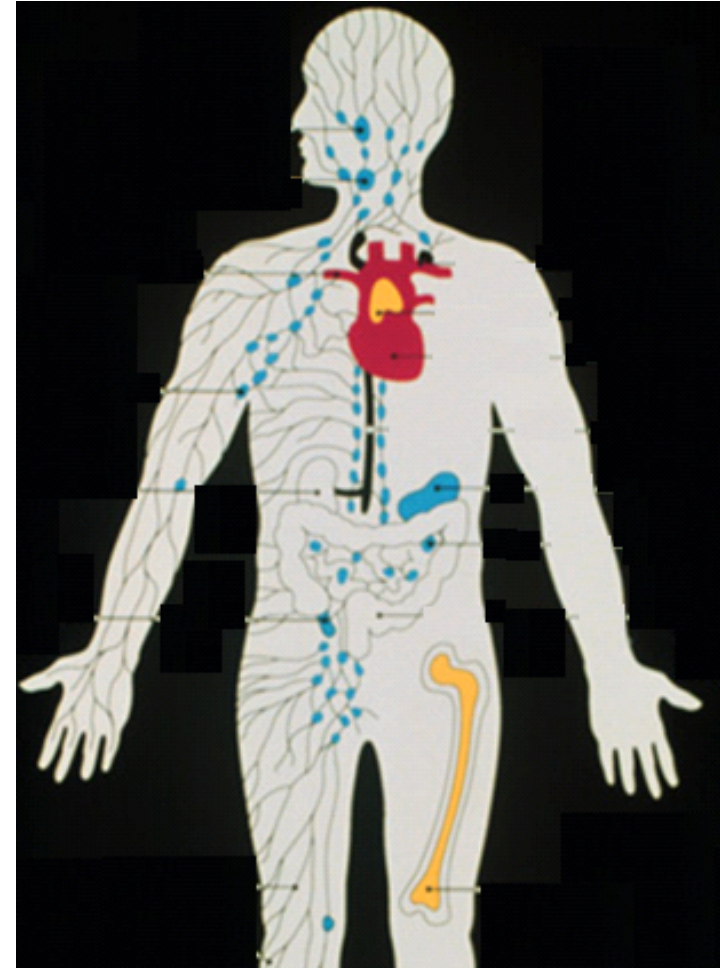


Lymphoid Tissues



What are the lymphoid tissues?

- Organised tissues containing immune cells.
- Where cells develop and mature, (primary/central LT).
- Where lymphocytes interact with non-lymphoid cells, (secondary/peripheral LT).
- Where cellular interactions and then initiation of adaptive immune responses

Major lymphoid organs and tissue

Primary lymphoid tissues: (Central)

- **Bone marrow:** B cells maturation, Myeloid cells, NK.
- **Thymus:** T cells maturation

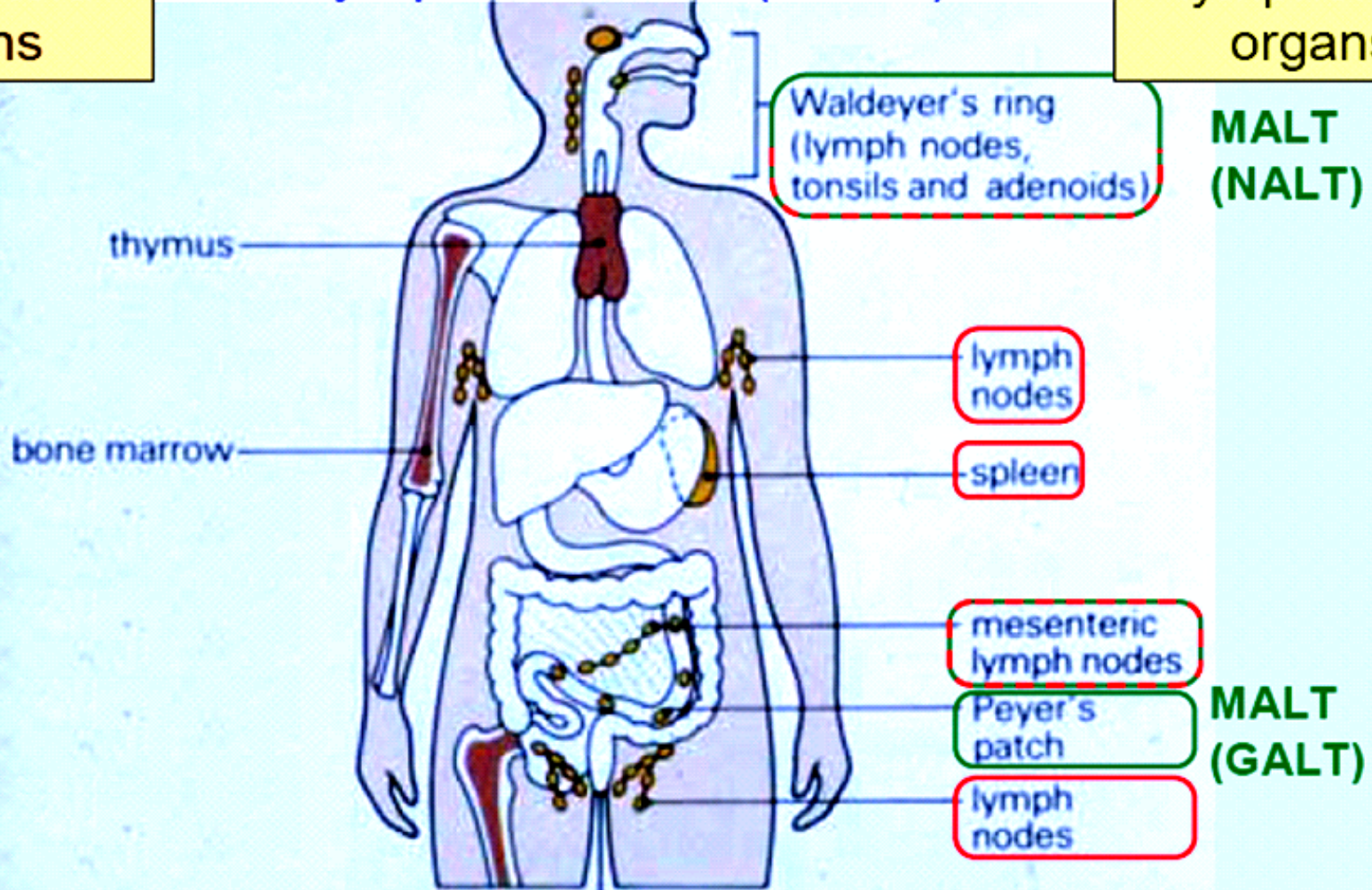
Secondary lymphoid tissues: (Peripheral)

- Lymph nodes
- Spleen
- Mucosal lymphoid tissues (adenoids, tonsils, Peyer's patches etc).

Primary
lymphoid
organs

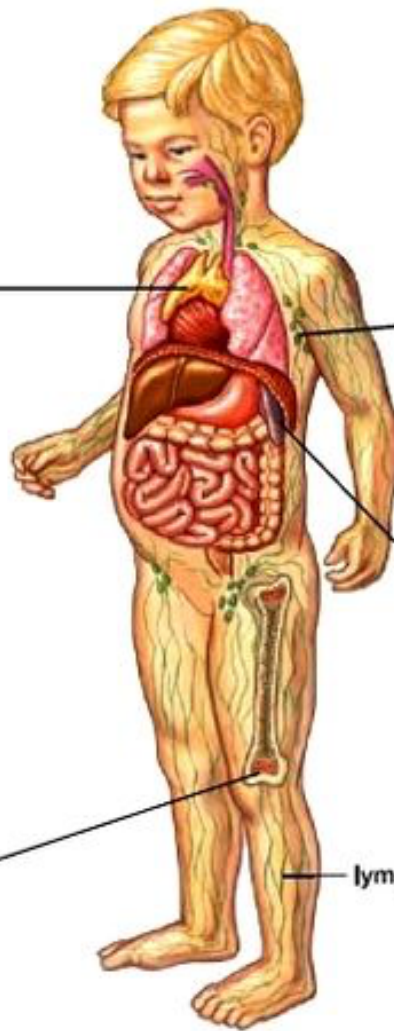
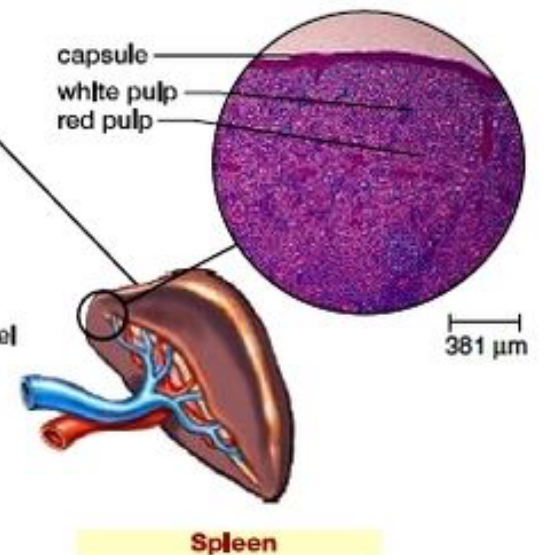
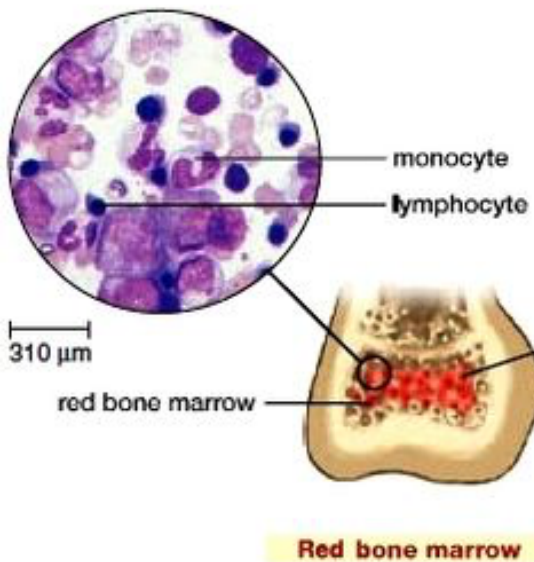
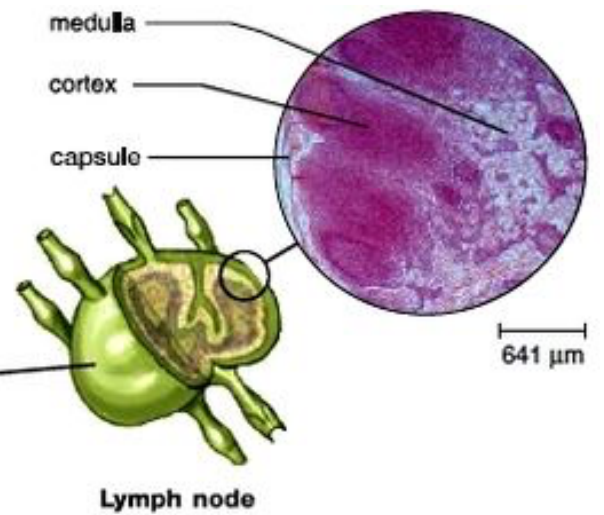
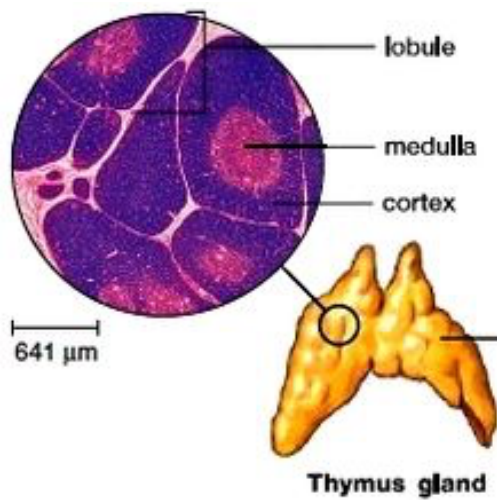
Systemic and mucosa-associated lymphoid tissue (MALT)

Secondary
lymphoid
organs



What are the job of LT?

- Most important part of the immune system.
- Immune cell development and maturation.
- Gathering and destroying infectious agents by mounting immune responses.



Bone Marrow (BM)

- Origin of immune system cells
- Network of stromal epithelial cells
- Haematopoietic stem cells
- Growth factors regulate cell proliferation and differentiation
- B cell maturation

Different sites for B cell development

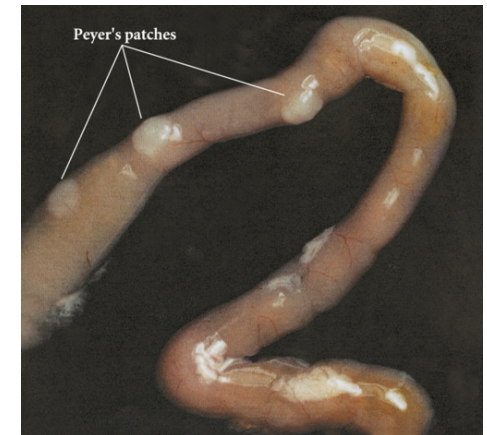
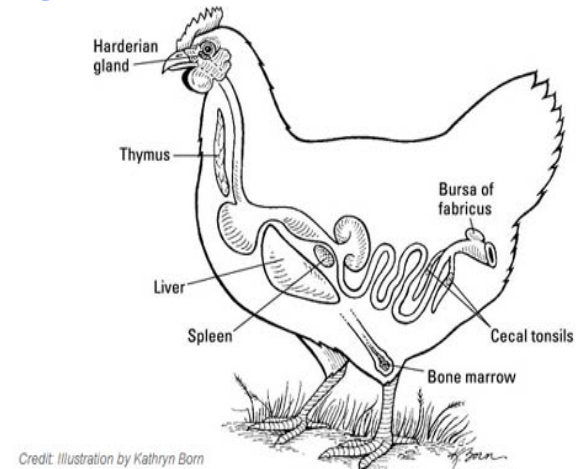
1- Birds → Bursa of Fabricius

2- Mammals → BM

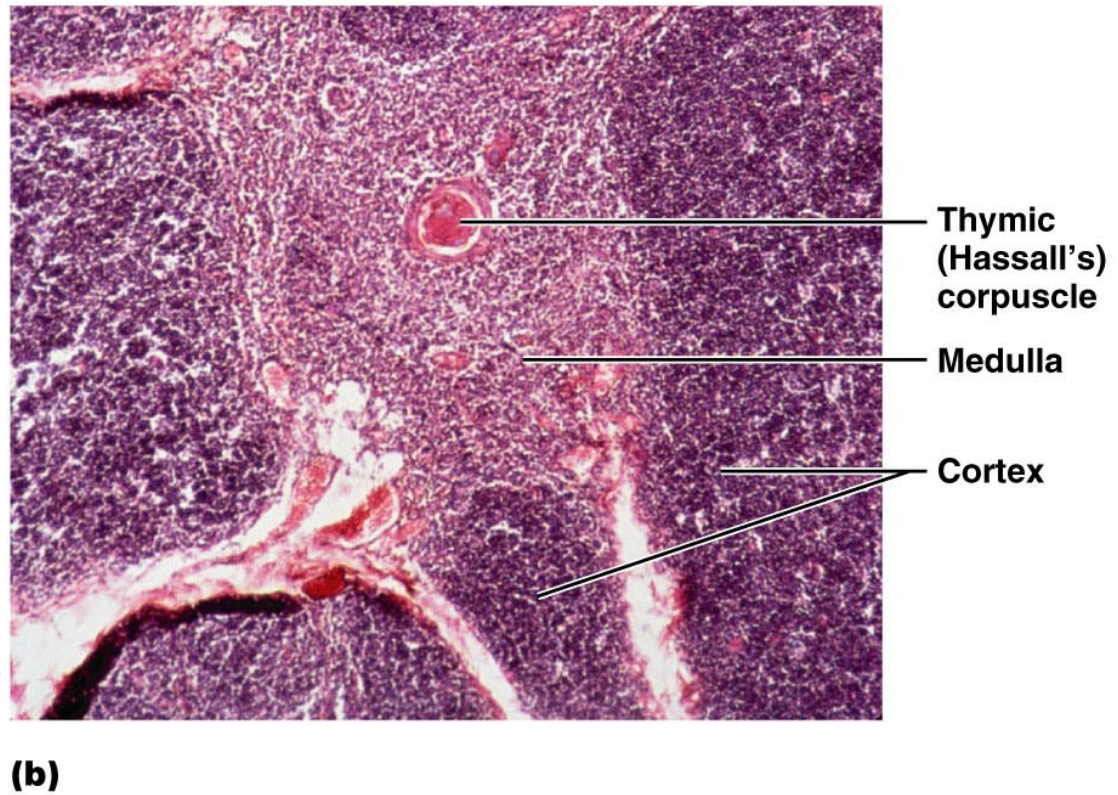
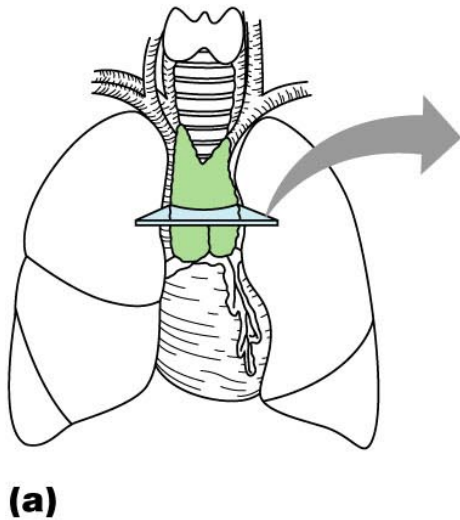
Except:

3- Cattle + Sheep → Peyer's patch (PP)

4- Rabbit → Appendix



Thymus



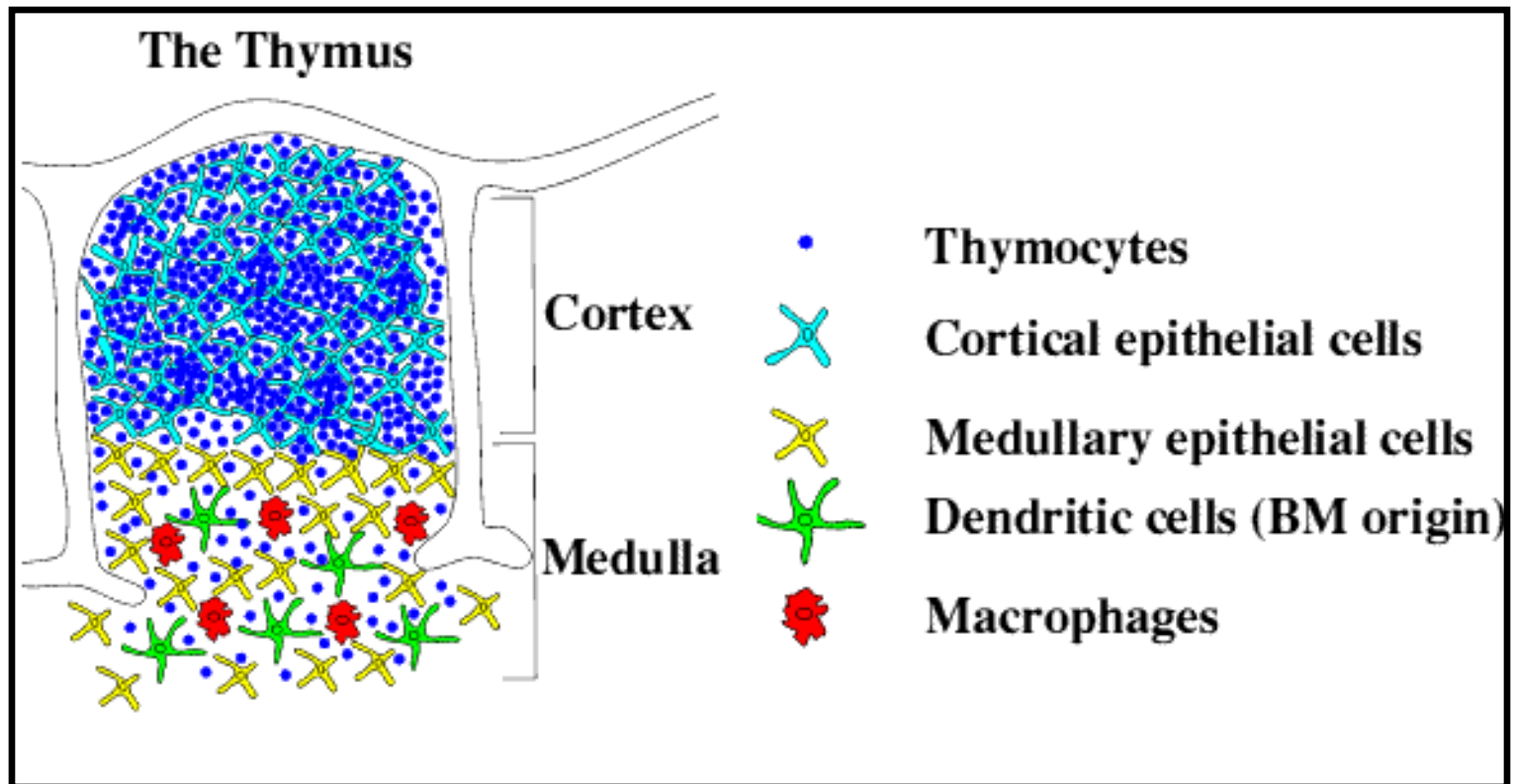
Features and Functions 1

- Most active in childhood, atrophies with age.
- **Composed of**
 - 1- cortex (immature T cells are many)
 - 2- medulla (mature T cells are few)
- Medulla contains Hassall's corpuscles (thymic corpuseles).
- T cell development and maturation

Features and Functions 2

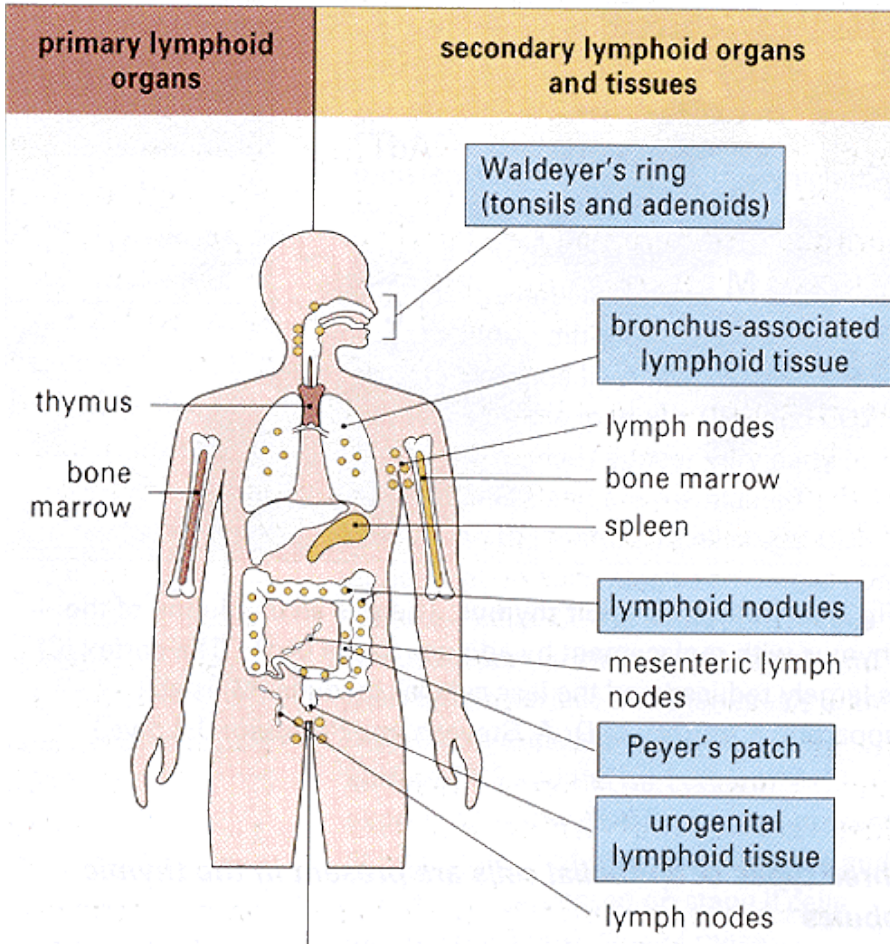
- Secretes thymic hormones to attract T cell and promote their differentiation.
- Rich in epithelial cells.
- Selects against self-reactive T cells.

Cells of the Thymus

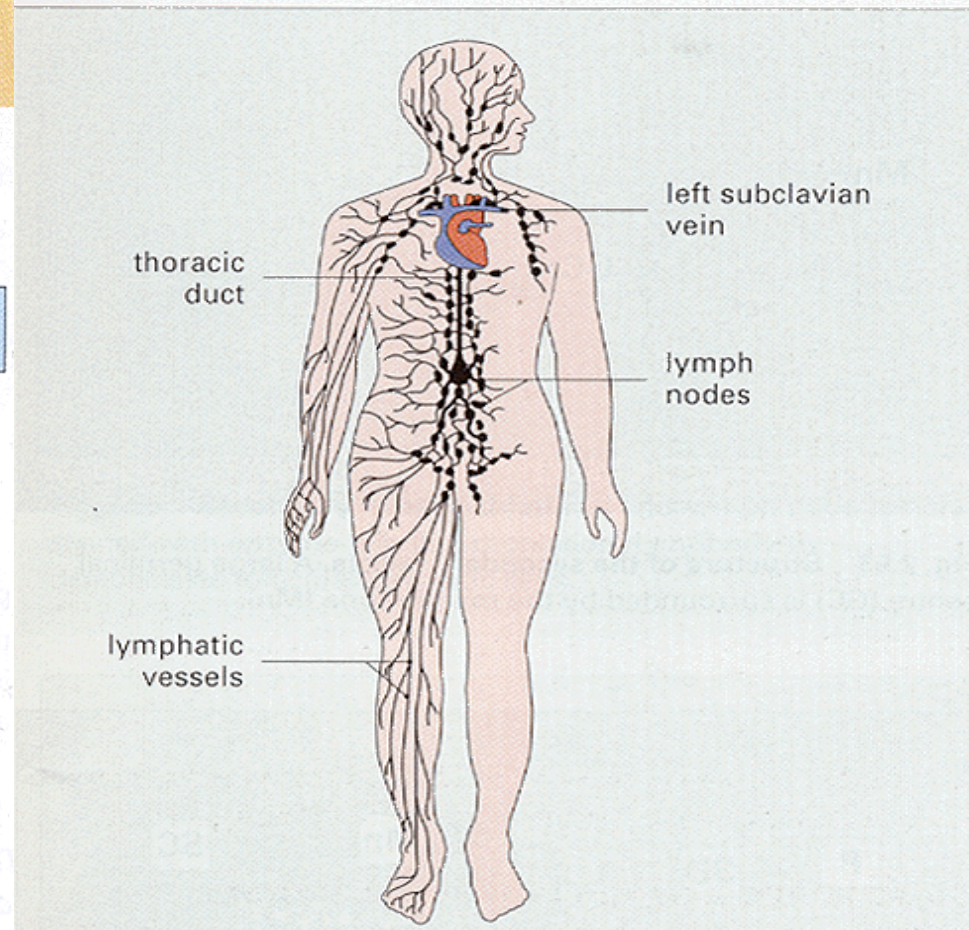


Tissues of the adaptive immune response.

Major lymphoid organs and tissues



The lymphatic system



Cells of the Adaptive Immune System

1. B cells **Bone marrow**
(Ab production)

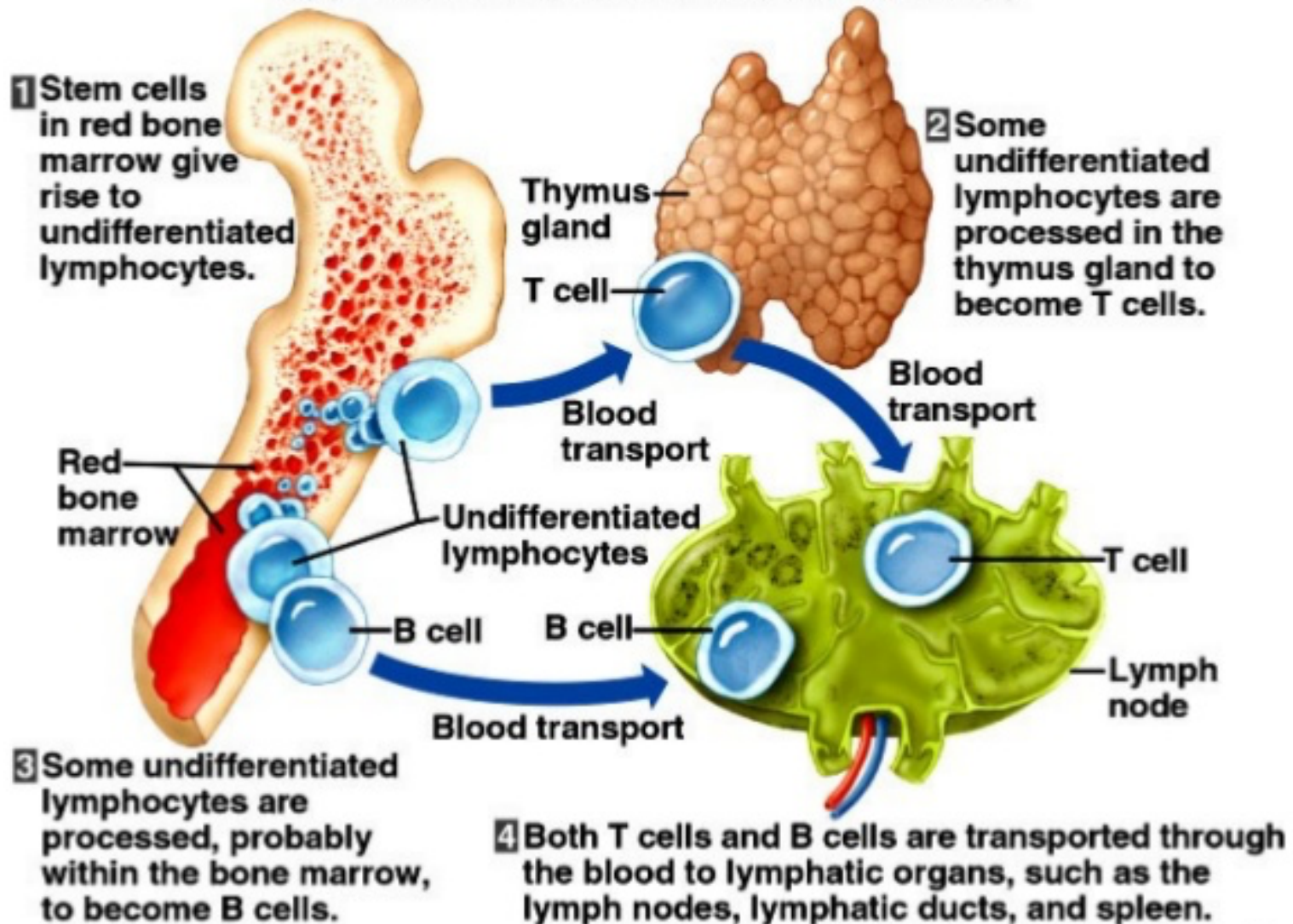
2. T cells **Thymus**

A. CD4+ **helper** cells (Th_1 and Th_2)
(stimulate responses)

B. CD8+ **Cytotoxic** cells
(Kill infected cells)

Summary: Primary LT

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Any Question?