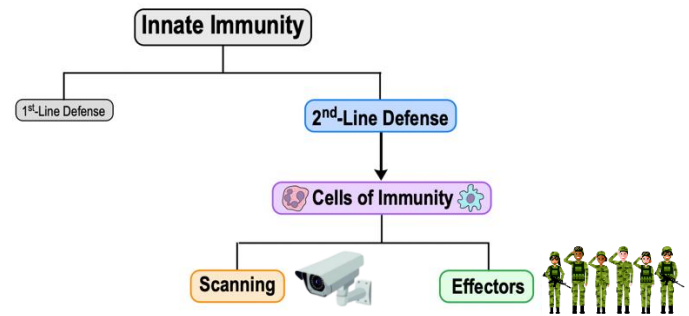
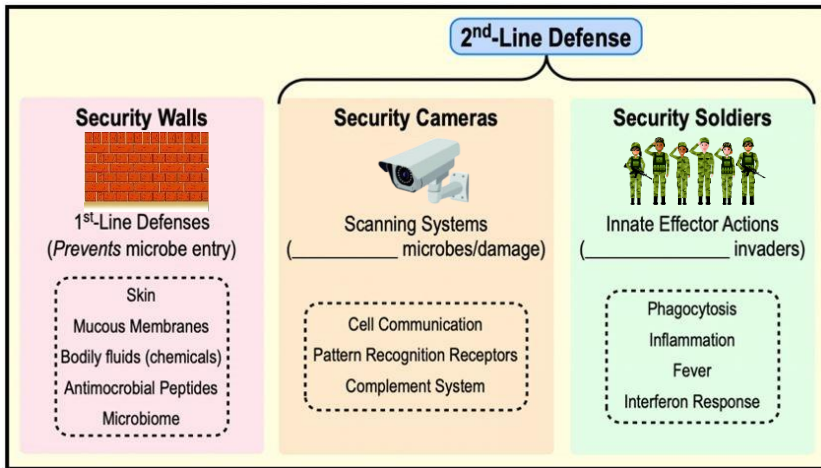


CONCEPT: INTRODUCTION TO CELLS OF THE IMMUNE SYSTEM

- Recall: The **2nd line of defense** of innate immunity involves blank main types of cells.

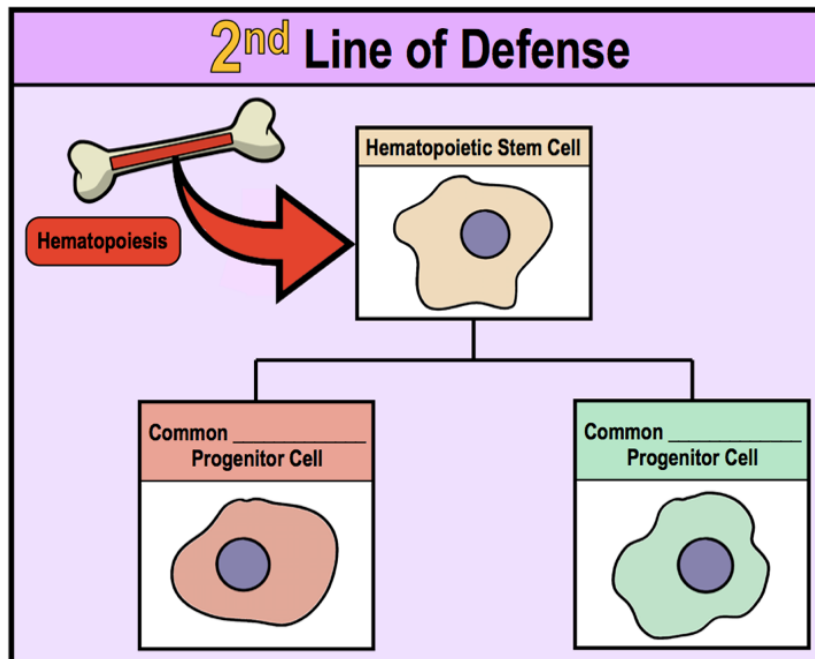
1) **Sentinel Cells:** look-out or guard cells part of the blank system that detect invading microbes.

2) **Innate Effectors:** security responses that blank microbes identified by scanning systems.



Hematopoiesis

- There are many different types of immune system cells developed from *stem cells*.
- **Hematopoiesis:** development of all *blood* cells from **hematopoietic** blank cells found in bone marrow.
 - Hematopoietic stem cells first differentiate into common **myeloid** or **lymphoid** blank cells.
 - Common **myeloid** & **lymphoid** progenitor cells then differentiate into all blank types of blood cells.



CONCEPT: INTRODUCTION TO CELLS OF THE IMMUNE SYSTEM

PRACTICE: In humans, stem cells from which all blood cell types are developed are found in the:

- a) Peripheral circulation.
- b) Bone marrow.
- c) Lymphatic vessels.
- d) Lymph nodes.

Map of the Lesson on Cells of the Immune System

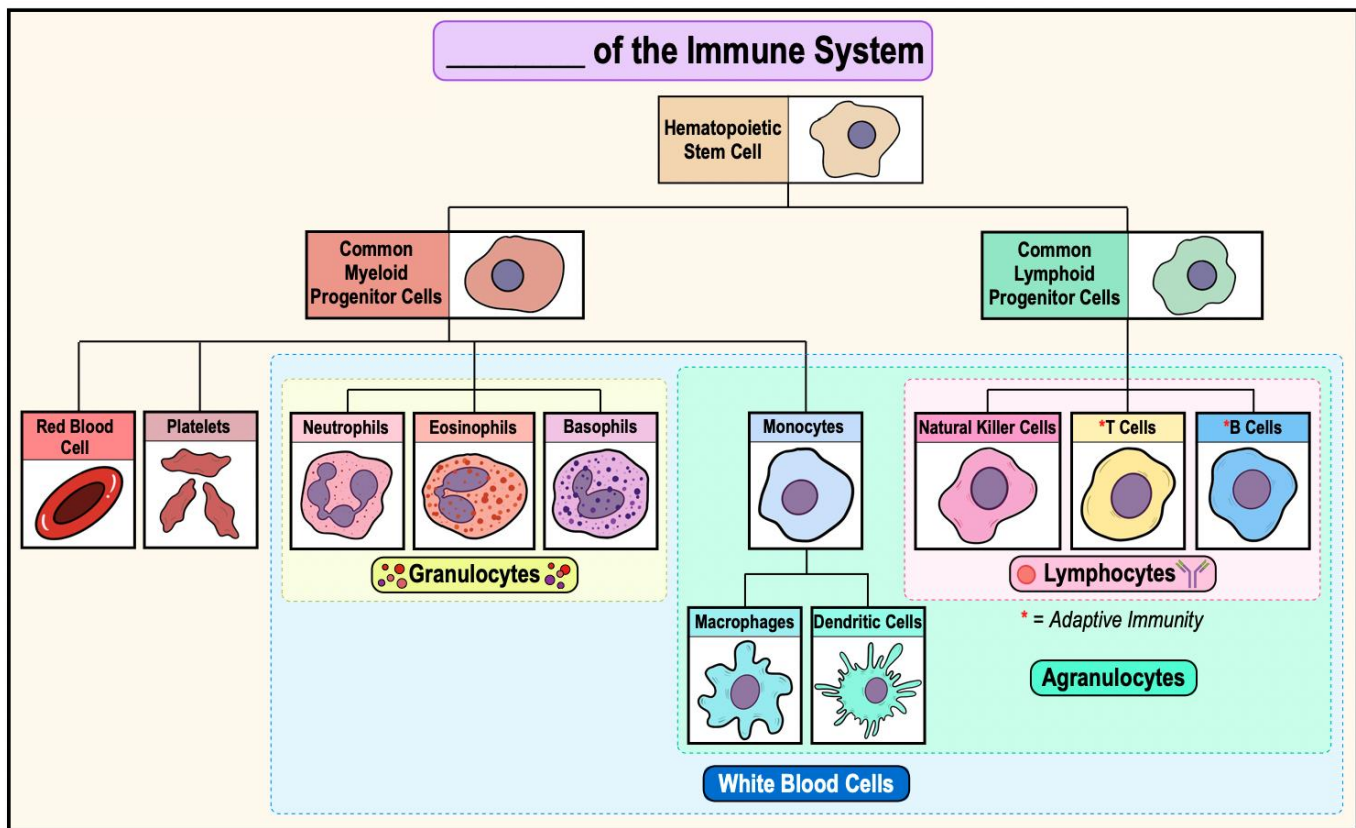
• There are blank major types of blood cells that differentiate from common myeloid OR lymphoid progenitor cells:

1) **Red Blood Cells (Erythrocytes):** carry oxygen gas (blank) throughout the blood.

2) **Platelets:** important for blood blank.

3) blank **Blood Cells (Leukocytes):** important for the host's immune system.

□ Can be divided into blank groups (*granulocytes & agranulocytes*).



PRACTICE: The hematopoietic stem cell has the ability to develop into which of the following cell types?

- 1. Macrophage.
 - 2. Red Blood Cell.
 - 3. Neutrophil.
 - 4. B Cell.
 - 5. Dendritic cell.
- a) 2 & 4.
 - b) 1, 2, & 5.
 - c) 1, 3, 4, & 5.
 - d) 1, 2, 3, 4, & 5.