



Department of Anesthesia Techniques



# Leukocyte & Thrombocyte

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المرحلة الأولى

# ➤ **Leukocytes (White Blood Cells)**

➤ WBCs are the mobile cells of the body's immune system.

➤ **It classified into two main groups:**

**1. Granulocytes** are cells with granules in their cytoplasm and a lobular nucleus.

**2. A granulocytes** lack granules and have nuclei that are not lobular.

➤ The **granulocytes** and **monocytes** are formed **only** in the **bone marrow**.

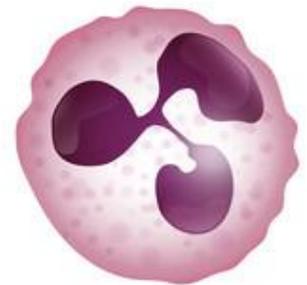
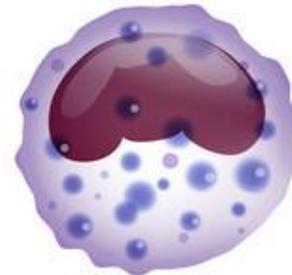
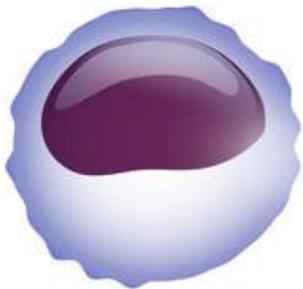
➤ **Lymphocytes** are produced mainly in the **lymph glands**, **spleen**, **thymus** and **tonsils**.

- \*The lifespan of WBC ranges from a few hours to months.
- \*Normal range of WBCs 4000 to 11000 cell/mm<sup>3</sup>.

# LEUKOCYTES

AGRANULAR

GRANULAR



Lymphocyte

Monocyte

Eosinophil

Basophil

Neutrophil

## \*Functions of WBCs:

### 1. Granulocyte functions:

**A. Neutrophils** : attack and destroy invading bacteria and viruses.

**B. Basophils**: contain a number of chemicals that are important in inducing allergic inflammatory responses like coughing, sneezing or a runny nose.

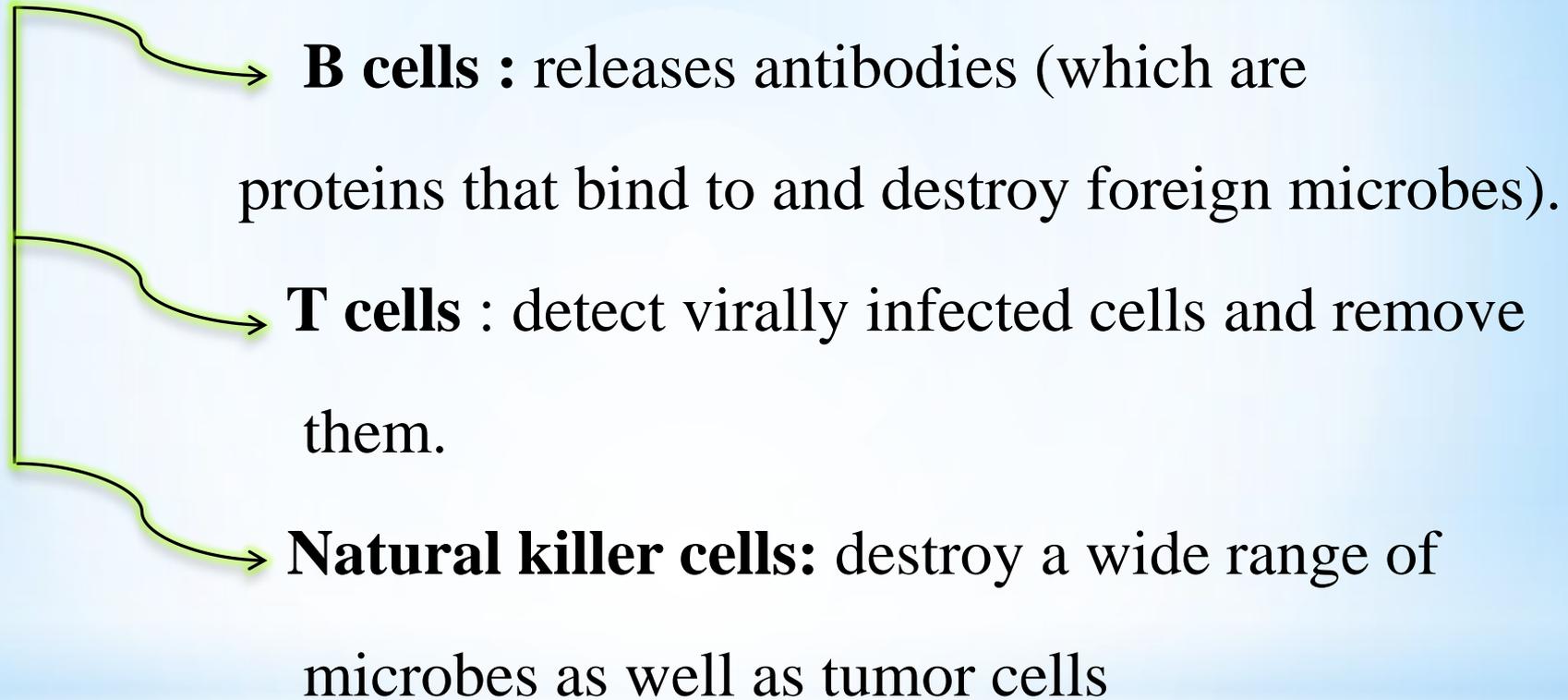
### **C. Eosinophil:**

1. Attack and destroy parasites, cancer cells.

2. Assists basophils with regulation of allergic reaction.

## 2. A Granulocyte Functions:

- **Lymphocytes: which are divided into 3 types:-**



- **Monocytes:-** When a monocyte enters a tissue, it transforms into a tissue macrophage, which has the ability to phagocytize microbes.

# Platelets

- \* The platelets (thrombocytes) are small, granulated bodies that aggregate at sites of vascular injury. They lack nuclei and are 2-4  $\mu$ m in diameter .
- Normal range of platelets 150000-400000 cell/mm<sup>3</sup>
- Platelets are generated in the bone marrow and have a life span about (8-12 day) then destroyed by macrophages in the spleen.

## \* **Function of Platelets**

- \* The main function of platelets is to initiate clotting by converting prothrombin into thrombin.

