

Mastery Series: Types of Leukocytes

1. Where do WBCs develop?
2. What is pus?
3. Why is cloudy CSF cause for concern?
4. 3 granulocytes are:
5. 2 major kinds of agranulocytes are:
6. 3 kinds of lymphocytes are:
7. 2 kinds of antigen-presenting cells are:
8. Which type of leukocyte:
 - a. Secretes bleach
 - b. Damages helminths and fungus, in particular
 - c. Releases histamine in the blood and in mucous membranes to cause inflammation
 - d. Are adept at destroying autoimmune or cancerous cells
 - e. Are the “generals” of adaptive immunity
 - f. Make antibodies
 - g. Might be considered the “link” between innate (general) and adaptive (specialized) immunity?
 - h. Make memory cells that patrol for years to prevent future invasions by a pathogen
9. What are “band” cells?
10. What is phagocytosis?
11. Which two types of leukocytes are particularly good at phagocytosis?

Mastery Series ANSWERS: Types of Leukocytes

1. Where do WBCs develop?
Red bone marrow; T cells further mature in lymphatic tissue, such as lymph nodes
2. What is pus?
Combination of WBCs, pathogens, and damaged cells/fluids. Some of the pathogens are probably still alive, so pus can transmit disease.
3. Why is cloudy CSF cause for concern?
Indicates WBCs and an infection somewhere in the central nervous system
4. 3 granulocytes are:
Neutrophils: neutral-loving phagocytosing all-purpose fighters that secrete bleach and peroxide
Basophils: basic-dye-loving purple-staining, histamine-releasing; similar to mast cells
Eosinophils: acid-dye-loving, red-staining, worm and protist-killing
5. 2 major kinds of agranulocytes are:
Macrophages: phagocytic, important in innate immunity (first line of defense); and instrumental in adaptive immunity (taking out a “recognized” pathogen)
Lymphocytes: Perform adaptive immunity in which they recognize and specifically block current and future attempts by a particular pathogen. They can “learn” and “remember”
6. 3 kinds of lymphocytes are:
T cells—helper T cells start adaptive immunity by stimulating other kinds of WBCs; cytotoxic T cells actively take out targeted cells; suppressor T cells stop the immune response once the threat has been neutralized.
B cells—make antibodies
NK cells—destroy virally infected cells; cancerous cells; and autoimmune WBCs
7. 2 kinds of antigen-presenting cells are: **dendritic cells and macrophages**
8. Which type of leukocyte:
 - a. Secretes bleach: **neutrophil**
 - b. Damages helminths and fungus, in particular: **eosinophils**
 - c. Releases histamine in the blood and in mucous membranes to cause inflammation—**basophils and mast cells**
 - d. Are adept at destroying autoimmune or cancerous cells—**NK cells and Cytotoxic T cells**
 - e. Are the “generals” of adaptive immunity—**helper T cells**
 - f. Make antibodies—**B cells**
 - g. Might be considered the “link” between innate (general) and adaptive (specialized) immunity? – **macrophages and dendritic cells (APCs)**
 - h. Make memory cells that patrol for years to prevent future invasions by a pathogen—**T cells and B cells**
9. **immature neutrophils; too many in bloodstream may indicate infection**
10. What is phagocytosis?—**engulfing of other cells or parts of cells**
11. **Macrophages and neutrophils**