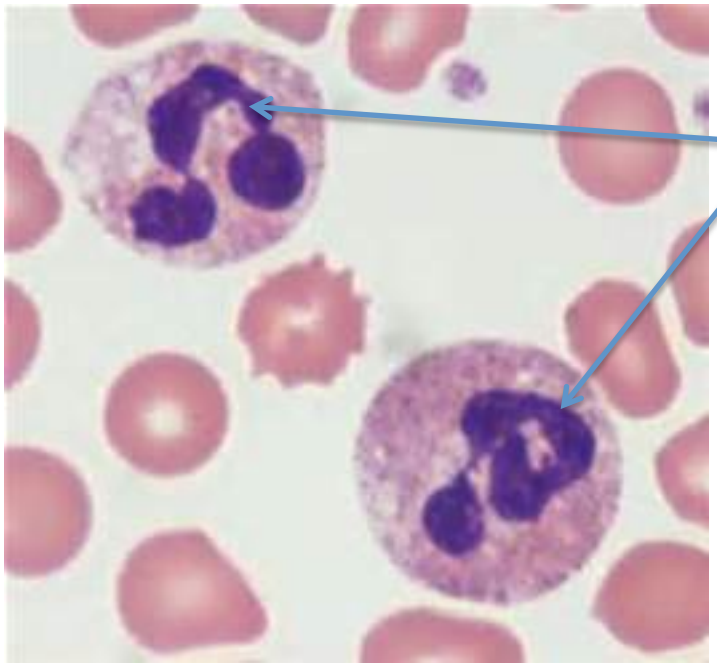
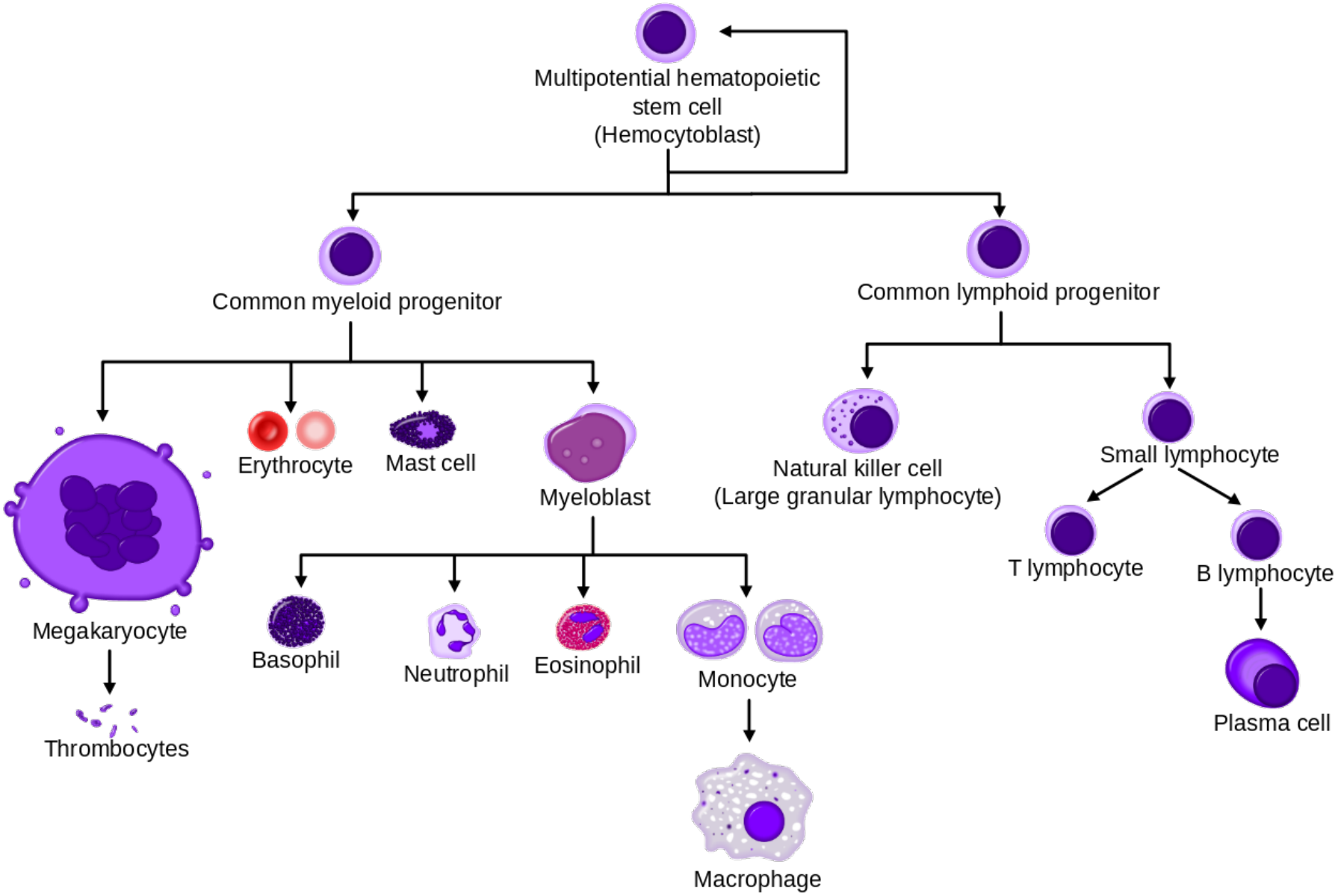
Neutrophils (a.k.a. leukocyte, granulocyte, white blood cell, WBC)



blood cells on a microscope slide showing the lobed nucleus of two neutrophils

a 3-d drawing of a neutrophil

This chart shows how blood cells are produced in the bone marrow from “stem cells” and how we organize them into groups.



By Mikael Häggström

The Multifaceted Functions of Neutrophils

Tanya N. Mayadas,1 Xavier Cullere,1 and Clifford A. Lowell2

"Neutrophils and neutrophil-like cells are the major pathogen-fighting immune cells in organisms ranging from slime molds to mammals. Central to their function is their ability to be recruited to sites of infection, to recognize and phagocytose (eating foreign objects like bacteria) microbes, and then to kill pathogens through a combination of cytotoxic mechanisms."

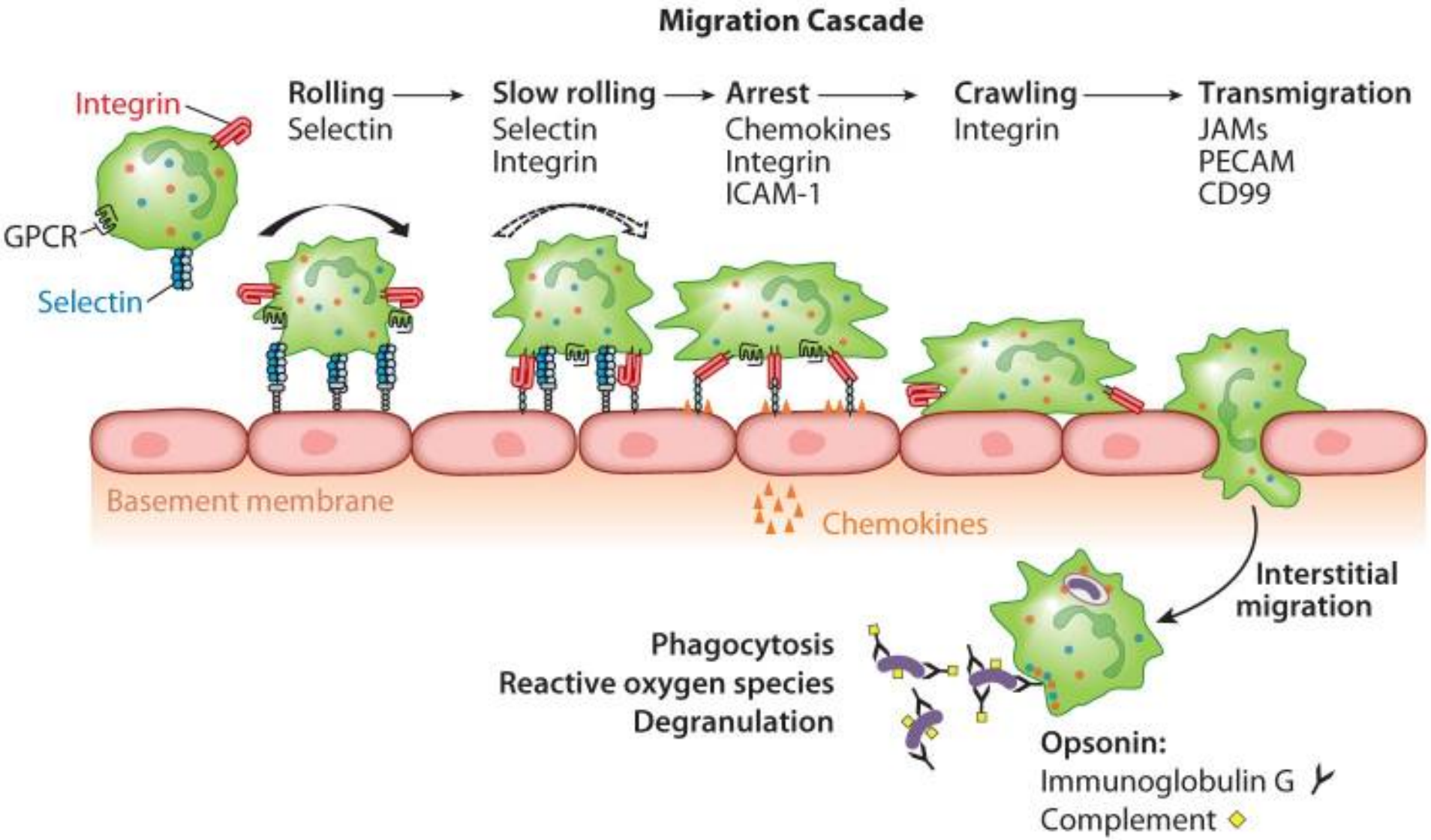
Form

- average diameter of 12-15 micrometers (µm) in peripheral blood smears
- in suspension, neutrophils have an average diameter of 8.85 µm
- multi-lobed shape nucleus
- survive for only 8–12 h in the circulation and up to 1–2 days in tissues
- Neutrophils will show increasing segmentation (many segments of nucleus) as they mature. A normal neutrophil should have 3-5 segments.
- Neutrophils account for approximately 50-70% of all white blood cells (leukocytes)

Function

- first line of host defense against a wide range of infectious pathogens including bacteria, fungi, and protozoa
- Neutrophils are generated at a rate of 10^{11} per day, which can increase to 10^{12} per day during bacterial infection.
- Researchers once believed that neutrophils were present only during the most active phase of an infection, functioning as pathogen killers. We now know that neutrophils can regulate the immune system by activating and working with other immune cells.

This info came from Wikipedia



Taken from: The Multifaceted Functions of Neutrophils
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