

Lymphatic System and Non-specific Immunity

Text: Human Biology, by Mader. pp. 136-153

1. Lymphatic System (pp. 139 - 142)
 - A. Functions
 - i. Drainage
 - a. Lymph
 - ii. Immunity
 - B. Lymphatic Vessels (p. 140)
 - C. Lymphatic Organs (pp. 140 - 141)
 - i. Lymph Nodes
 - ii. Tonsils
 - iii. Spleen
2. Introduction (p. 142)
 - A. Nonspecific (Natural) Resistance
 - B. Specific (Acquired) Resistance

3. “First Line of Defense”

A. Mechanical Barriers (p. 142 - 144)

- i. Intact Skin
- ii. Mucous Membranes
 - a. Mucous
 - b. Cilia

B. Chemical Barriers (p. 142)

- i. Unsaturated Fatty Acids
- ii. Lysozyme
- iii. Stomach Acids
- iv. Normal Flora (resident bacteria)

4. Inflammatory Response and wound healing (pp. 142 - 144)

A. Stabilization of Wound

- i. An initial break damages dermal blood vessels and inserts microorganisms
- ii. Reflexive vasoconstriction reduces blood flow
- iii. Platelets come in contact with collagen fibers and induce clotting
- iv. Clot forms are further reduces blood lose and isolates bacterial

B. Inflammatory response

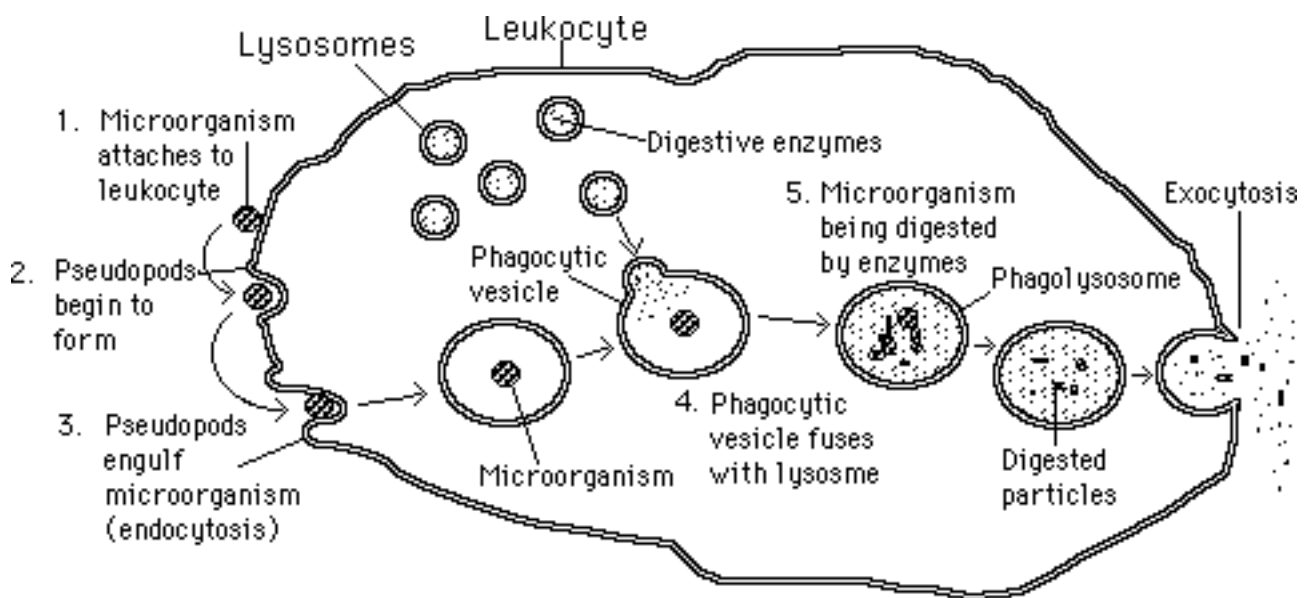
- i. Mast cells secrete histamine

- ii. Histamine induces vasodilation of undamaged blood vessels
- iii. Vasodilated vessels become porous allowing nutrients, oxygen and other resources to enter damaged area.
- iv. Pyrogen secreted elevates local temperature.
- v. Margination, Diapedesis, positive chemotaxis, and phagocytosis by neutrophils followed by macrophages.

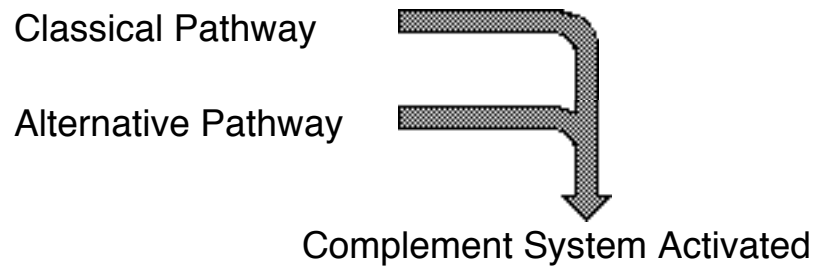
C. Injury Resolution

- i. Stratum basalis begins to grow. Blood vessels begin to repair
- ii. Fibroblasts migrate into damaged area and secrete collagen
- iii. Epidermis mends
- iv. Scab forms
- v. Clot material removed

5. Nonspecific Phagocytosis



6. Complement System Activation (see handout)



- a. Pathways
- b. Results of Activation
 - Inflammation
 - Opsonization
 - Cytolysis

7. Interferon (see handout)