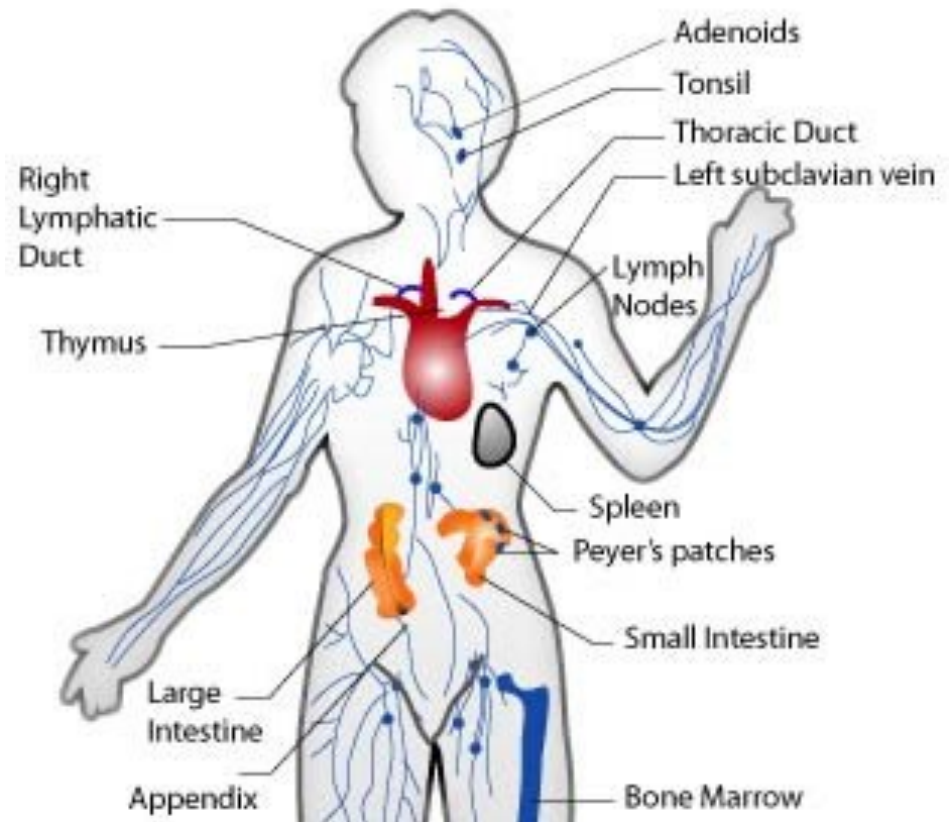


UNIT#5 MINI LESSON#1
IMMUNE SYSTEM OVERVIEW

What is the function of the Immune System?

Fight against invading organisms that cause infectious diseases.



What causes disease?

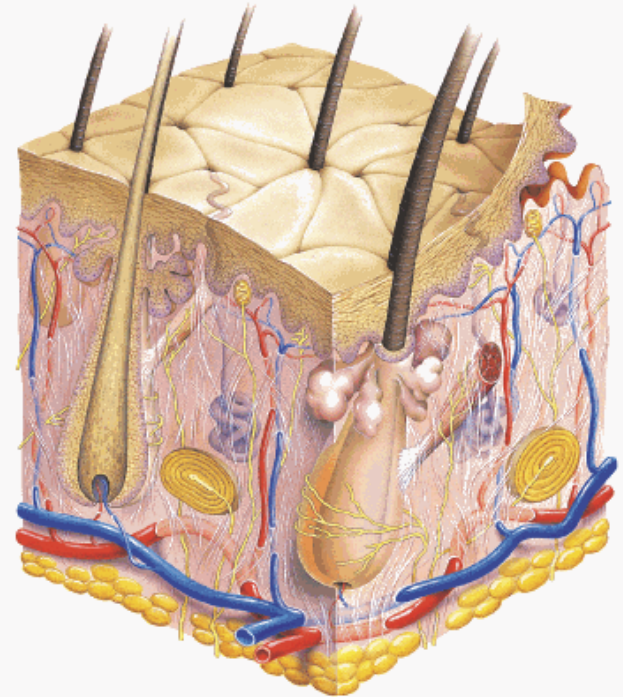
An organism that causes an infection or disease is called a **pathogen**

Types of pathogens include VIRUS, BACTERIA, and FUNGUS



Different types of defenses

1. Nonspecific defenses-- Physical and chemical barriers to fight off ALL pathogens.
EX: Skin and Mucus



2. Specific Defense - fights only one type of pathogen

EX: Antibodies

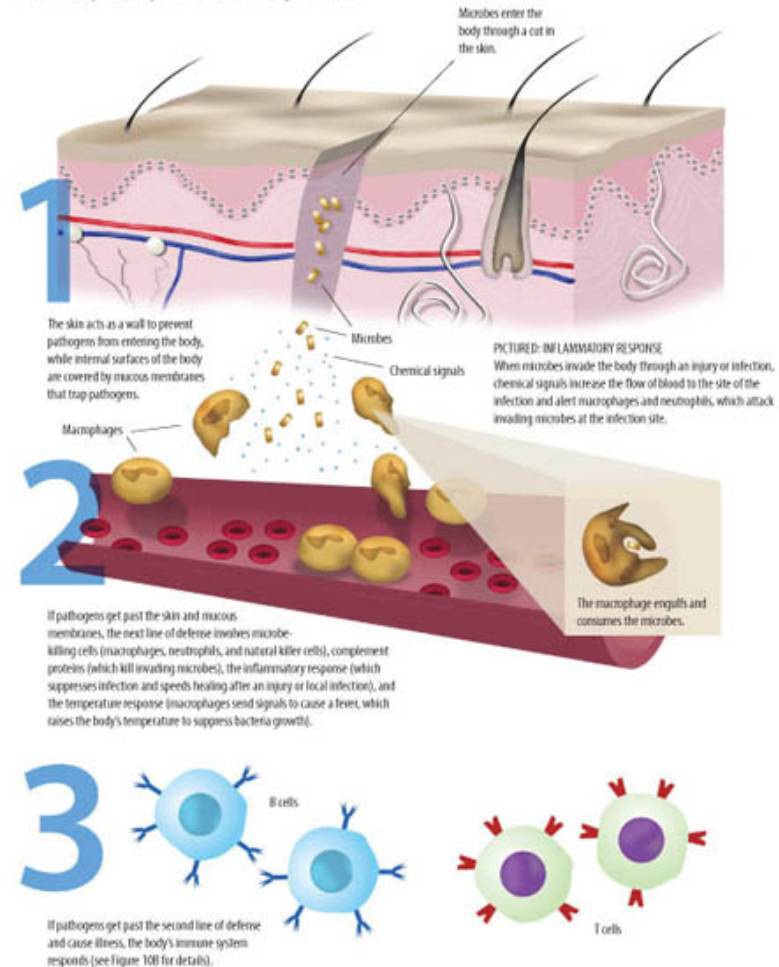


Three Lines of defense



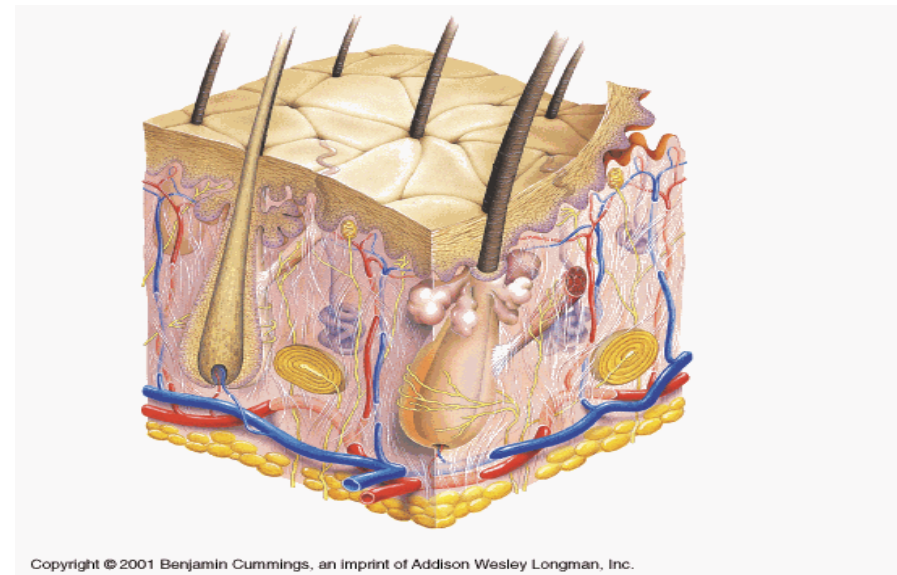
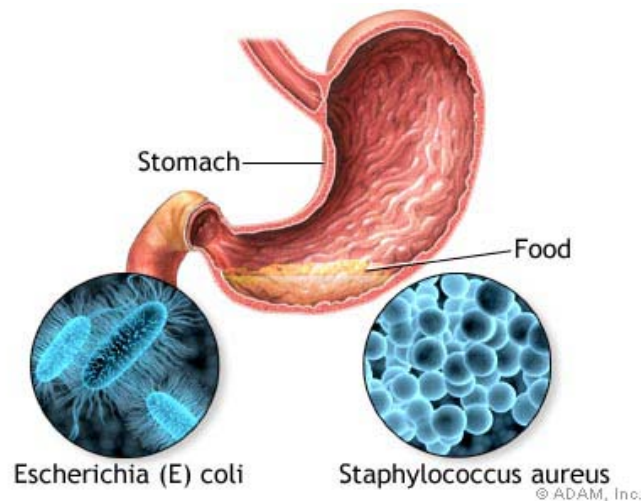
FIGURE 10A: THE THREE LINES OF DEFENSE

The human body has three layers of defense mechanisms against infection



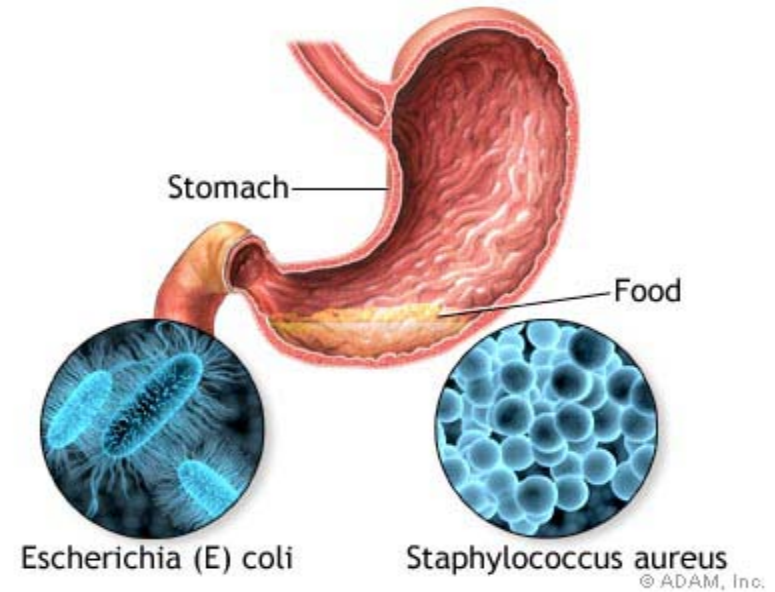
1. The First Line of Defense

- NON-Specific
- Physical Barriers- Skin
- Chemical Barriers-EX: Saliva, Stomach acid



How do pathogens enter the body?

- Where can pathogens get through the first line of defense?



- * They are on the food we eat
- * They are in the air we breathe
- * Through an open wound (A cut in the skin)

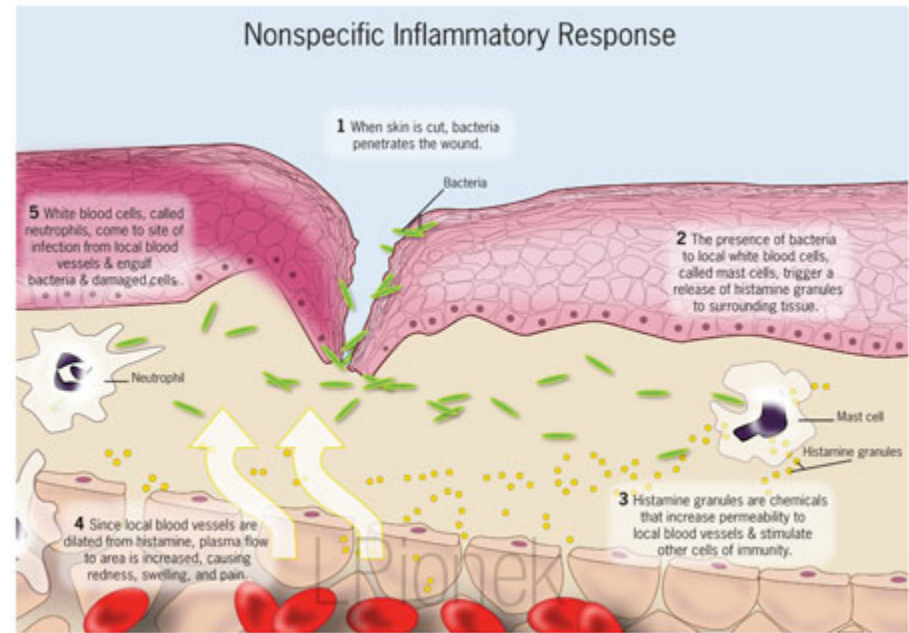
2. The Second Line of Defense

Non-Specific

and

Inflammatory response-

reaction of the body that causes fever, swelling, and redness.

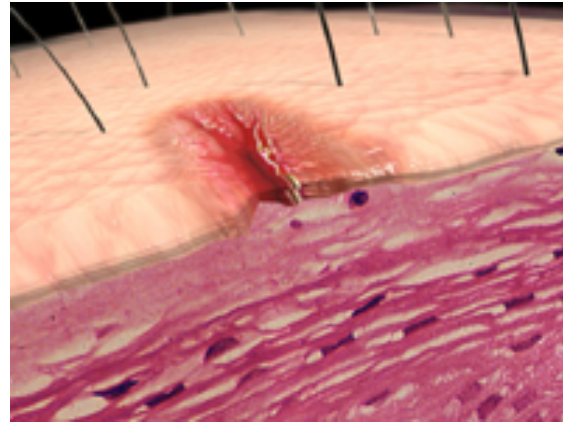


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What is the Inflammatory Response?

Here is the Steps!!

1. Pathogen enters the body tissue and causes damage.



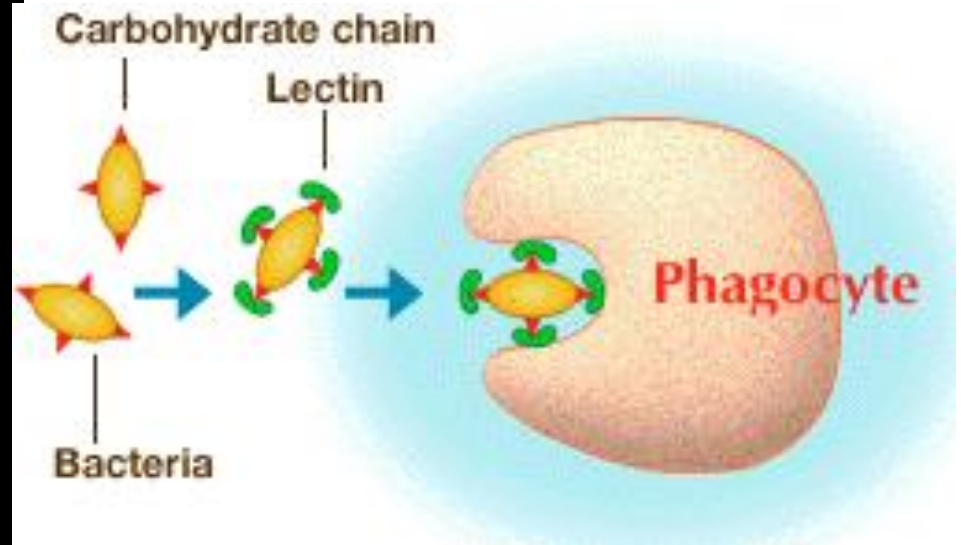
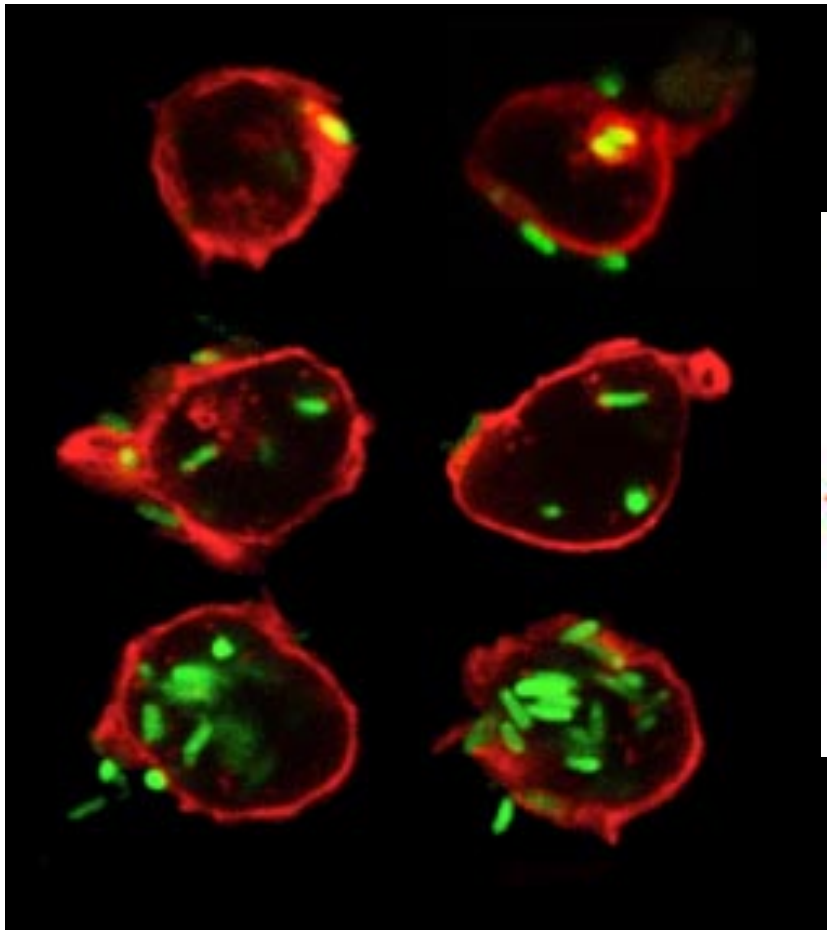
2. Macrophages (WBC) move into the tissues.

(Squeeze out of the capillaries at the site of the cut)

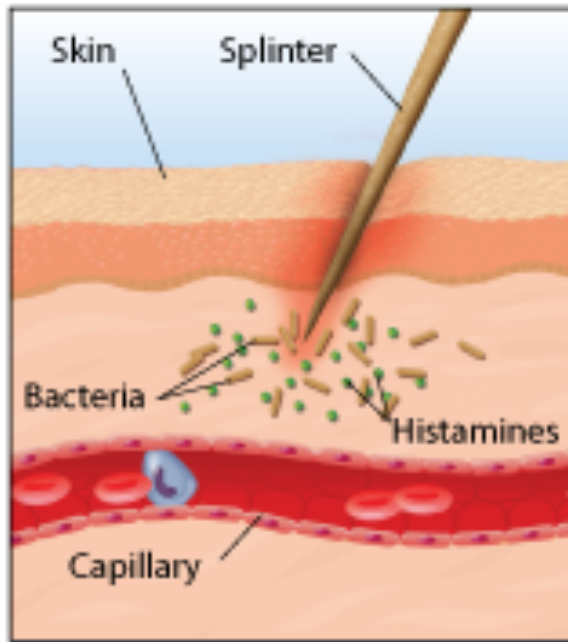
3. Phagocytes engulf and destroy all pathogens and damaged cells



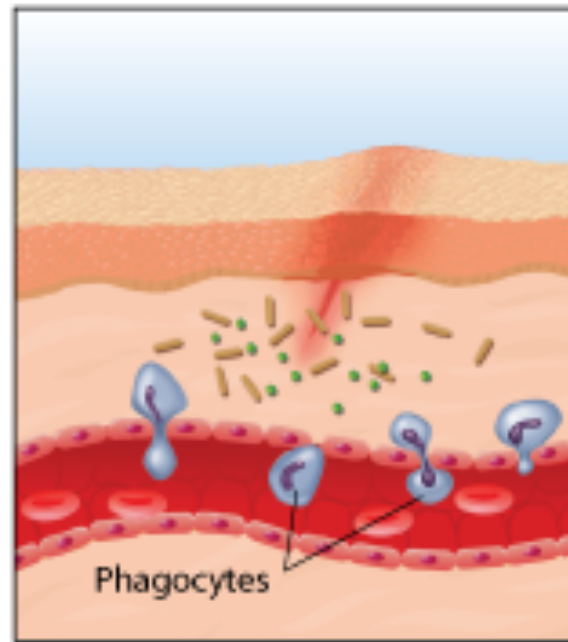
4. Once the area has been cleaned the phagocytes die



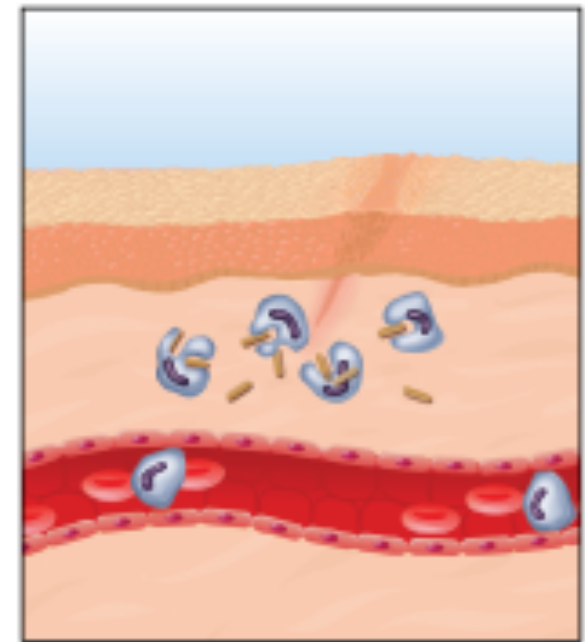
Inflammatory Response



1 In response to the wound and invading pathogens, mast cells release histamines, which stimulate increased blood flow to the area.



2 Local blood vessels dilate. Fluid leaves the capillaries and causes swelling. Phagocytes move into the tissue.



3 Phagocytes engulf and destroy the bacteria and damaged cells.