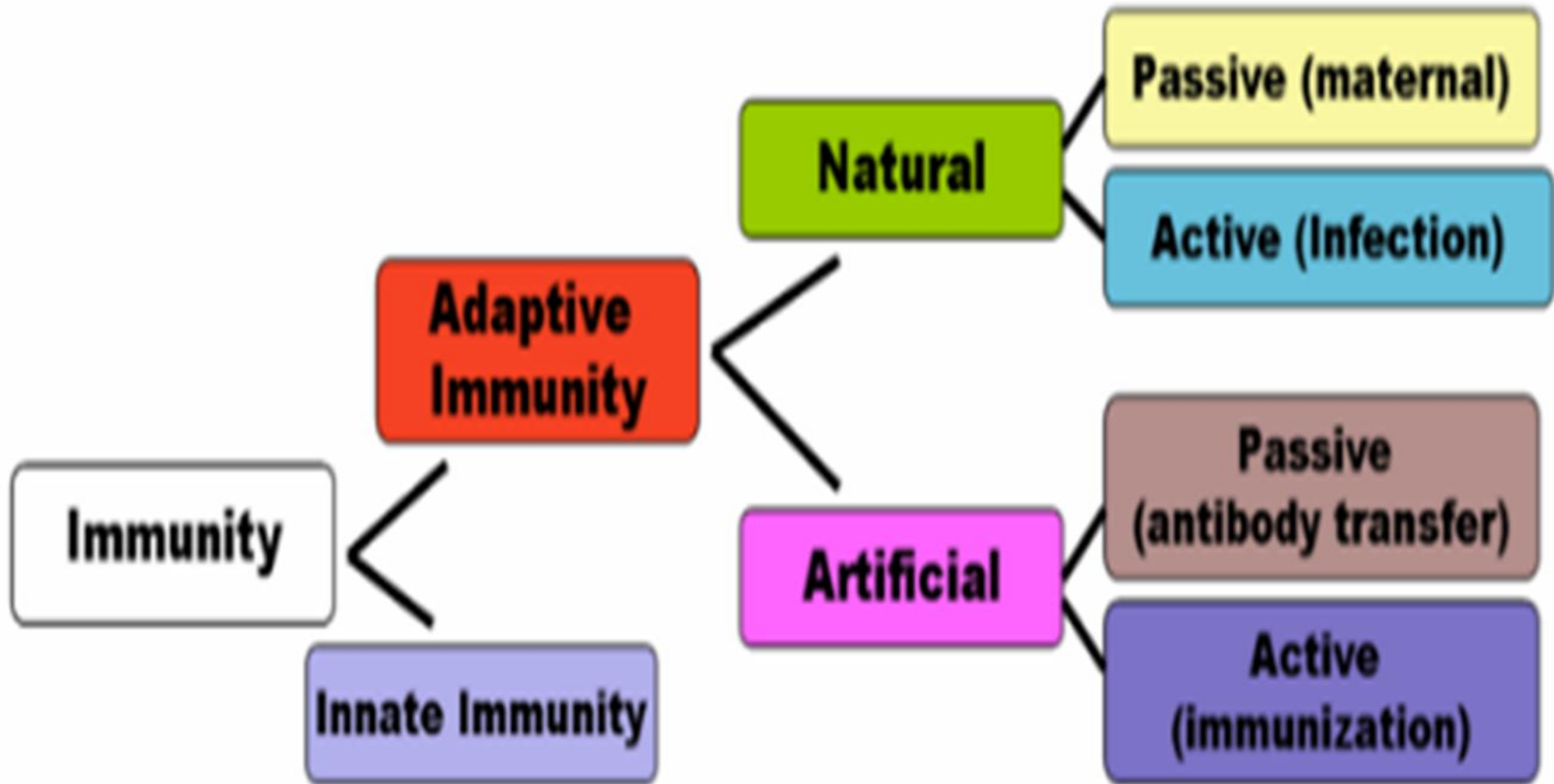


Immunity

Immunity the ability to combat diseases and cancer includes lines of defense



Nonspecific Defenses (innate immunity)

(1) The first line of defense

1- Physical barrier:

Skin and mucous membranes

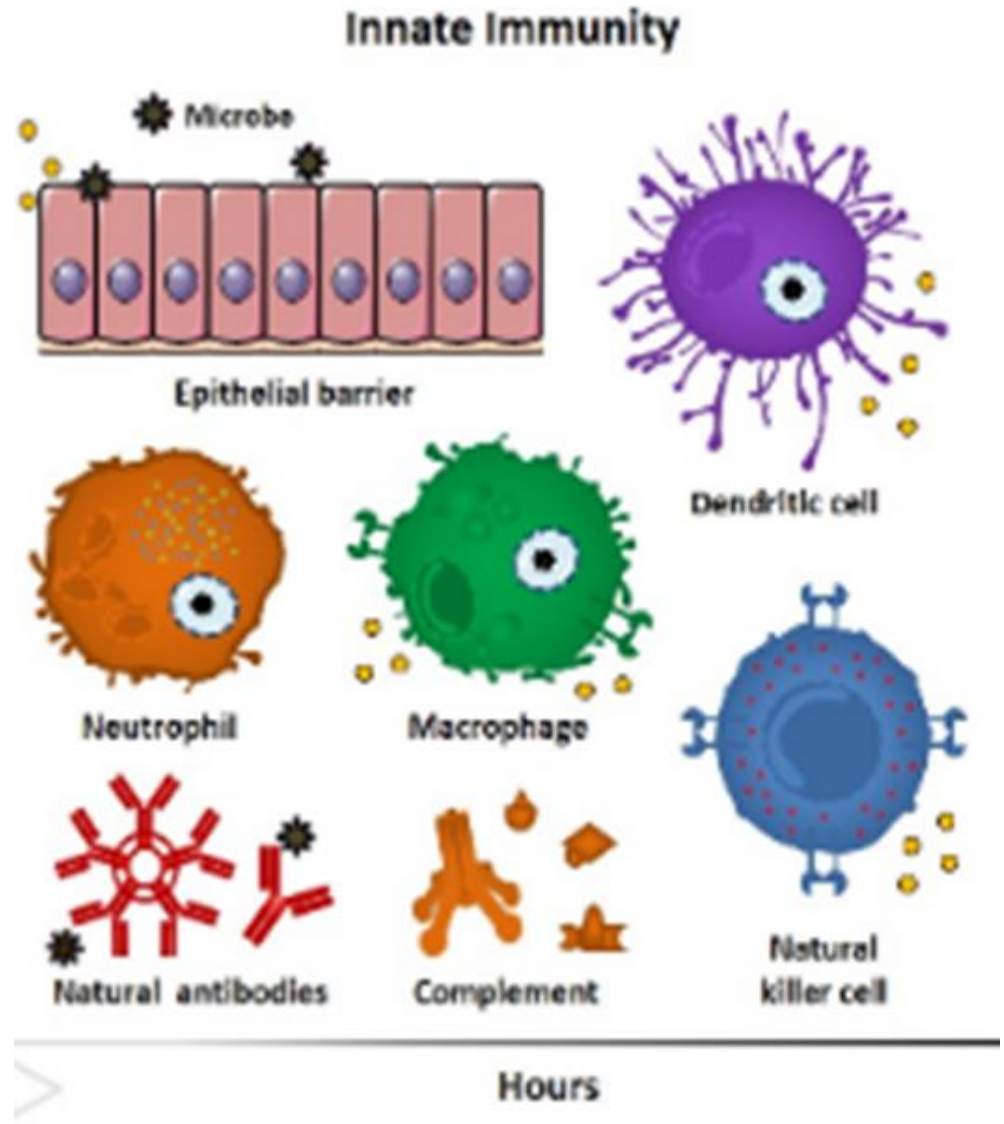
2- Chemical barriers:

secretions of sebaceous (oil) glands

Perspiration, saliva, and tears

The acid PH of the stomach

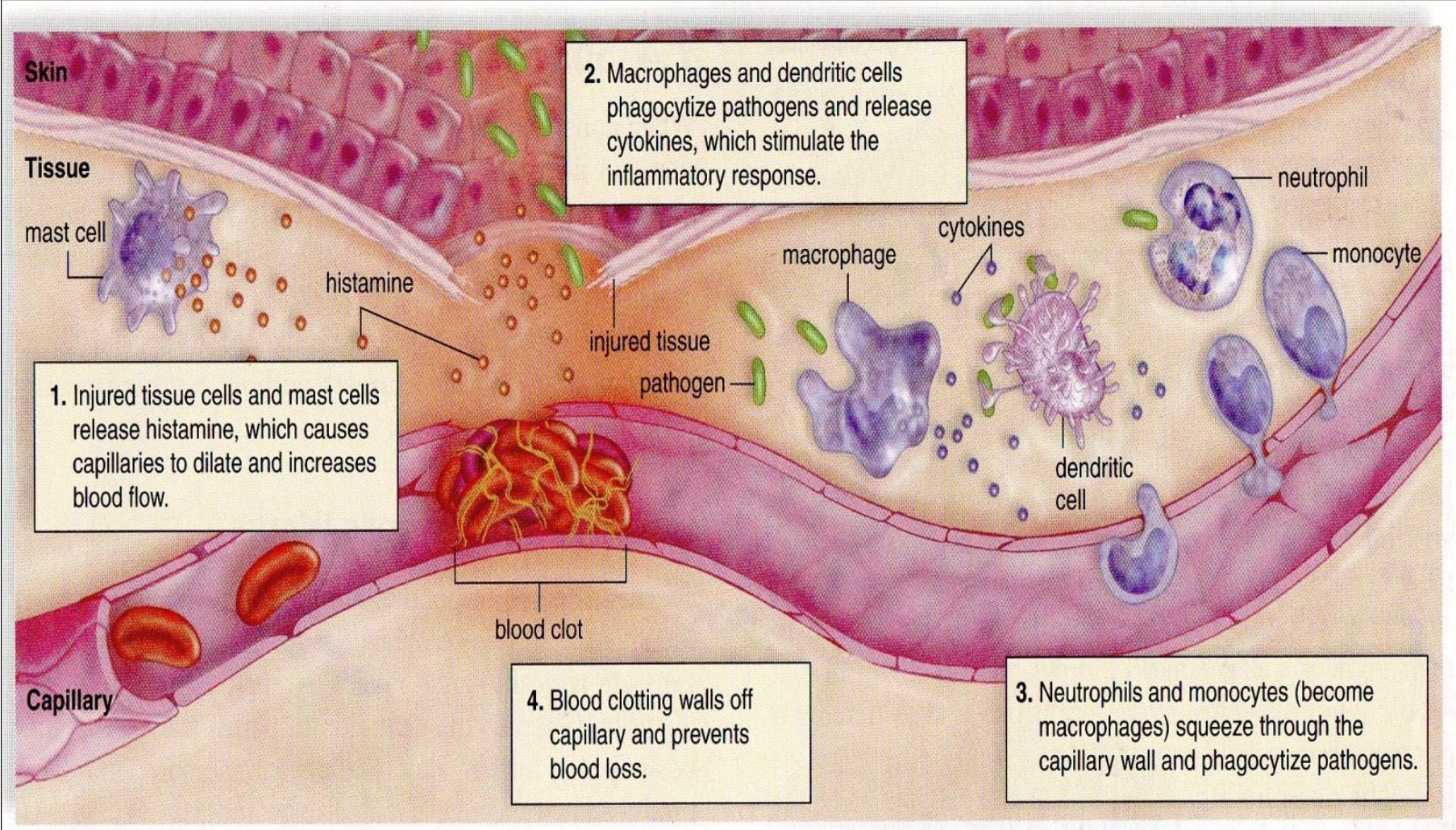
Resident bacteria



(2) The second line of defense :

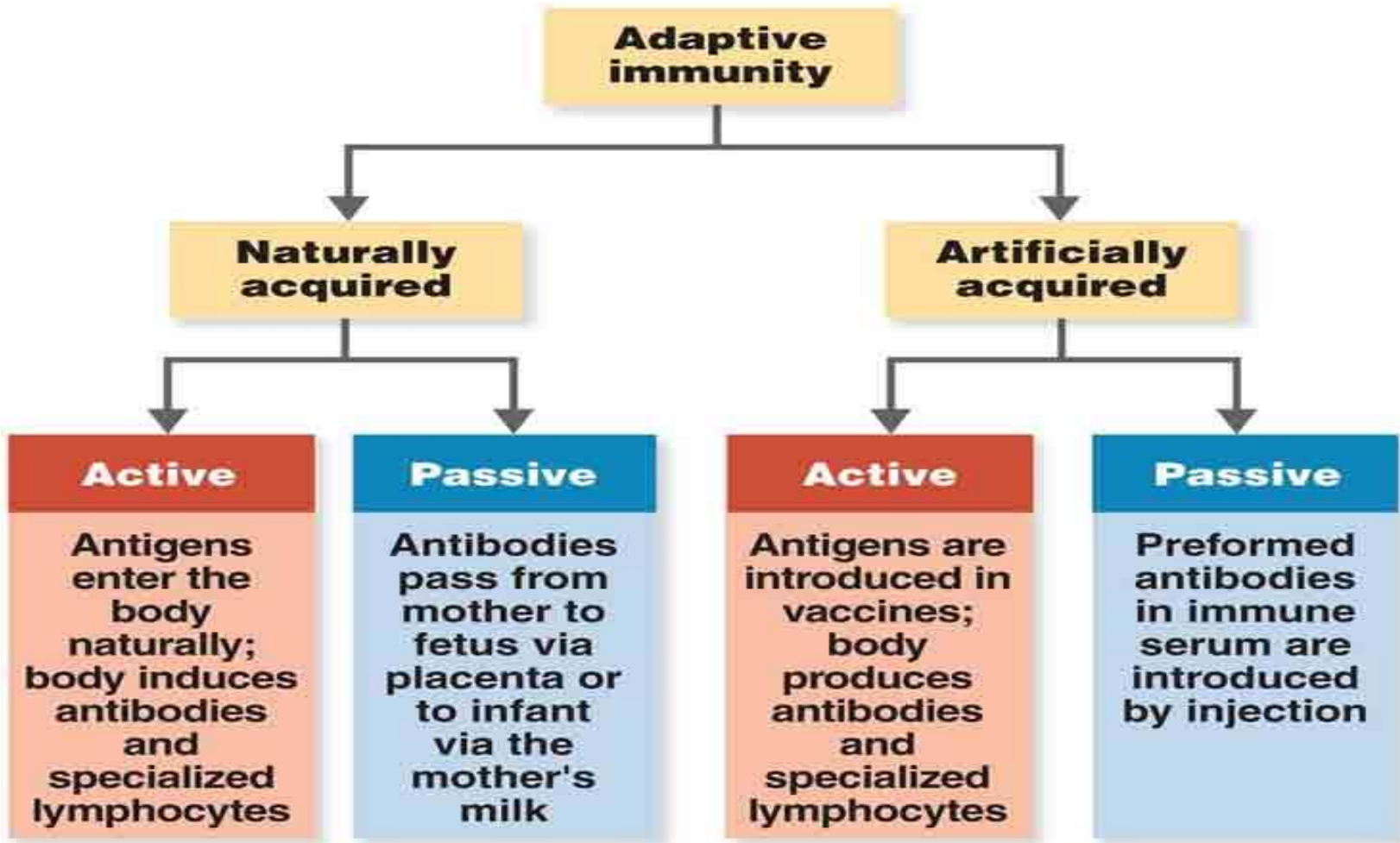
Inflammatory Reaction (Response)

Whenever the skin is broken due to a minor injury, a series of events occurs that is known as the inflammatory reaction (inflammation)

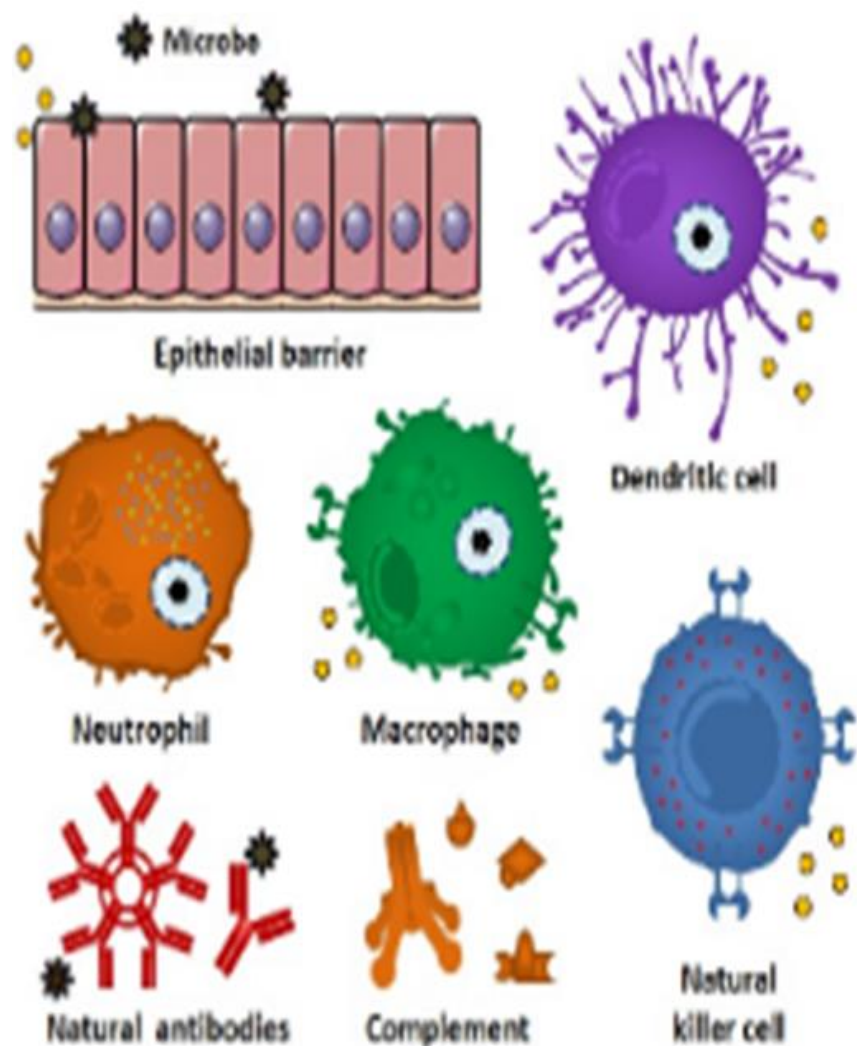


Acquired immunity-

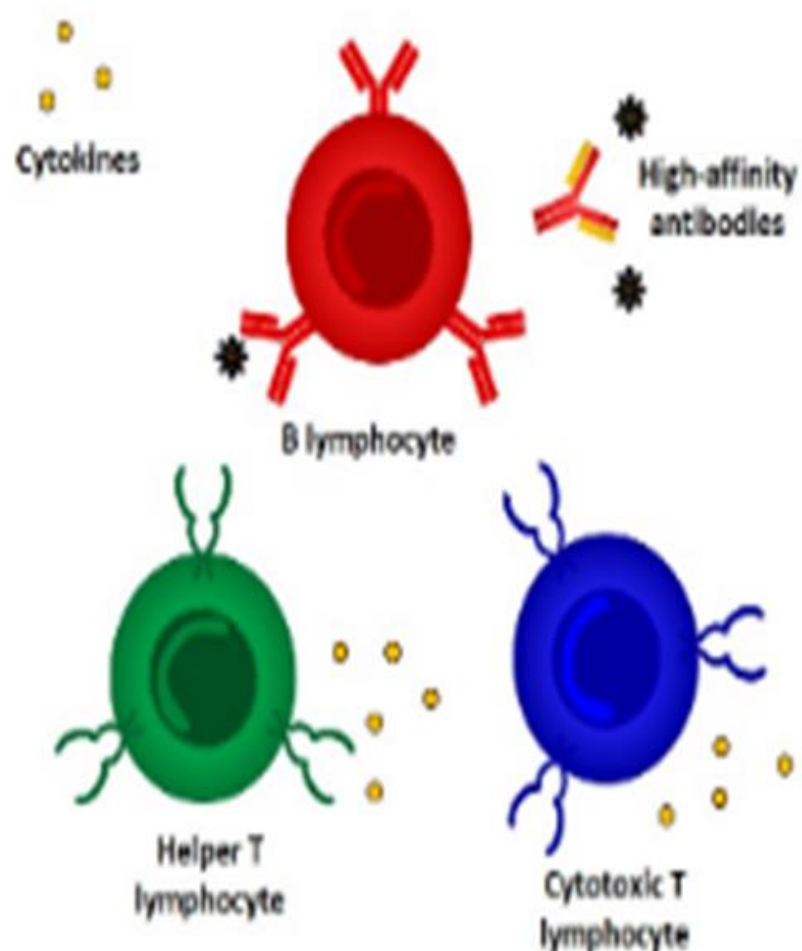
Acquired or adaptive immunity is the body's third line of defense. This is protection against specific types of pathogens.



Innate Immunity

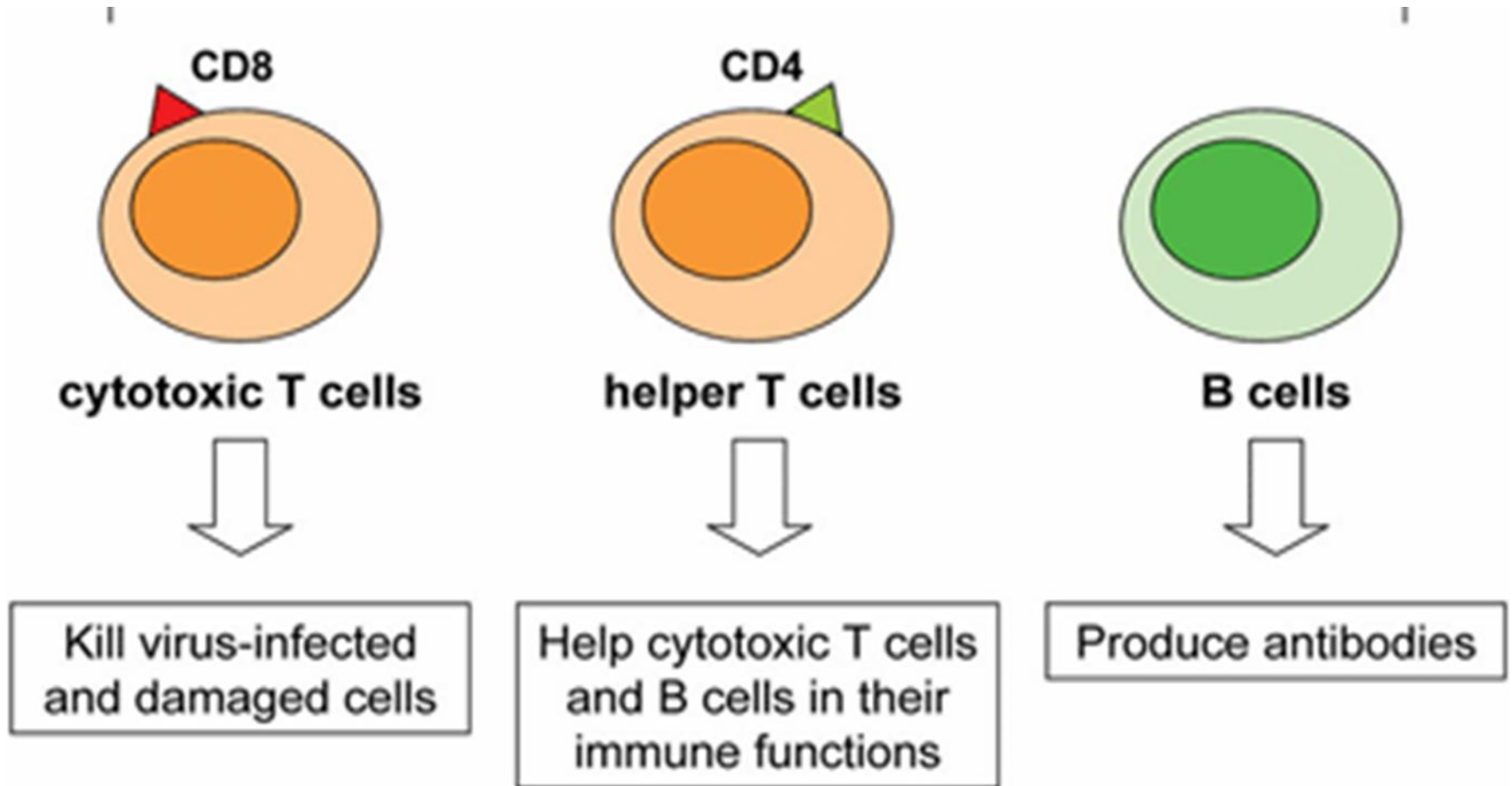


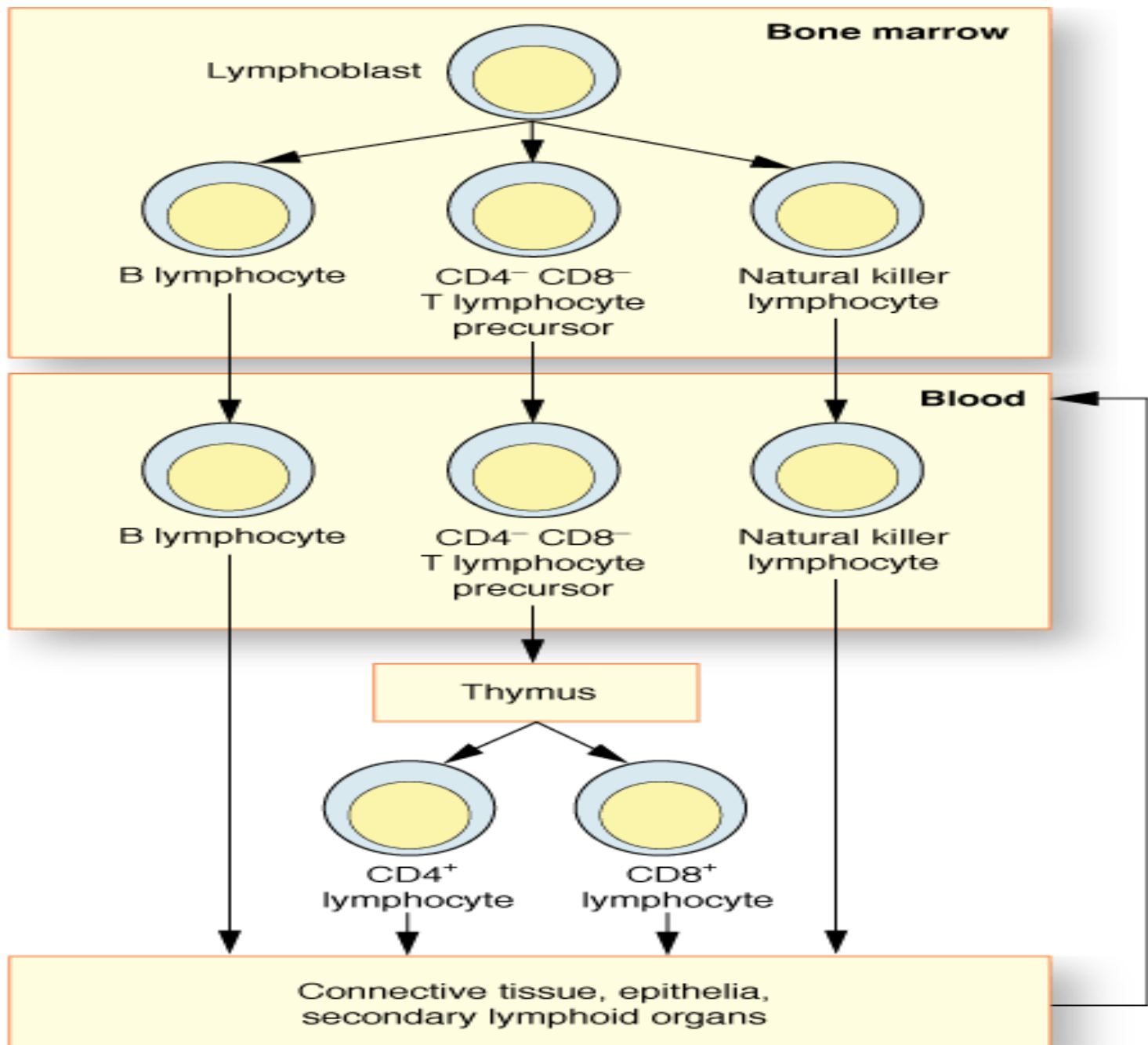
Adaptive Immunity



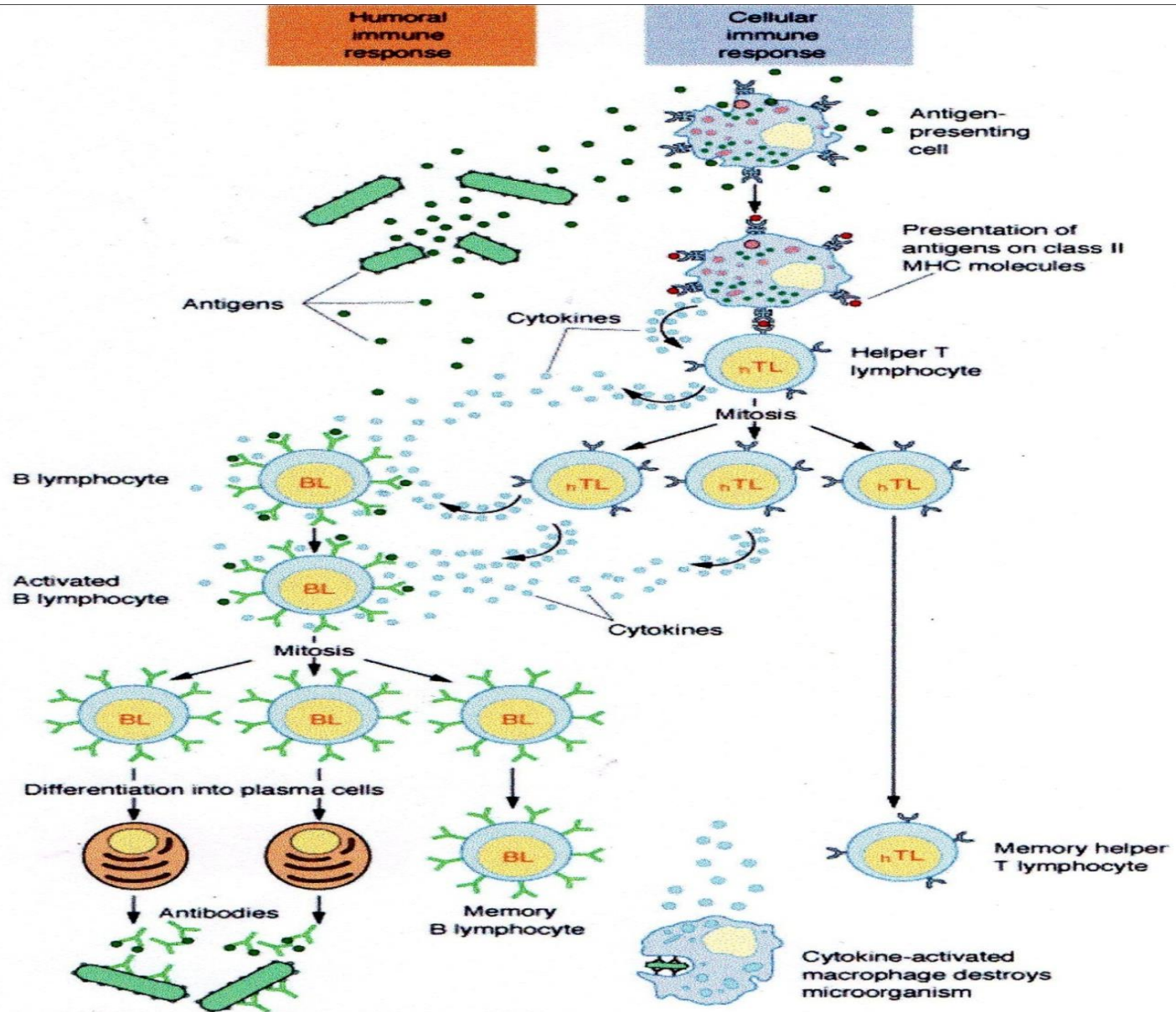
Immunity to disease

Our defense against disease is dependent upon the white blood cells called lymphocytes, which differentiate as either **B cells** (B lymphocytes) or **T cells** (T lymphocytes).



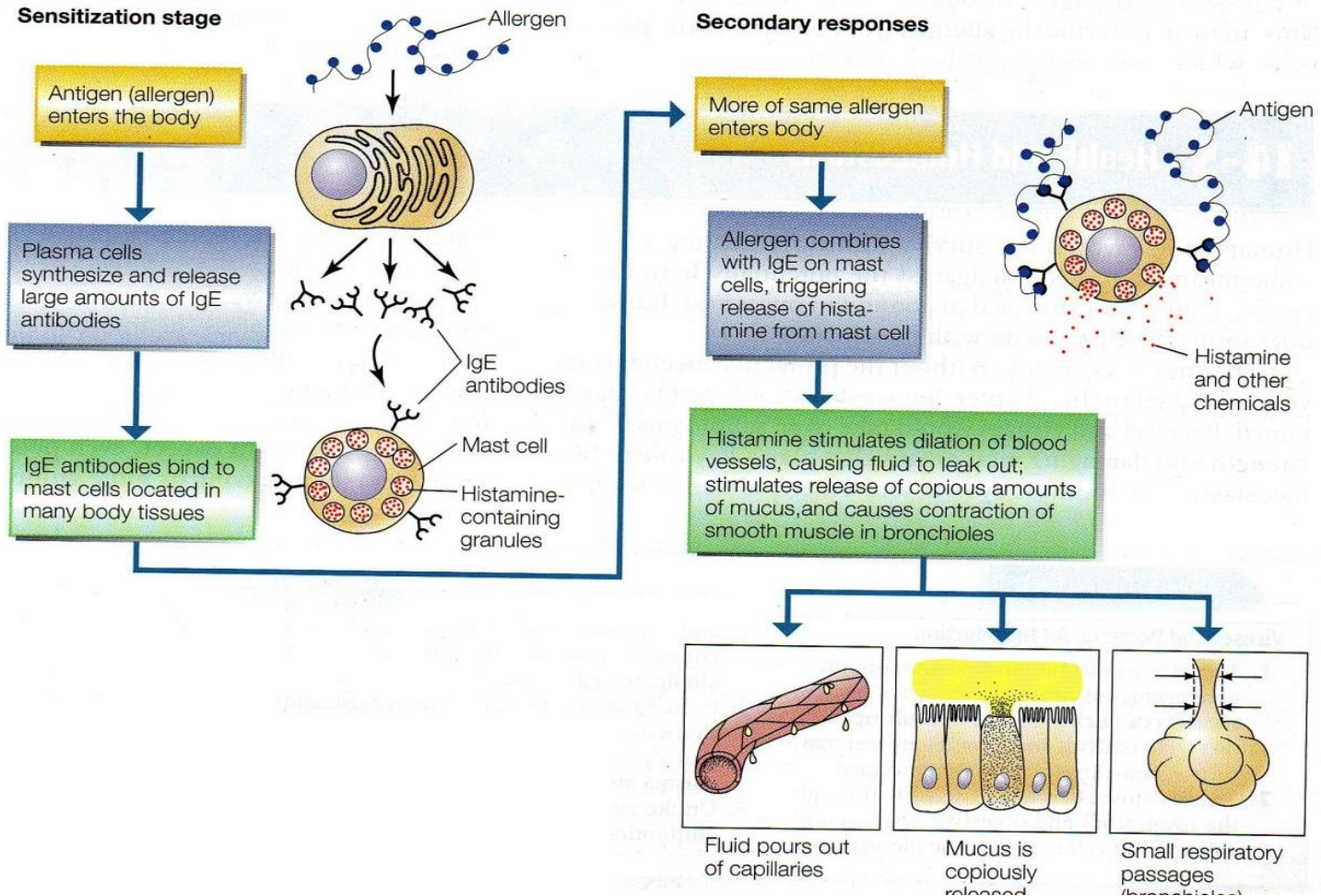


There are two types of **immunity response** both related to types of lymphocytes



Allergy

Allergy is an overreaction to some environmental substance. Antigens that stimulate an allergic reaction are called allergens



Active Immunity

- The **production of antibodies** against a specific disease by the immune system.
- Naturally acquired through **disease**
- Artificially acquired through **vaccination**
 - Vaccines include inactivated toxins, killed microbes, parts of microbes, and viable but weakened microbes.
- **Memory cells** are only produced in active immunity.
- Protection for active immunity is **permanent** whereas in passive immunity it is only temporary.
- **Antigens are only encountered** in active immunity.
- Active immunity takes **several weeks** to become active but passive is immediate