

## Natural resistance/defense

Resistance to disease, or more generally the ability of hosts not to become ill.

- Provides defense against infection by a number of inherent, mechanical, and chemical barriers

□ The body has developed defense mechanisms to control and to cope with the constant attack of microorganisms

□ The body has three lines of defense

• **1st line of defense -**

– intact skin

– mucous membranes & their secretions

• **2nd line of defense -**

– phagocytic white blood cells

*nonspecific*

– inflammation

– complement

– fever

– interferon

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• **3rd line of defense-**

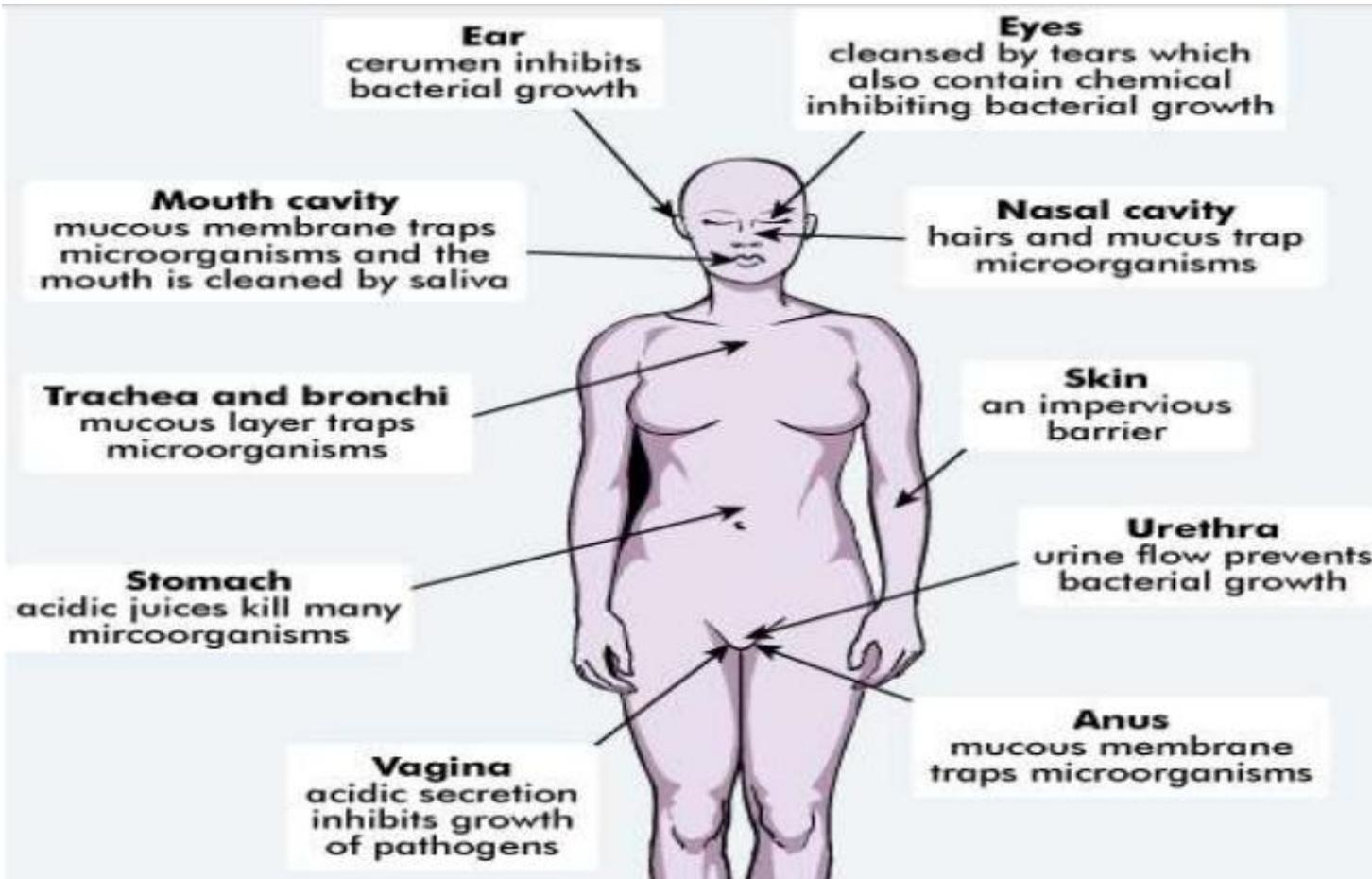
– B & T lymphocytes

*specific*

– antibodies

# The First Line of Defense

- These are a combination of physical and chemical barriers that prevent all types of foreign agents from penetrating the outer layer of the body. No specific foreign agent is targeted at this level.



## Physical Barriers

Skin --- impenetrable

Mucous membrane ---- protect internal lining

Hair in the nose --- coarse filter

Normal flora --- reduce area and nutrition

## Chemical Barriers

Sweat -----wash away and acidify

Mucus -----traps

Gastric acid----- Kill or inhibit

Saliva-----lysozyme, kill by rupturing cell wall

Tear---- kill

Acidity of urine and vaginal secretion-- slow

Cerumen --- trapping dust and dirt

## Mechanical Barriers

Cilia---- traps & propels

Urethra ----- Urination flushes