

Immunity

- Recognize → invader
- Cell & cell products → mobilize
- Remove → effectively.

1st Line of Defense:

→ Avoid entry of invader.

@isamiqamar

Physical

→ Skin, nail, hair.

Skin:

→ Largest organ in body

Epidermis

- Dead cells
- Multilayered
- Shed
- Patrolling cells
- Dendritic cells

Dermis

- Thick
- Living cells
- Hair follicles
- Glands
- Secrete sweat

Chemical

- Tears → Eyes
- Mucous → Nose
- Saliva → mouth
- HCl → stomach
- sweat, Sebaceous gland
- Thick mucus → Peritonsillar tonsil
- mucus → Digestive tract

Blood clotting → physical barrier
 → multiply in mucus

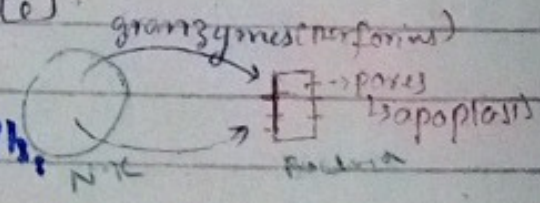
2nd Line of Defense:

→ consist of cells and responses.

N.K Cells:

→ Modified T-lymphocytes

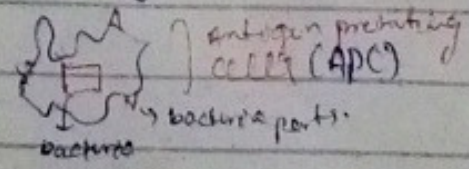
Macrophages & Neutrophils



monocyte (1/5)
 Blood

Enlarge → Macrophage
 Phagocytotic activity

- Liver
- Lungs
- Lymph
- Kidney
- Spleen



Neutrophil
 small sized
 lysosomal enzyme
 Infection site → burst
 Release → L. enzyme
 Bacteria → kill
 Dead bodies → Pus

Types Of Immunity:

Innate:

- In borne
- Active → birth
- Permanent
- Non modified
- Non specific
- physical & chemical barriers.

↳ ectodermal
↳ endodermal.

Active

- Antibodies → develop
- slow process
- Antigen needed
- Permanent

Acquired:

- Acquired
- Active / Develop
↳ after 6 months.
- usually permanent
- Modified
- Specific
- 3rd line of defense
↳ mesodermal

Passive

- Antibodies → taken
- Rapid.
- No antigen needed
- Short term

Natural:

Recovered from infection.

Clotting.
Placental.

Artificial:

Vaccination
↳ sick → by own choice

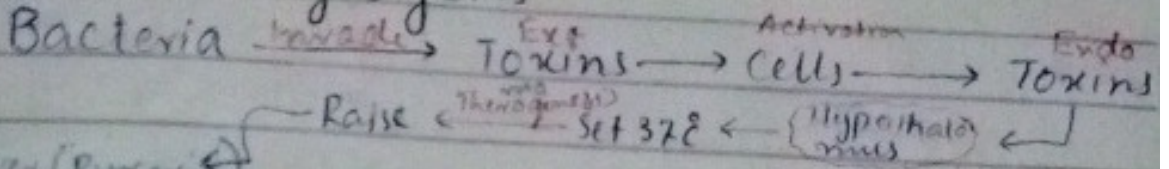
Antivenom
Antisera.

Inflammation & Swelling

Cut → Necrosis → Histamine → Vasodilation
 ↓
 Redness, Heat ← Blood flow ↑

Swelling → Pain.

Pyrexia & Pyrogens:



Fever (Pyrexia)

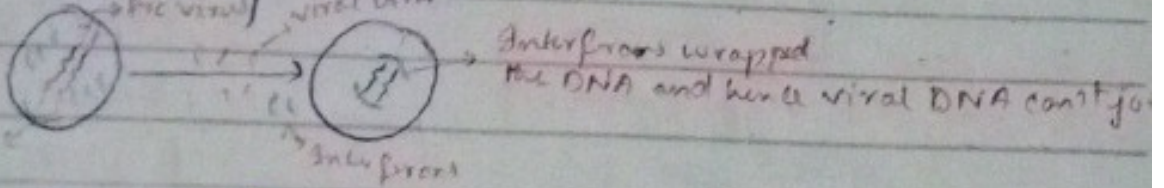
- Bacterial growth ↓
- Fe⁺⁺ ↓

Pyrogens → Toxins.

→ Immune system ↑

Interferons:

→ Ant-viral proteins



Complementary System:

- ↳ group of proteins 30 types
- ↳ mostly liver
- ↳ Suppletive role.

3rd Line of Defense:

T-Cells

Mature - Thymus

Helper T-lymphocytes:
 Recognize → (APC)

Killer-T-lymp:
 Kill invader

Suppressor
 Suppress → T-lymp

Memory:
 → Future infection.

B-Cells

Mature in bone marrow

secreted in bursa of fabricius

Memory:
 → Future infection

