

## STD 10-BIOLOGY-FIRST BELL-CLASS-31 Dated 24/11/2020

### Chapter – 5 Soldiers of Defense

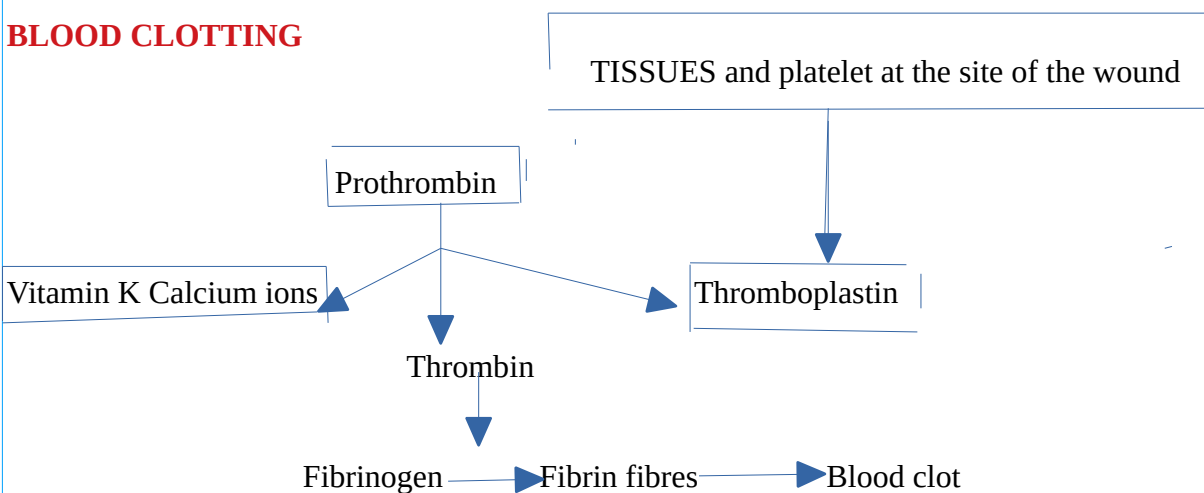
#### Blood Clotting

- Blood clotting is a defense mechanism.
- It is a chemical process to prevent excessive bleeding and the entry of germs through the wound

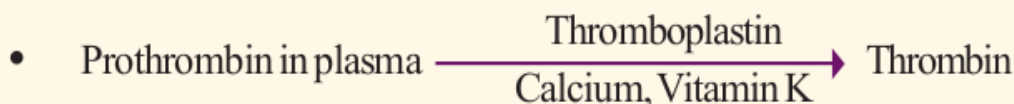
#### Different stages in the process of blood clotting:

- When wound occurs excess amount of blood is lost through it.
- Damaged platelets and cells at the site of wound degenerate to form thromboplastin
- With the help of calcium ions and vitamin K thromboplastin converts prothrombin into thrombin.
- Thrombin converts Fibrinogen into Fibrin fibres.
- Fibrin fibres create a network at the site of the wound.
- The red blood cells and platelets get entangled in the network of fibrin fibres to form the blood clot.

#### BLOOD CLOTTING



- Tissues and platelets at the site of wound degenerate to form the enzyme called thromboplastin.



- The red blood cells and platelets get entangled in the network of fibrin fibres to form the blood clot.

### Importance of Blood Clotting defense mechanism

- Blood clotting helps to prevent bleeding .
- Checks the entry of pathogens through wounds.

### Healing of Wounds

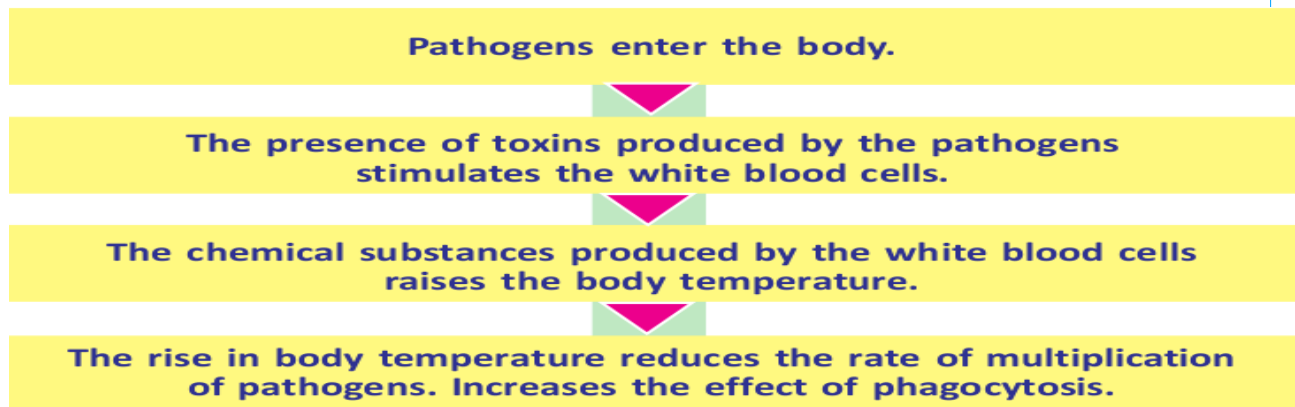
- Healing of wound is a stage after inflammatory response and blood clotting.

### Methods of healing of wound in our body

- When a wound occurs new similar tissues are formed in place of the tissues damaged or lost by the wound. In such situations the **wound scar does not remain.**
- In certain cases when new similar tissues cannot be formed, the connective tissue heals the wound. In such situations, the **wound scar remains.**
- Infections through the wound slow down the healing process.
- A strong defense system accelerates the process of wound healing and reduces the chance of infection.

### Is Fever a disease ?

- Fever is a condition when the body temperature rises above the normal level.
- The normal body temperature is 37°C (98.6° F).



### What is the benefit of rising body temperature ?

- Reduce the rate of multiplication of pathogens.
- Increase the effect of phagocytosis.
- Fever is a defense mechanism.

### Why do we take medicines during fever?

- When infection becomes uncontrollable, the body temperature may rise tremendously.
- If the rise in body temperature persists for a long time, it may badly affect the internal organs including the brain.
- We take medicines to reduce the body temperature during fever .
- But it is advisable to treat after diagnosing the exact reason.

### Non-specific defense mechanism

- It is a mechanism that protects us from all pathogens without considering their characteristic features.
- Lymphocytes are the blood cells that specifically identify and destroy pathogens that enter the body by overcoming the non- specific defense mechanism of the body.

**Evaluation:**

1) Write a short note on Blood Clotting defense mechanism.

**Hints:**

- Formation of thromboplastin
- Role of calcium and vitamin K
- Role of thrombin
- Formation of fibrin fibres
- Formation of blood clotting

2) Write a short note on Fever as defense mechanism

**Hints:**

- Normal body temperature
- Cause for rising body temperature
- Benefit of rising body temperature