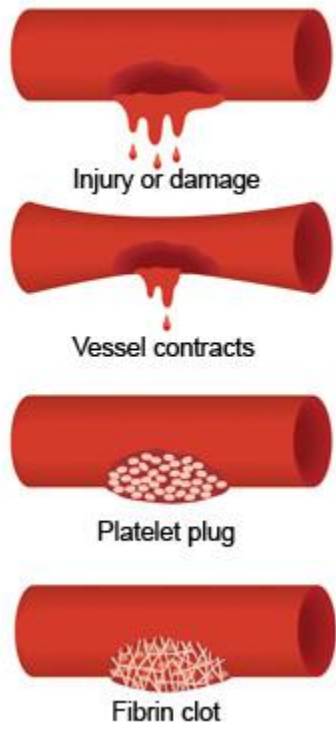




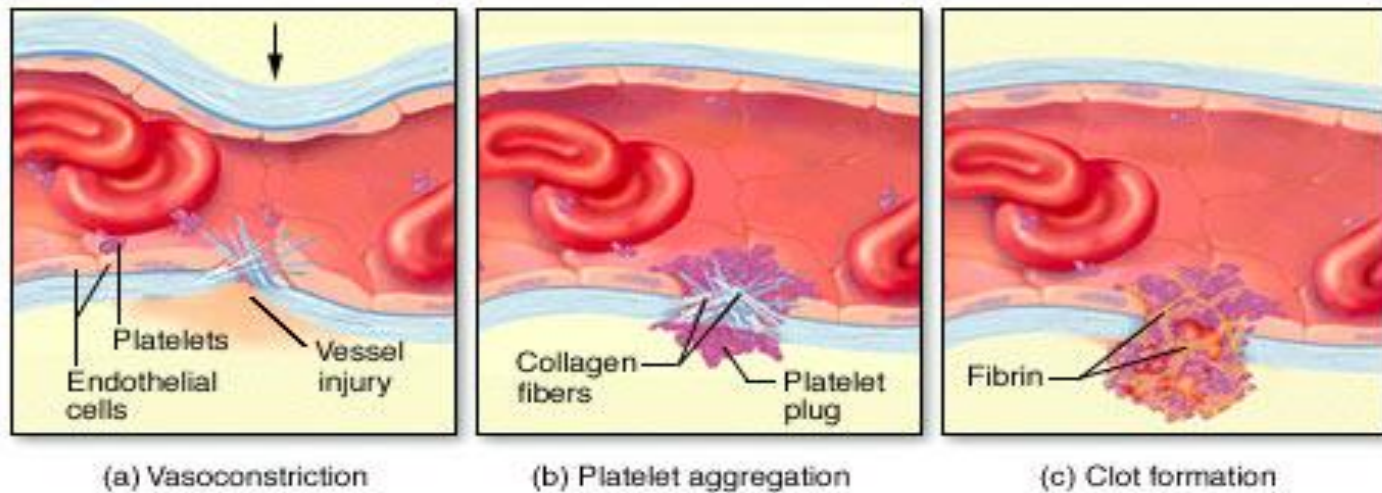
# HAEMOSTASIS

## Lecture-8

1



- The term *hemostasis* means prevention of blood loss.



- Haemostasis refers to the spontaneous arrest or prevention of bleeding from the injured / damaged vessels by the physiological process. It involves the following three main steps.
  1. Vasoconstriction
  2. Formation of temporary haemostatic plug
  3. Formation of the definitive haemostatic clot

# CELLS

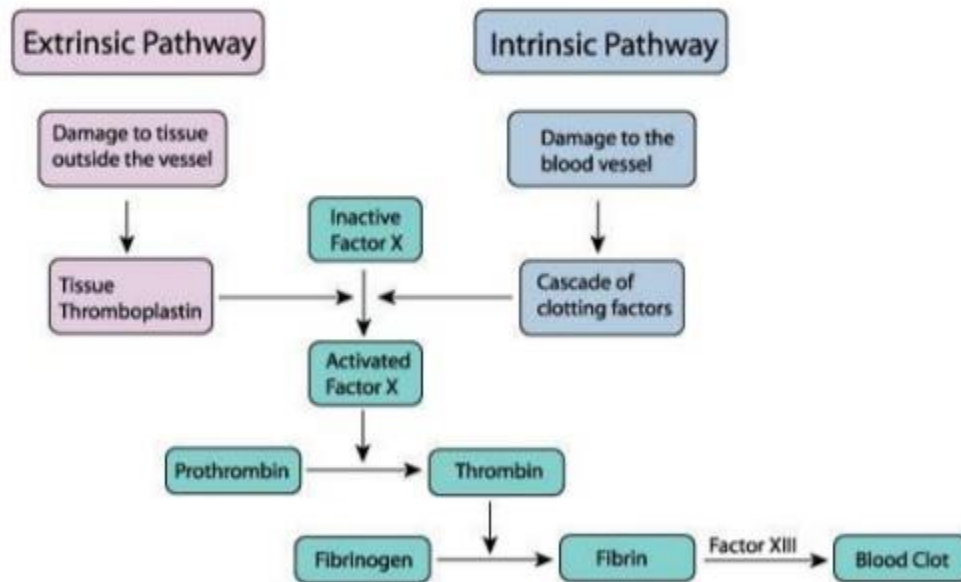
- Platelets + Clotting factors



## **FACTORS INVOLVED IN BLOOD CLOTTING:**

- **Factor I: Fibrinogen**
- **Factor II: Prothrombin**
- **Factor III: Thromboplastin**
- **Factor IV: Calcium**
- **Factor V: Labile factor**
- **Factor VI: Presence has not been proved**
- **Factor VII: Stable Factor**
- **Factor VIII: Antihemophilic**
- **Factor IX: Christmas factor**
- **Factor X: Stuart factor**
- **Factor XI: Plasma Thromboplastin antecedent**
- **Factor XII: Hagan factor**
- **Factor XIII: Fibrin stabilizing factor**

# EXTRA



## 1. Formation of prothrombin activator

*Intrinsic pathway*

- Blood trauma, or
- Exposure of blood to collagen underlying damaged endothelium, or
- Exposure of blood to electronegatively charged wettable surface such as glass

*Extrinsic pathway*

Trauma to blood vessels or extravascular tissue

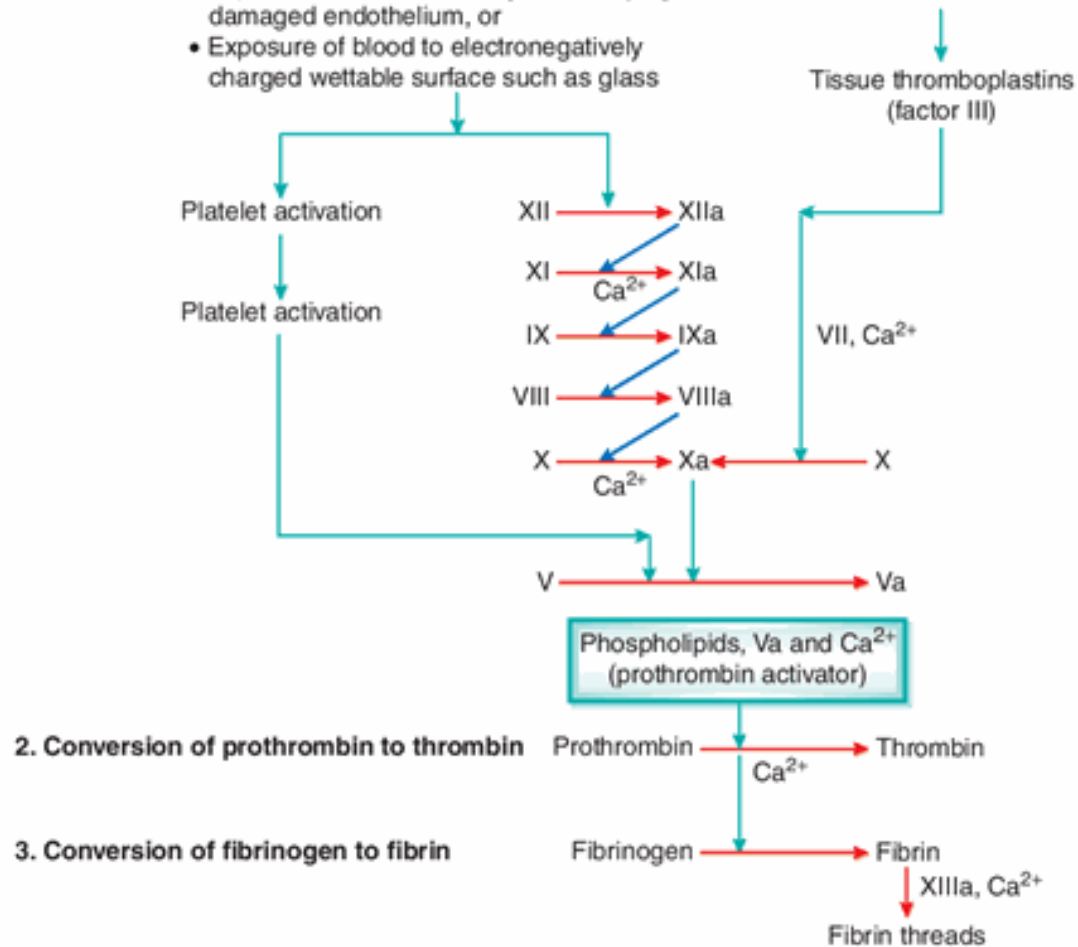


Figure 3.5-5 Mechanism of blood coagulation.



# CLOT RETRACTION—SERUM

- Within a few minutes after a clot is formed, it begins to contract and usually expresses most of the fluid from the clot within 20 to 60 minutes.
- The fluid expressed is called *serum because* all its fibrinogen and most of the other clotting factors have been removed; in this way, serum differs from plasma.
- Platelets are necessary for clot retraction to occur.

# CONSEQUENCES OF IMPAIRED BLOOD CLOTTING

- Hemophilia is a common hereditary coagulation blood disorder due to deficiency or reduced activity of clotting factor VIII or clotting factor IX.
- This disorder is a X- linked recessive disorder. Hemophilia is a bleeding disorder that slows down the blood clotting process.
- It's transmitted via females to men who are sufferers.
- Female who carry a single mutated gene, are generally asymptomatic and not affected.
- People who have Hemophilia often have longer bleeding after some sort of contact to injury.
- People who have severe Hemophilia start to have spontaneous bleeding in the joints and muscles all around their bodies.

