

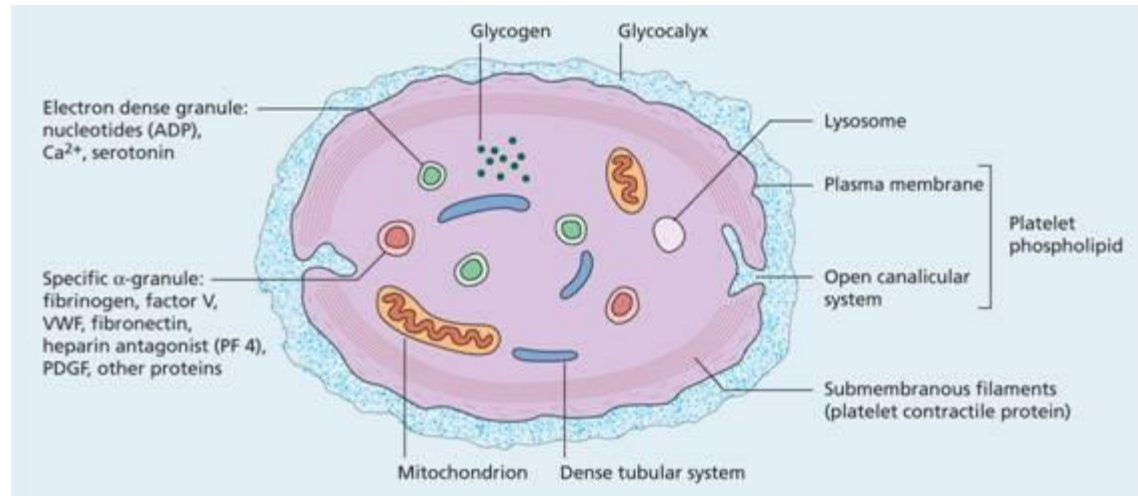


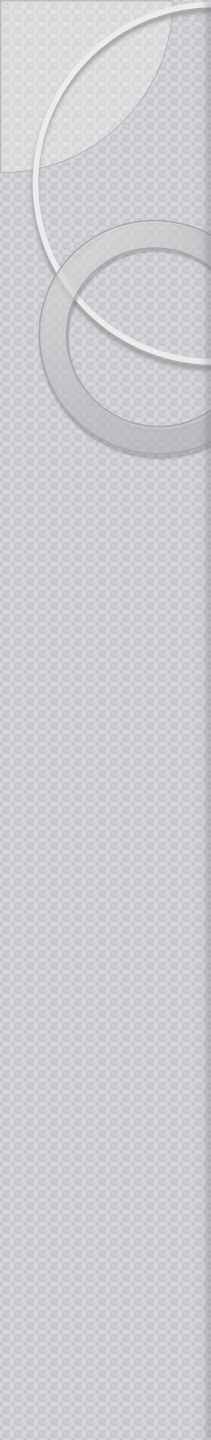
# Platelets

# Structure and Composition Platelets

- Also known as thrombocytes (thrombo = clot ; cytes = cells).
- Size: Platelets are the smallest blood cells varying in diameter from 2 to 4  $\mu\text{m}$  with an average volume of  $5.8 \mu\text{m}^3$ .
- Shape and colour: Platelets are colourless, spherical, or oval discoid structures.
- Leishman staining shows a platelet consisting of faint bluish cytoplasm containing reddish purple granules.
- Nucleus is absent in the platelets and therefore these cannot be reproduced.

# Platelet

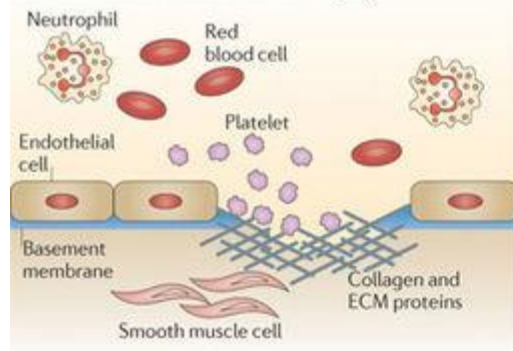


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- Other proteins present in the cytoplasm are as follows:
  - Fibrin stabilizing factor
  - Platelet-derived growth factor (PDGF)
  - Von Willebrand factor (VWF)

# Properties of Platelets

1. Adhesiveness
2. Aggregation

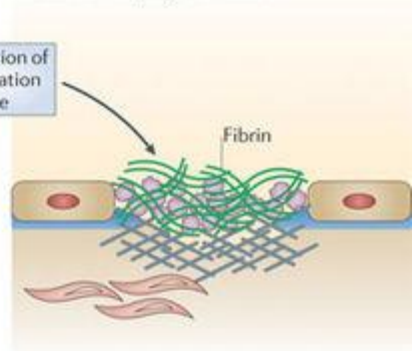
### Platelets adhere to site of vascular injury



### Platelet aggregation and activation



### Haemostatic plug formation



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# Functions of Platelets

- Platelets When activated, platelets perform the following functions:
  - 1. Role in Haemostasis
  - 2. Role in Clot Formation
  - 3. Role in Clot

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- **5. Role in Defence Mechanism Platelets -**
  - **6. Transport and Storage**



- **Normal Count** Normal platelet count ranges from 150,000 to 450,000 / mm<sup>3</sup>, with an average count of 2.5 lakhs / mm<sup>3</sup>
- **Thrombocytosis:** an increase in the number of platelets more than 4.5 lakhs / mm<sup>3</sup> is called thrombocytosis.
- **Thrombocytopenia:** decrease in the number of platelets below 1.5 lakhs / mm<sup>3</sup> is called thrombocytopenia.

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- Lifespan of platelets varies from 8-10 days with an average of 10 days.

