Physiology Lab. 2

- ***Bleeding & Clotting Time***
- ***Blood groups***
- ***By***
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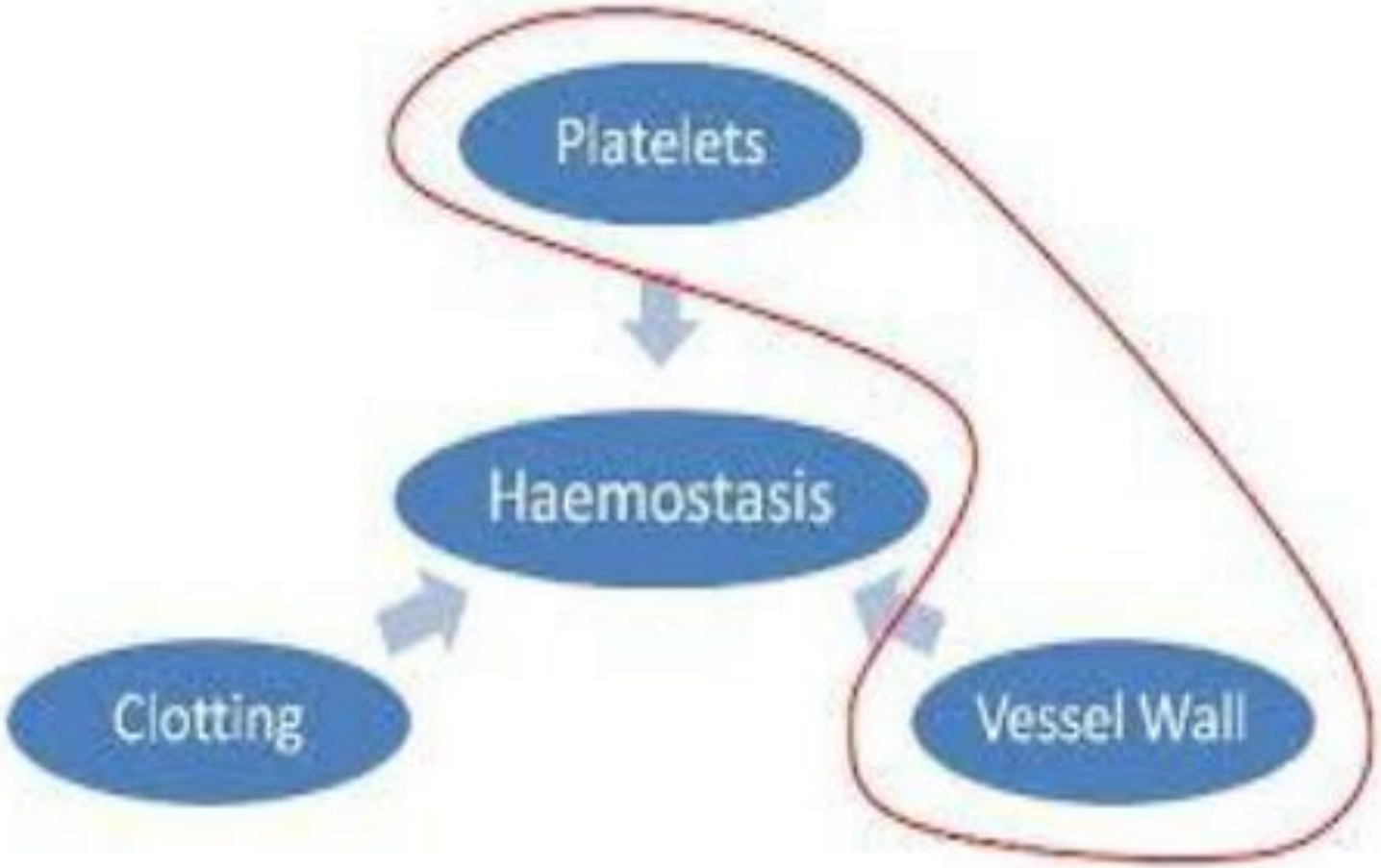
- ***MUTAH SCHOOL OF MEDICINE***

I. Bleeding time (B.T)

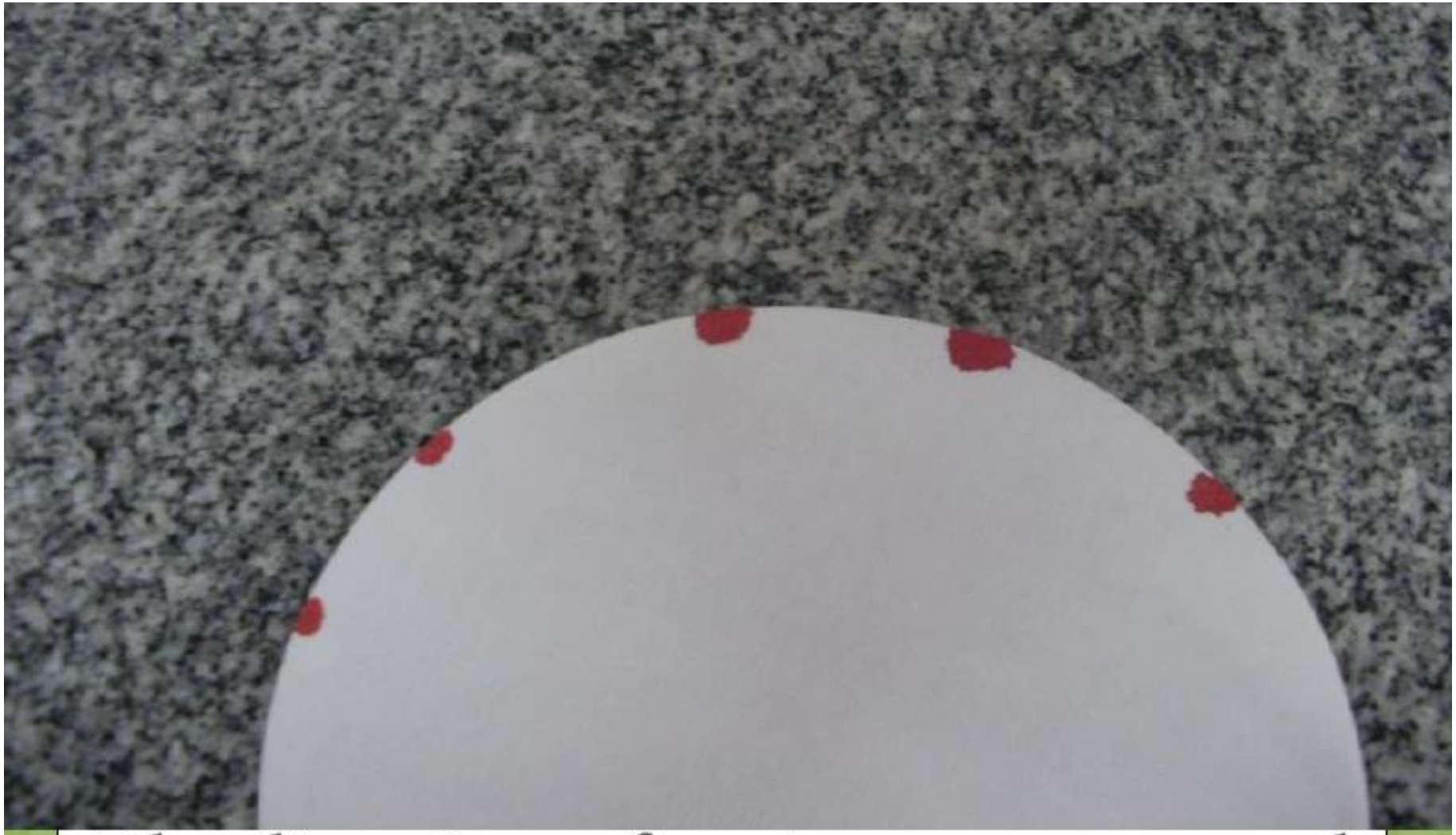
- It is the time required for bleeding to stop from small injured blood vessels *without formation of a blood clot*.
- depends on:
  - The integrity of the vascular walls
  - An adequate number and function of platelets to adhere together to form platelet plug.


Platelets
Haemostasis
Clotting
Vessel Wall

procedure

1)Modofied Duke method:

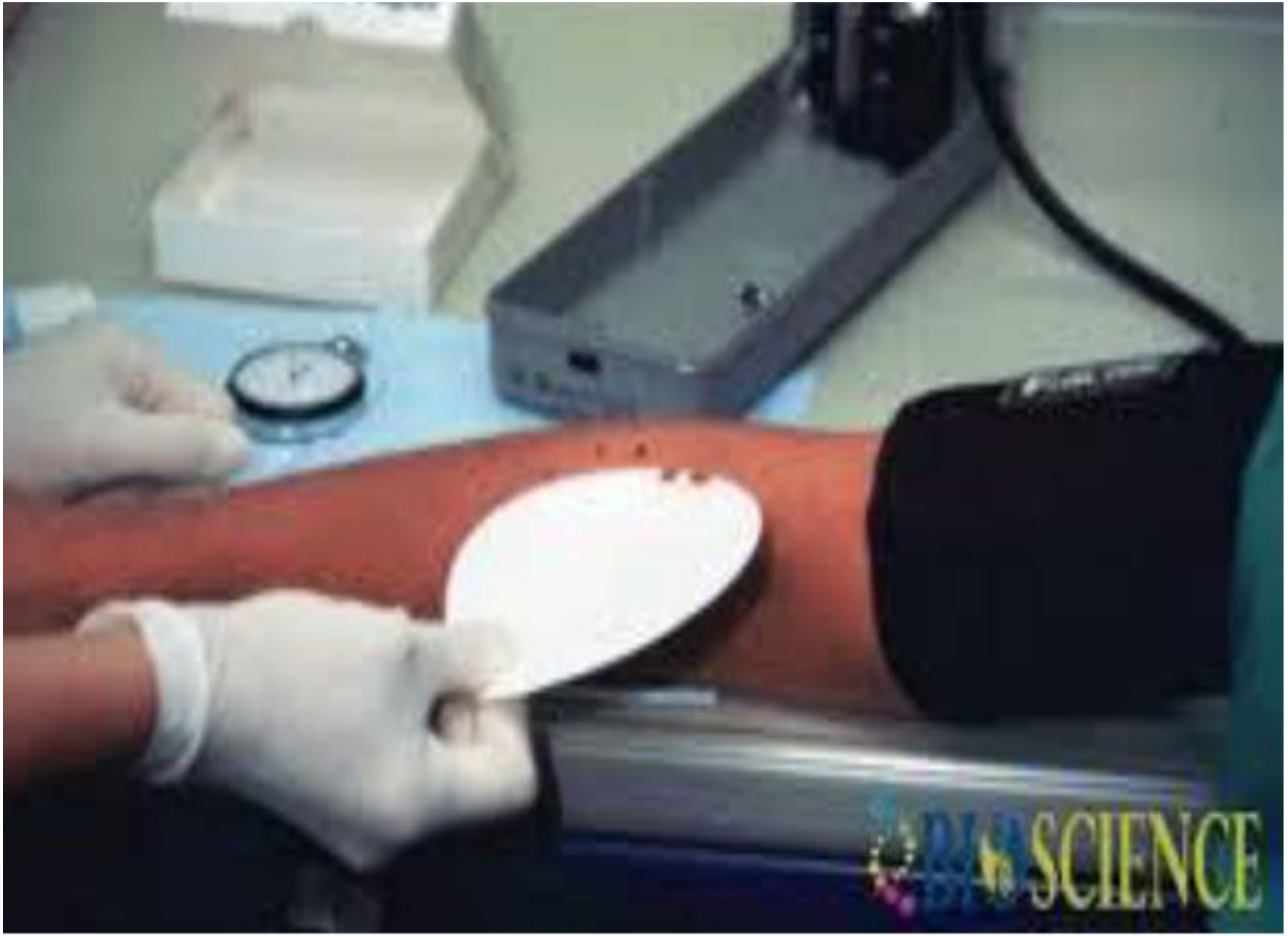
- A glass slide is held behind the ear.
- The ear is pierced with a lancet.
- Apply a filter paper to blood drop without pressure every 30 seconds till there is no further staining of paper



Bleeding time of 2 minutes, 30 seconds

2) Ivy method:

- A sphygmomanometer cuff is placed on the upper arm and inflated to 40 mm Hg.
- A sterilized area of forearm without visible superficial veins is selected and is pierced by sterilized lancet in 3 points.
- Wipe the blood every 30 seconds from the 3 points alternatively until no blood comes to the filter paper.
- The normal bleeding time is the mean of 3 pricks.


SCIENCE

Normal values:

By Duke method: **up to 8 minutes.**

By Ivy method: **up to 5 minutes.**

Prolonged in:

- Purpura
- VW disease

II. Coagulation or clotting time (C.T.)

- It is the time needed for the blood to clot.
- It measures the efficacy of intrinsic coagulation pathway.

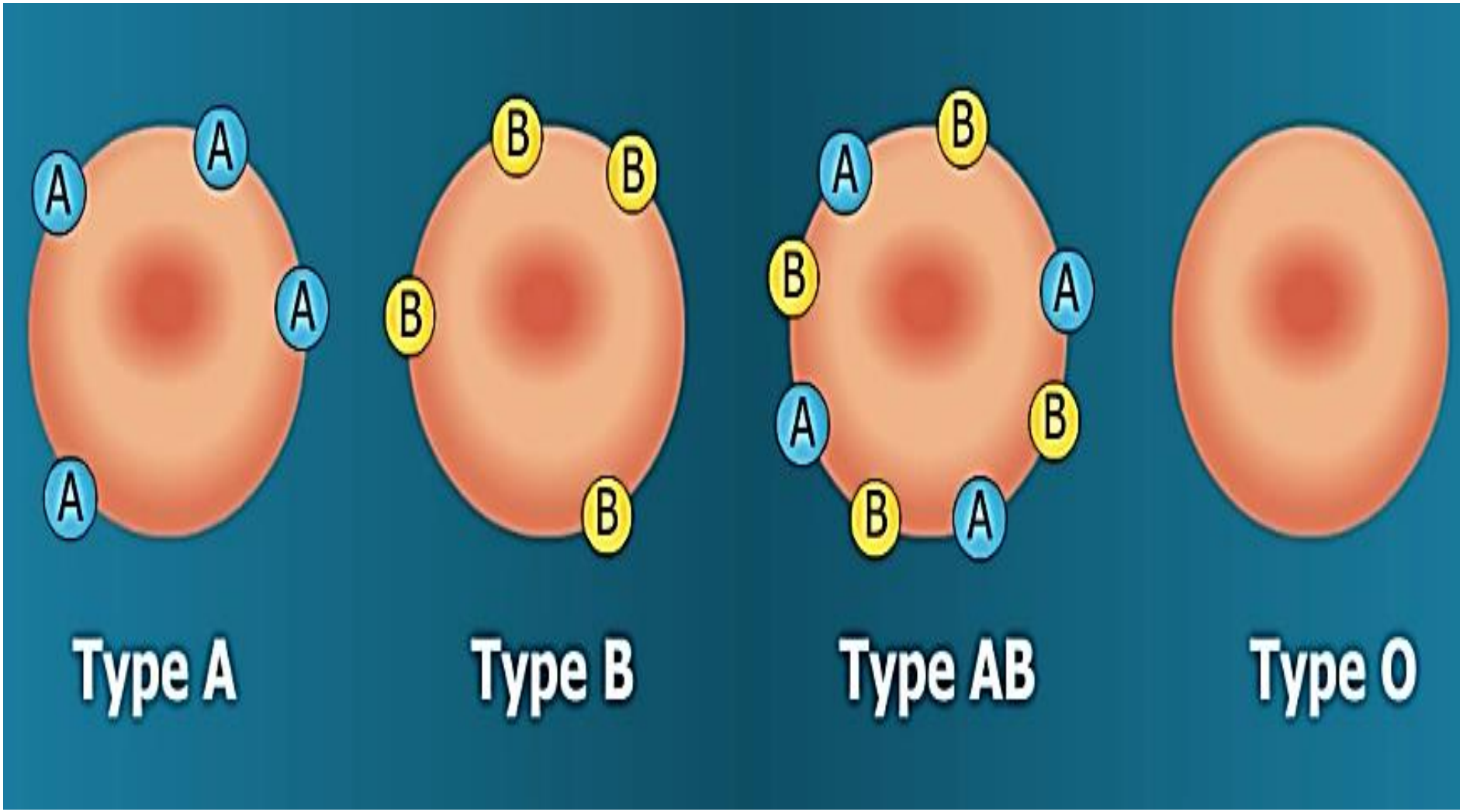
procedure

- Obtain blood in a syringe and start stop watch.
- Bring 2 test tubes and put 1 ml of blood in each tube.
- 2 tubes are placed in water bath at 37c.
- Each tube is tilted every 30 seconds until it can be inverted with no flow of blood down the side of tube.
- Second tube is uesd to confirm the result.

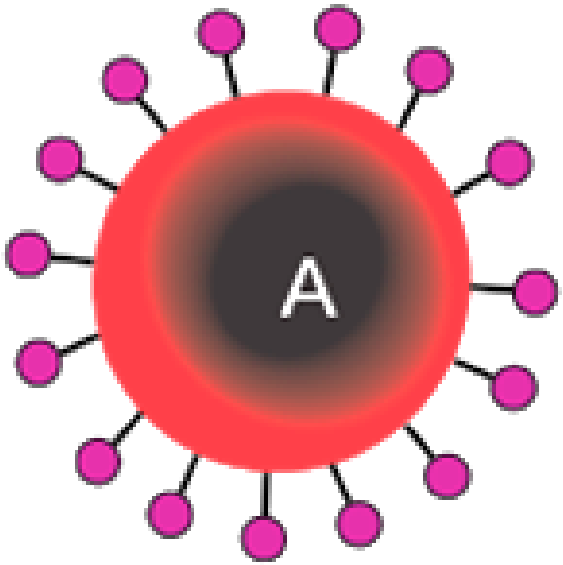
- **Normal Coagulation time:** 3-8 minutes

Blood grouping

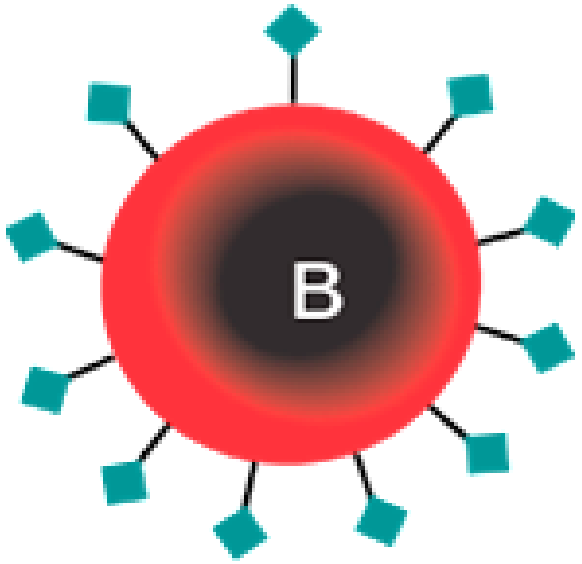
❑ ABO System:



In Plasma

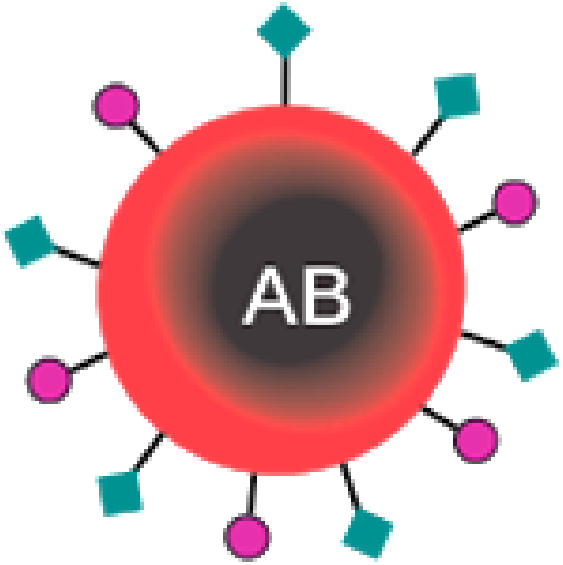


Anti-B

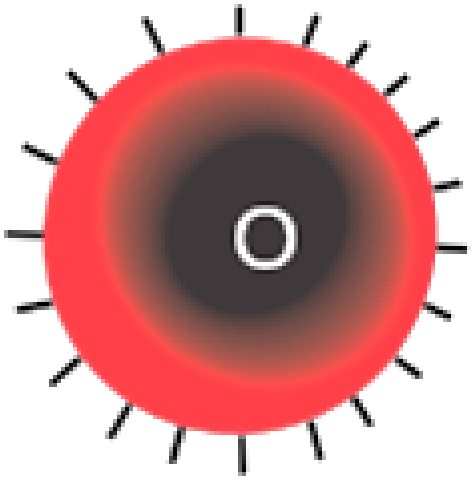


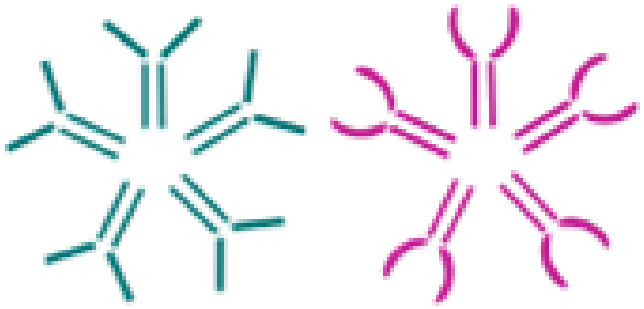
Anti-A

In Plasma

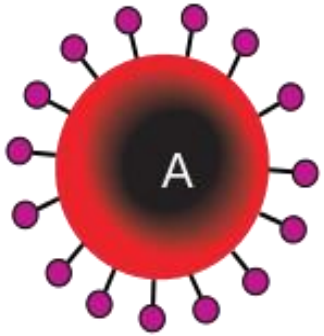
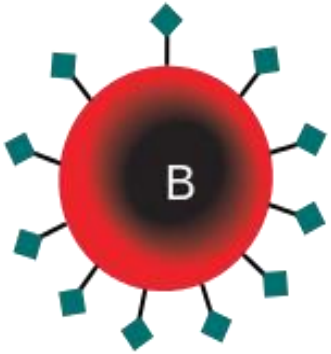
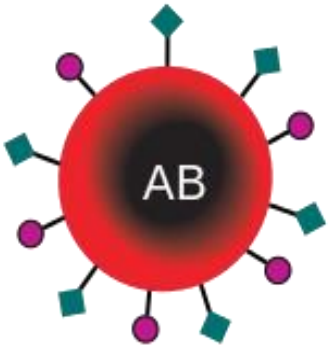
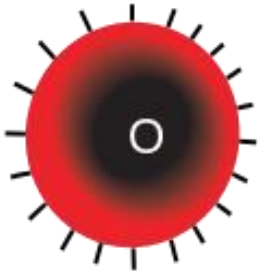
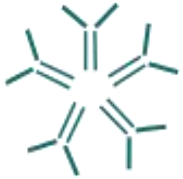
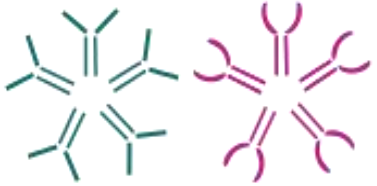


None

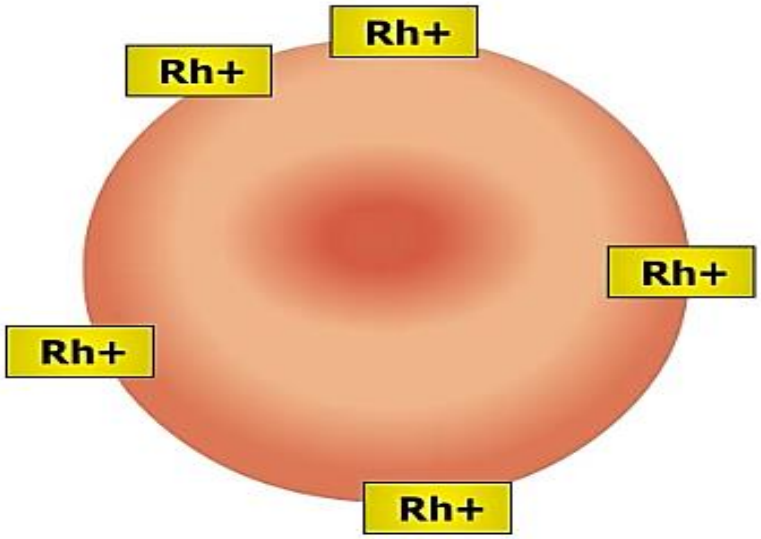




Anti-A and Anti-B

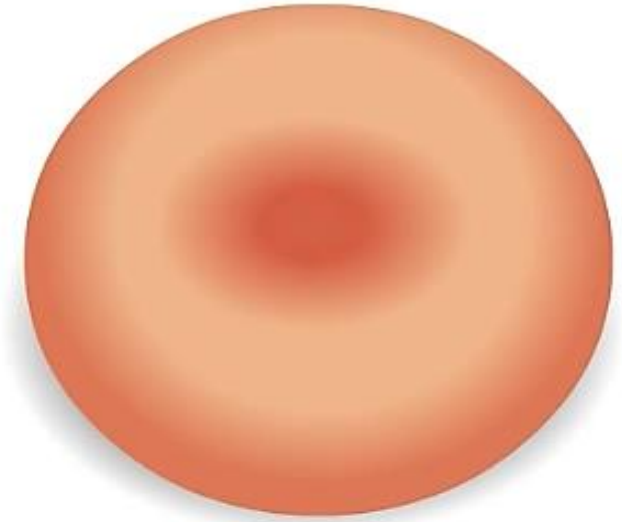
	41%	9%	3%	47%
	Group A	Group B	Group AB	Group O
Red blood cell type				
Antibodies in Plasma	 Anti-B	 Anti-A	None	 Anti-A and Anti-B
Antigens in Red Blood Cell	A antigen	 B antigen	 A and B antigens	None

❑ Rh system:



Rh +ve

85%



Rh -ve

15%

• Importance of blood groups:

(1) Medico legal importance:

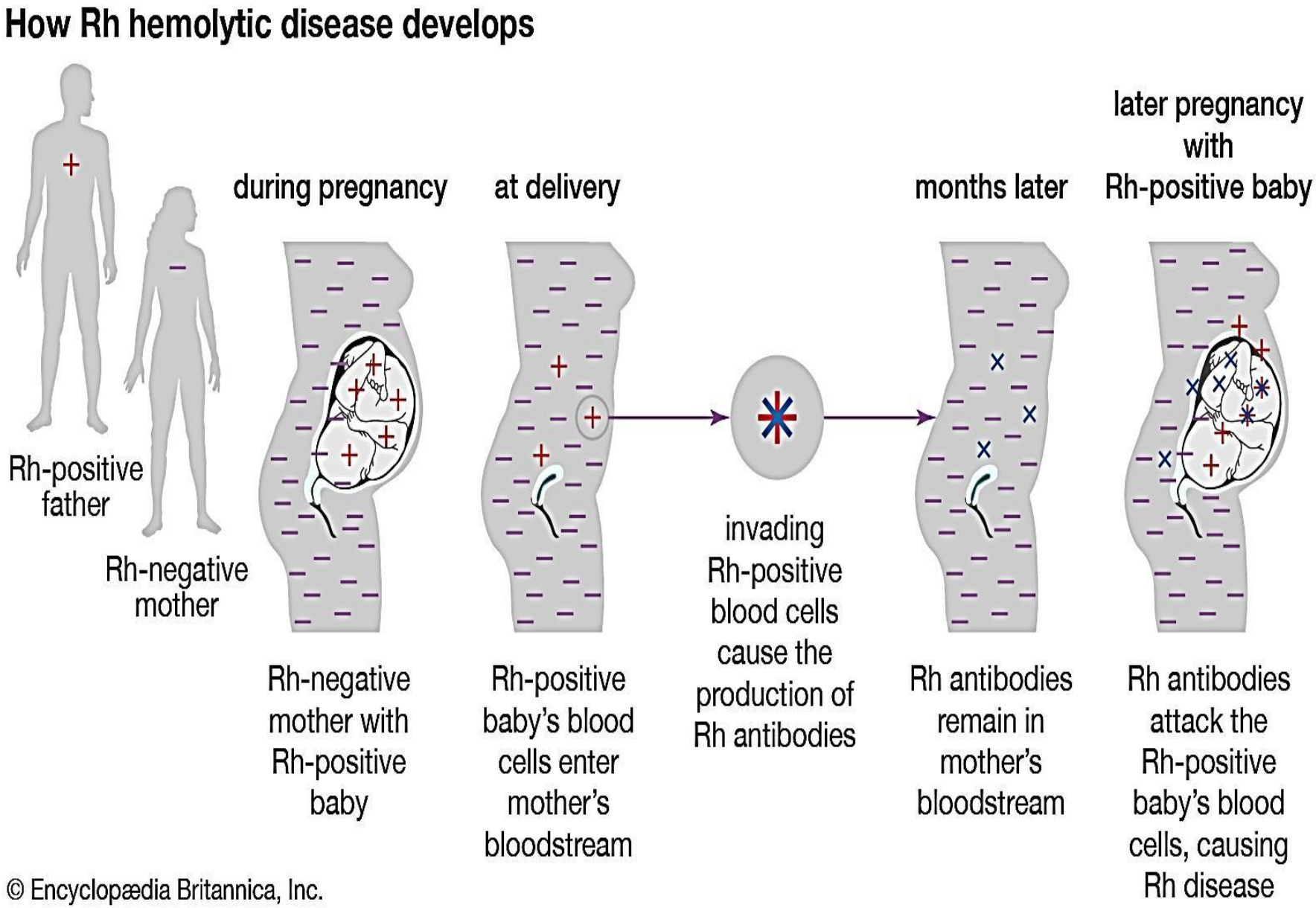
- In disputed paternity (good negative test).
- In the criminal practice.

(2) Blood transfusion:

The recipient's plasma should not contain agglutinin against the donor's red cells.

(3) Avoiding erythroblastosis fetalis (Rh +ve fetus of Rh –ve mother)

Erythroblastosis fetalis

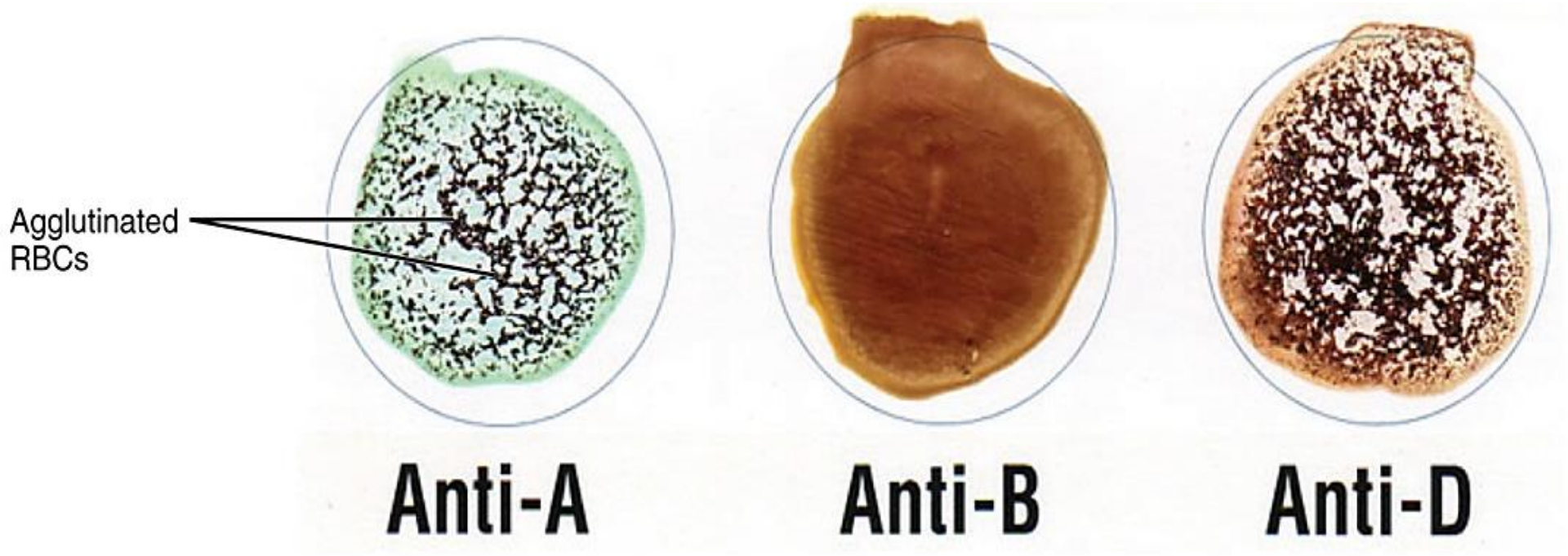


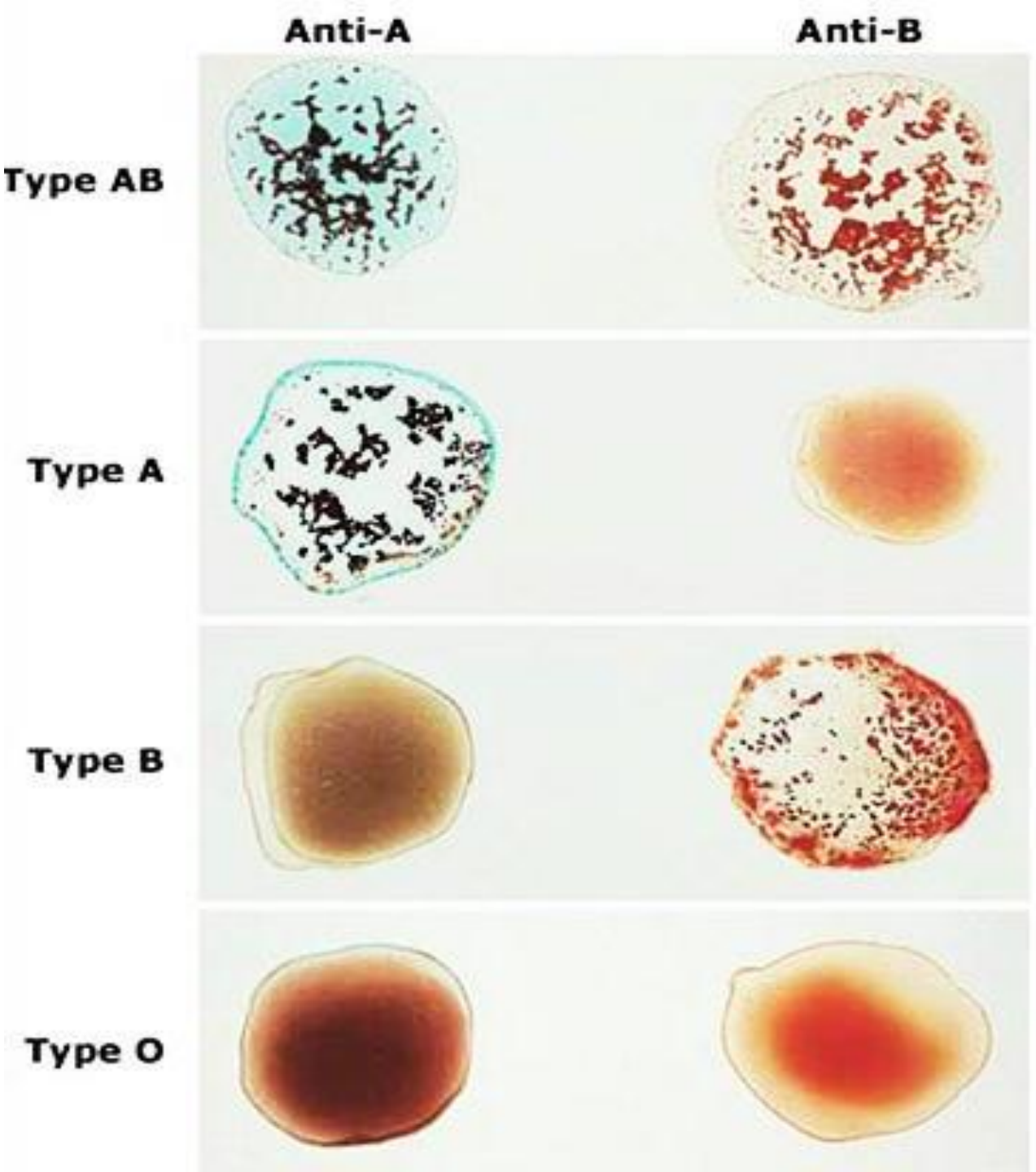
❑ Determination of blood group:

*** By slide technique.**

*** Materials**

- Glass slides.
- Anti-A serum
- Anti-B serum
- Anti-D serum
- Sterile lancet, Cotton and Alcohol.


Agglutinated RBCs
Anti-A
Anti-B
Anti-D


Anti-A
Anti-B
Type AB
Type A
Type B
Type O

1

O -

2

A+

3

B+

4

AB+


Best
Wishes