

❖ **Blood bank:** A place where blood is collected from donors, typed, separated into components, stored, and prepared for transfusion to recipients. It is a cornerstone of emergency and surgical medicine and is dependent on the clinical laboratory for ensuring the safe use of blood and its components.

❖ **Blood transfusions:** the introduction of blood or blood components from one person into the bloodstream of another. It can save life and improve health. It may result in acute or delayed complications. In addition, it carries the risk of transmission of infectious agents, such as HIV, hepatitis viruses, syphilis,

Why it's done?

There are many reasons make people receive blood transfusions, including: Major surgery, used to treat severe anemia resulting from the effects of chemotherapy, cancer, sickle cell disease, and thalassemia. So it's essential for saving the lives for those persons.

Blood has several components, including red blood cells, white blood cells, plasma and platelets. Whole blood means the blood contains all its parts, but whole blood is rarely used for transfusion.

Selection of Donation:

The questions are designed to identify the donor:

- 1- Name
- 2- Age (18-60)
- 3- Weight: At least 50 Kg.
- 4- Hb measurement must be more than 13.5 in men and 12.5 in women
- 5- Identification
- 6- Address housing
- 7- The latest donation (Must be at least 3 months).
- 8- Health: General good health (must be free from chronic diseases, don't Taking antibiotics or drugs)
- 9- Diet (A meal is recommended at least four hours prior to donation. Drink plenty of fluids).
- 10- The physical measurement includes blood pressure, pulse, and temperature.

❖ Who is cannot donate blood?

People suffering from following infection that may be present in the donor and could be transmitted through transfusion to another person.

- 1- AIDS
- 2- Cancer
- 3- Hepatitis
- 4- Organ Failure: Kidney, lung or liver failure.
- 5- Parasites infection that cause malaria.

❖ Testing Donated Blood In the blood bank laboratory, certain tests must be performed on all donated blood. Each unit of donated blood is tested for:

- Determine the donor's ABO blood group and Rh status
- Hepatitis B
- Hepatitis C
- HIV types
- Syphilis

❖ Blood Collection Procedures

1. The donor sits in a reclining chair.
2. The site for drawing blood is selected and disinfected. A prominent vein is chosen for the venipuncture site.
3. The disinfectant is applied to the area around the vein to be used.
4. The needle used to draw the blood from the vein is gently inserted.
5. Blood fills the collection bag in a few minutes.
6. Just after the bag has filled, blood from the line is taken to fill several tubes for further testing.
7. The needle is removed and pressure is applied over the venipuncture site, then a bandage is placed for the next couple of hours.
8. The donor drinks some liquid to replace the lost blood volume

Possible Incidents During or After Blood Collection

Staff must be aware of the incidents that may occur during or after the donation process and know how to manage them efficiently.

❖ Slow or Interrupted Blood Flow: If blood flow slows down or stops (as previously mentioned, staff should):

- Ensure that the blood bag is positioned below the level of venipuncture (the donor's arm).
- Ask the donor to open and close their fist to improve flow.
- Loosen and reapply the tourniquet to enhance circulation.
- Gently adjust the needle position if necessary.

❖ **Flow Stops Before Reaching the Minimum Required Volume:**

The collected blood cannot be used and must be discarded. The Reason is that each blood bag contains a specific amount of anticoagulant solution designed for a certain volume of blood. The bag must be filled properly to maintain the correct blood-to-anticoagulant ratio; otherwise, the blood becomes unsuitable for therapeutic use.

- ❖ **Second Donation Attempt:** If the donor agrees, a second collection attempt can be made from the other arm using a new blood bag. The size of the blood bag for the second attempt should be chosen according to the volume already drawn from the donor, to ensure the maximum allowable donation limit is not exceeded.
- For example, if 150 mL was collected during the first attempt, a 250 mL bag should be used for the second attempt if the donor is eligible to donate 450 mL in total.

- ❖ **In Case of a Vasovagal Reaction:** A vasovagal reaction (fainting or dizziness) may occur during or after blood collection in up to 5% of blood donors. It is often caused by anxiety or when the donor stands up too quickly.

Symptoms: The donor may feel unwell, showing symptoms such as dizziness, heavy sweating, facial pallor, blurred vision, and temporary alteration of consciousness.

Procedure:

- If the donor loses consciousness, stop the blood collection immediately.
- Lay the donor on their back and raise their legs (shock position).
- Once consciousness is regained, ensure the donor is adequately hydrated (fluids should be provided).