



HEMATOLOGY - FIRST COURSE

LAB -2- BLOOD COLLECTION

Sawa University

جامعة ساوة الاهلية

College of health and medical techniques

كلية التقنيات الصحية والطبية

Department of Medical Laboratories

قسم تقنيات المختبرات الطبية

Third Stage

المرحلة الثالثة

محاضرة رقم 2

Lecture No. 2

الجانب العملي

Practical

تدريسيين المادة : م.م خلود عايد حسين
م.م علي أياد أبوجعيلة

BLOOD COLLECTION

Blood collection (phlebotomy) is the process of obtaining blood samples from a patient for laboratory testing, transfusion, or diagnostic purposes.



Blood Collection Methods

- ❑ Venous Blood Collection (Venipuncture).
- ❑ Arterial Blood Collection.
- ❑ Capillary Blood Collection (Fingerstick).



Blood Collection Methods

□ Venous Blood Collection (Venipuncture):

- It is the withdrawal of blood from a vein in the arm, usually using a needle and syringe or a vacuum tube, in order to obtain a large quantity for most laboratory tests.
- Venipuncture is the most widely performed blood collection technique.

Blood Collection Methods

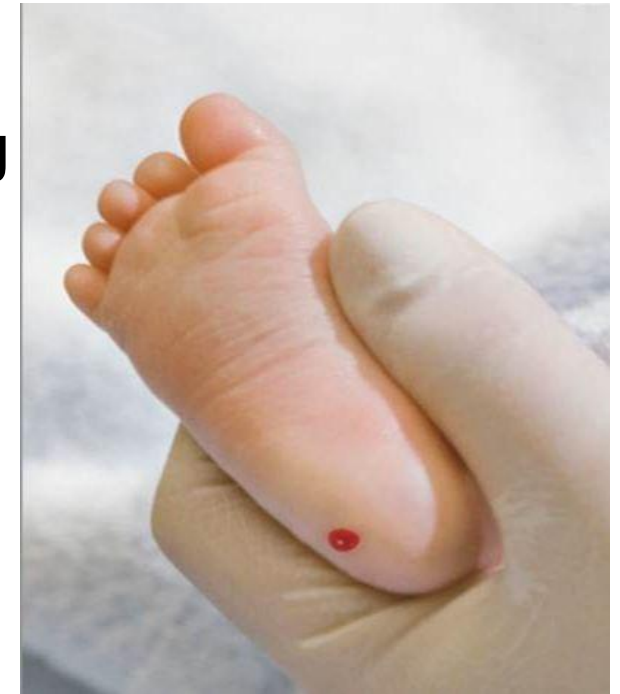
□ Arterial Blood Collection

- It is the withdrawal of blood from an artery such as the radial or femoral using a special needle for the purpose of measuring blood gases and assessing respiratory functions.
- Arterial blood collection is not performed widely.
- Arterial blood is taken from the pelvis in case of infants.

Blood Collection Methods

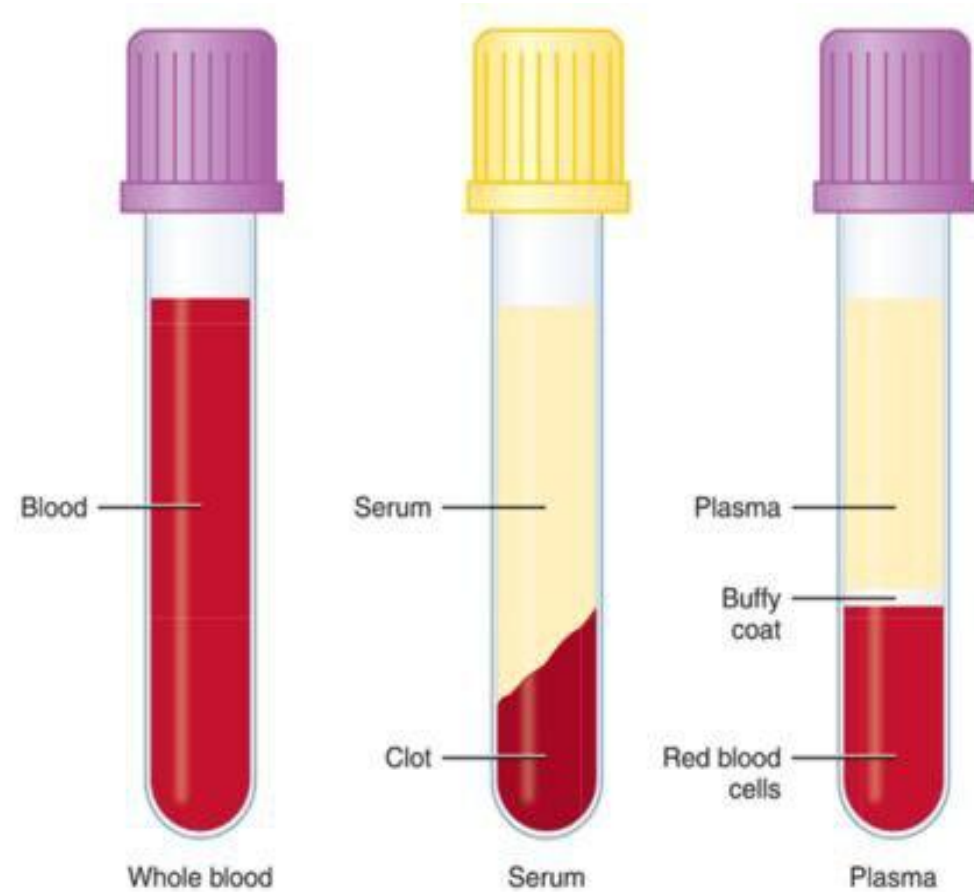
□ Capillary Blood Collection (Fingerstick)

- It is taking a small amount of blood from the capillaries via a finger or heel prick for use in rapid examinations, for example: blood grouping test, random blood sugar test, or in children
- Capillary blood is taken from the heel in case of infants.



Types of blood samples

- ◆ Whole blood sample
- ◆ Serum
- ◆ Plasma



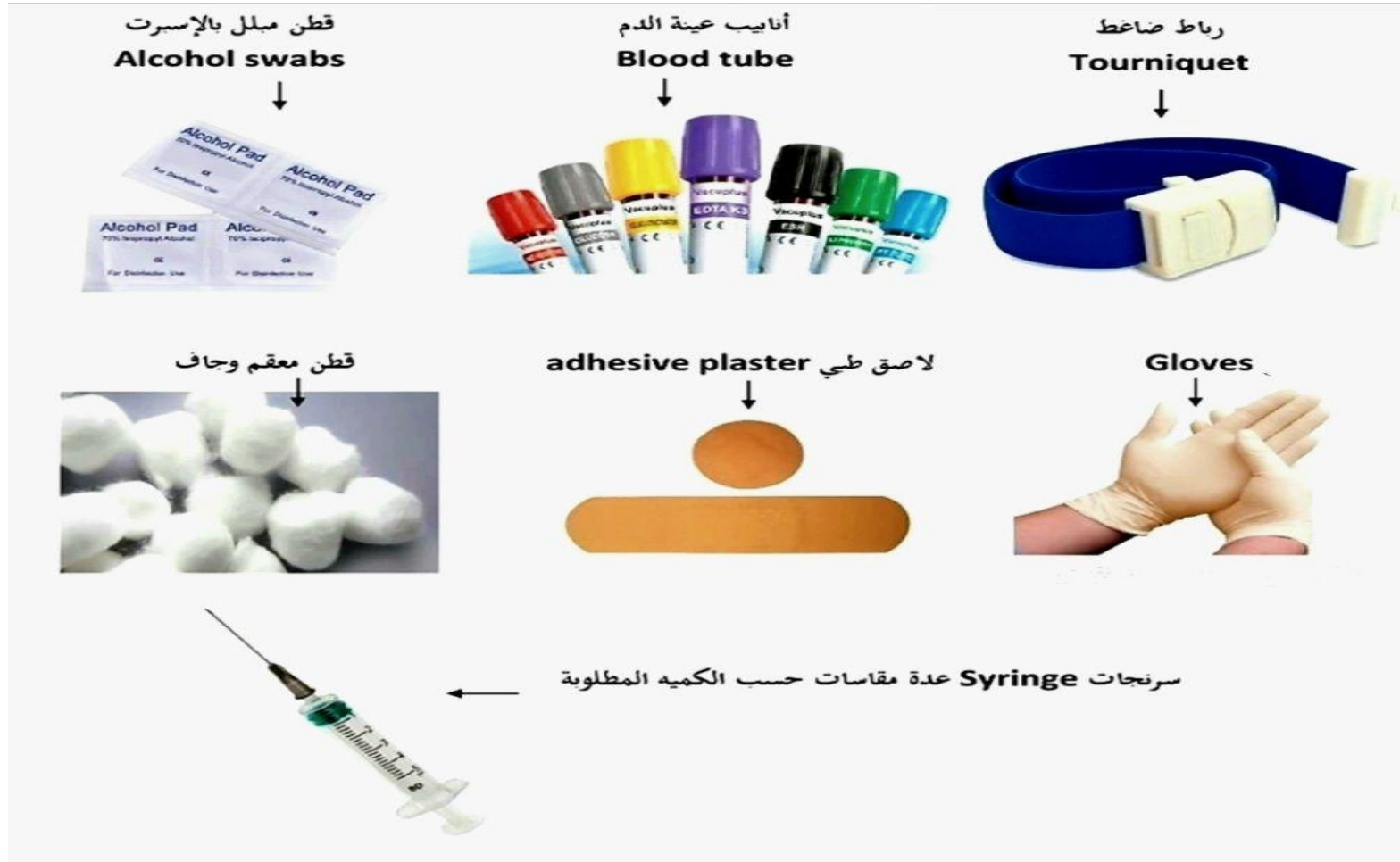
Common types of blood collection tubes:



Common types of blood collection tubes:

- ❖ **purple tube (EDTA):** used for hematological tests.
- ❖ **Yellow tube (clot activator and jell):** used for biochemical tests.
- ❖ **Red tube (plain):** used for thyroid function tests.
- ❖ **Blue tube (sodium citrate):** used for hematological tests (PT and PTT).
- ❖ **Green tube (sodium heparin):** used for chemistry tests.
- ❖ **Black tube (sodium citrate):** used for ESR testing.
- ❖ **Grey tube (sodium fluoride):** used for blood glucose tolerance and blood alcohol tests.

Materials required in the blood collection process



Materials required in the blood collection process

- 1. Alcohol (sterilizer)**
- 2. Cotton**
- 3. Needle and syringe**
- 4. Tourniquet**
- 5. Blood collection tubes**
- 6. Gloves**
- 7. Lancet (in case of capillary blood)**

Why do we draw venous blood rather than arteries?

- **veins are easier to access due to their superficial location compared to the arteries which are located deeper under the skin.**
- **Veins have thinner walls than arteries, and have less innervations, so piercing them with a needle requires less force and doesn't hurt as much.**
- **Venous pressure is also lower than arterial pressure, so there is less of a chance of blood seeping back out through the puncture point before it heals.**
- **veins tend to be larger than the corresponding artery in the area, so they hold more blood, making collection easier and faster.**

Common Errors

- Hemolysis due to small needle or mixing.
- Contamination from improper cleaning.
- Wrong order of draw.
- Tourniquet left >1 minute.

Safety Precautions

- **Always wear gloves.**
- **Never reuse needles.**
- **Dispose of sharps immediately.**
- **Avoid recapping needles.**
- **Correct labeling of samples.**

Quiz

- ✓ **Why do we draw venous blood rather than arteries?**
- ✓ **What are the most important methods for withdrawing blood?**
With an explanation of the most common method.
- ✓ **Materials required in the blood collection process?**

Any questions?

*Thank
You*