Blood Specimen Collection and Processing

lab -2-

by

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Blood Specimen Collection and Processing

The first step in acquiring a quality lab test result for any patient is the specimen collection procedure. The blood collection methods include:

a. Venipuncture Procedure

b. Finger stick procedure

c. Heels stick Procedure (infants)

A. Venipuncture procedure

1. The first step to the collection is to positively identify the patient by asking the patient to state and spell his/her name and give you his/her birth date.

2. Check the requisition form for requested tests, other patient information and any special draw requirements. Gather the tubes and supplies that you will need for the draw.

3. Position the patient in a chair, or sitting or lying on a bed.

4. Wash your hands.

5. Select a suitable site for venipuncture, by placing the tourniquet 3 to 4 inches above the selected puncture site on the patient.

6. Put on gloves, and palpate for a vein.

7. When a vein is selected, cleanse the area in a circular motion, beginning at the site and working outward. Allow the area to air dry. After the area is cleansed, it should not be touched or palpated again.

8. Ask the patient to make a fist, Grasp the patient's arm firmly using your thumb to draw the skin taut and anchor the vein. Swiftly insert the needle through the skin into the lumen of the vein. The needle should form a 15-30 degree angle with the arm surface.

9. When the tube is filling, remove the tourniquet.

10. Remove the needle from the patient's arm using a swift backward motion.

11. Place gauze immediately on the puncture site. Apply and hold adequate pressure to avoid formation of a hematoma. After holding pressure for 1-2 minutes, tape a fresh piece of gauze or Band-Aid to the puncture site.

12. Dispose of contaminated materials/supplies in designated containers.

Note: The larger median cubital and cephalic veins are the usual choice, but the basilic vein on the dorsum of the arm or dorsal hand veins are also acceptable. Foot veins are a last resort because of the higher probability of complications.

B. Finger stick procedure

1-Follow steps 1 through 5 of the procedure for venipuncture as outlined above.

2- The best locations for fingersticks are the **3rd (middle) and 4th (ring) fingers** of the non-dominant hand. Do not use the tip of the finger or the center of the finger. Avoid the side of the finger where there is less soft tissue, where vessels and nerves are located, and where the bone is closer to the surface. The 2nd (index) finger tends to have thicker, callused skin. The fifth finger tends to have less soft tissue overlying the bone. Avoid puncturing a finger that is cold or cyanotic, swollen, scarred, or covered with a rash.

3- When a site is selected, put on gloves, and cleanse the selected puncture area.

4- Massage the finger toward the selected site prior to the puncture.

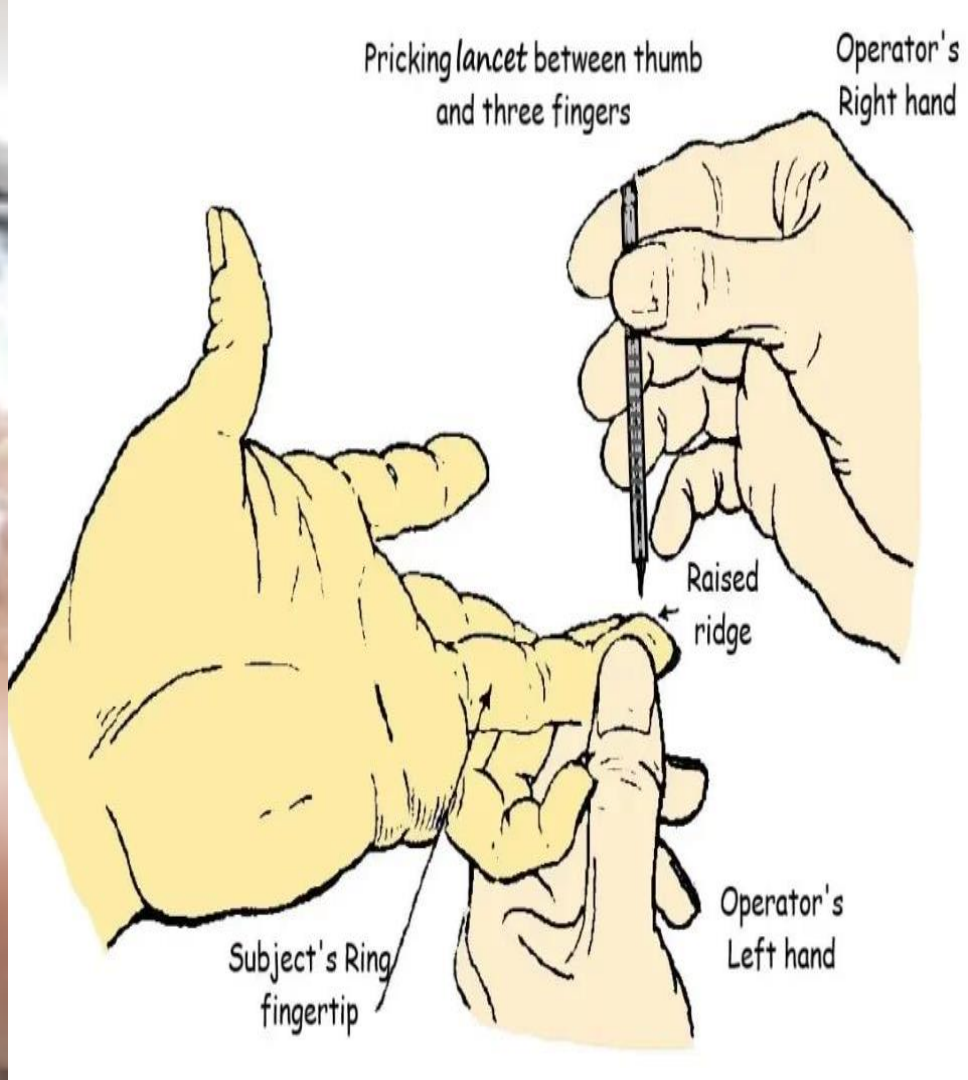
5- Using a sterile safety lancet, make a skin puncture just off the center of the finger pad. The puncture should be made perpendicular to the ridges of the fingerprint so that the drop of blood does not run down the ridges.

6- Wipe away the first drop of blood, which tends to contain excess tissue fluid.

7- Collect drops of blood into the collection tube/device by gentle pressure on the finger. Avoid excessive pressure or “milking” that may squeeze tissue fluid into the drop of blood.

8- Have the patient hold a small gauze pad over the puncture site for a few minutes to stop the bleeding.

9- Dispose of contaminated materials/supplies in designated containers.


Pricking lancet between thumb and three fingers
Operator's Right hand
Raised ridge
Operator's Left hand
Subject's Ring fingertip

C. Heel sticks procedure (infants)

1- Prewarming the infant's heel **(42° C for 3 to 5 minutes)** is important to increase the flow of blood for collection.

2- Wash your hands, and put gloves on. Clean the site to be punctured with an alcohol sponge. Dry the cleaned area with a dry gauze pad.

3- Hold the baby's foot firmly to avoid sudden movement.

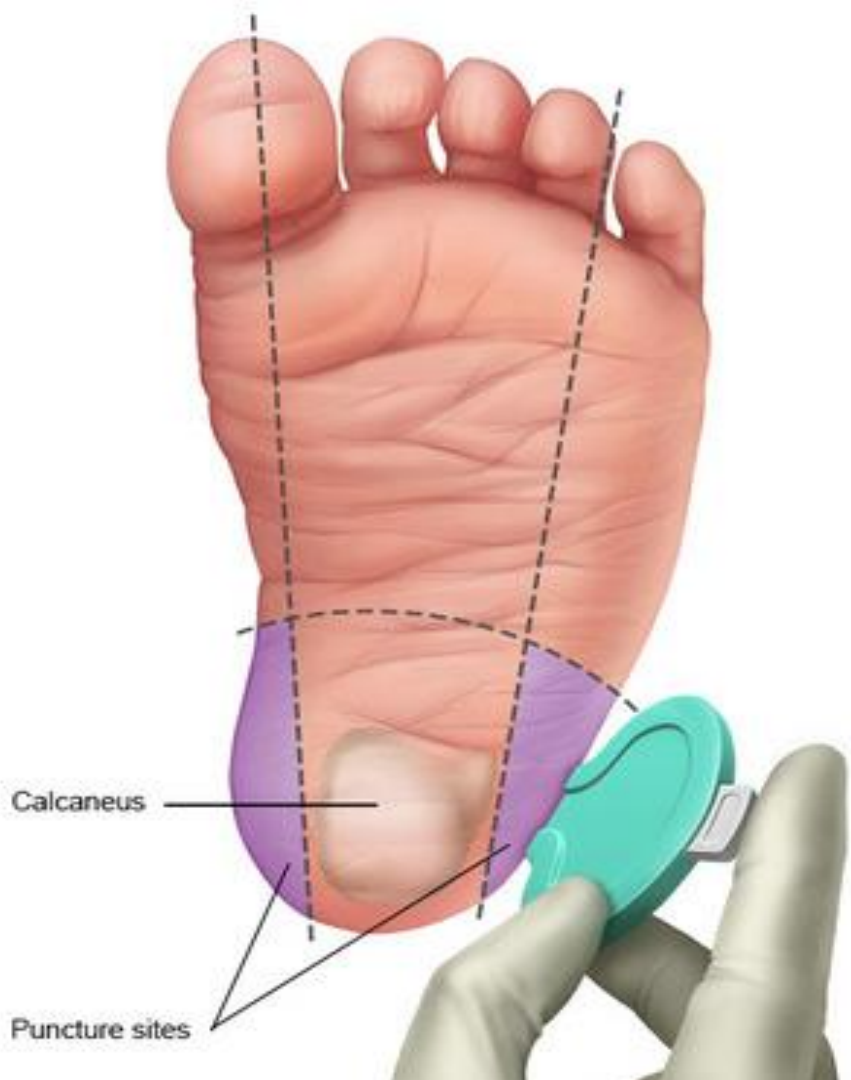
4- Using a sterile blood safety lancet, puncture the side of the heel in the appropriate regions.

5- Wipe away the first drop of blood with a piece of clean, dry cotton gauze. Since newborns do not often bleed immediately, use gentle pressure to produce a rounded drop of blood. Do not use excessive pressure because the blood may become diluted with tissue fluid.

6- Fill the required microtainer(s) as needed.

7- When finished, elevate the heel, place a piece of clean, dry cotton on the puncture site, and hold it in place until the bleeding has stopped.

8- Dispose of contaminated materials in appropriate waste receptacles.


Calcaneus
Puncture sites

Blood Sample Centrifugation

1. It is recommended that serum be separated as soon as possible, with a maximum time limit of 2 hours from the time of collection.
2. Complete gel barrier formation (gel barrier tubes) is time, temperature and G-force dependent.
3. In general, for a horizontal, **swing-bucket centrifuge**, the recommended spin time is **10 minutes**. For a **fixed-angle centrifuge**, the recommended spin time is **15 minutes**.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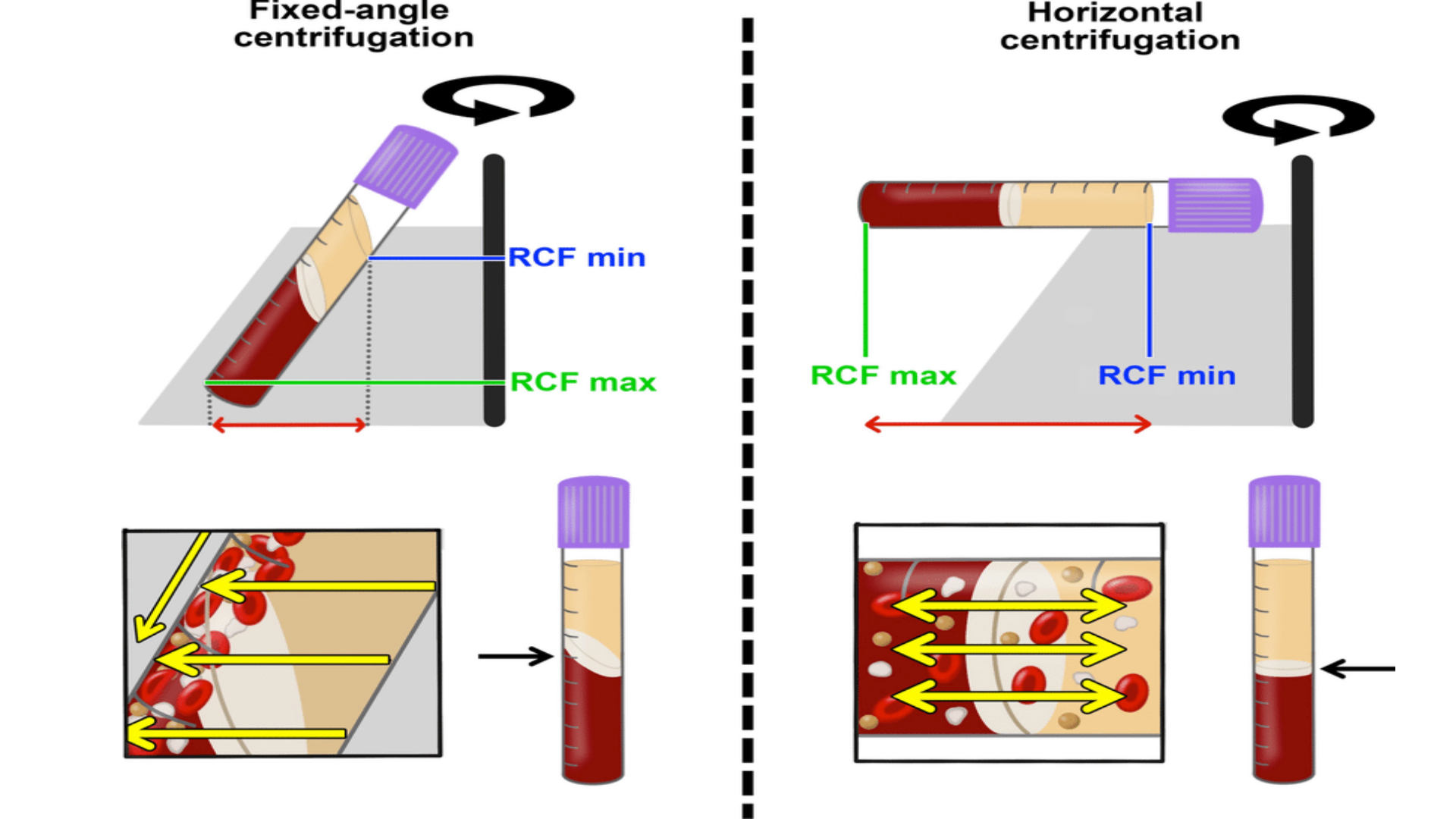
一次性使用
真空采血
分离胶/促凝剂
5 ml


Fixed-angle centrifugation
RCF min
RCF max
Horizontal centrifugation
RCF max
RCF min

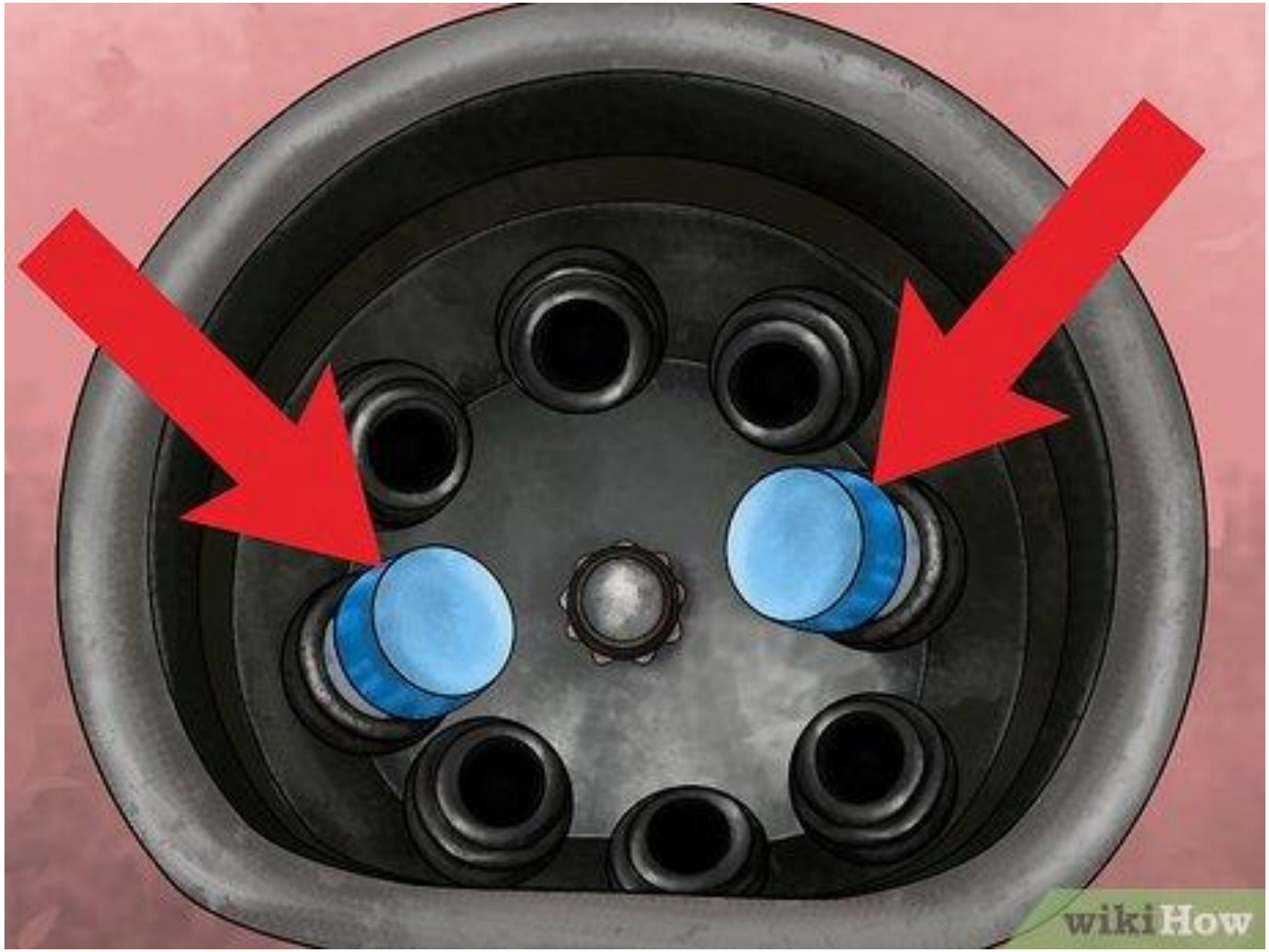
NOTE:

-Tubes should remain closed at all times during the centrifugation process.

- Place the closed tubes in the centrifuge as a “balanced load” noting the following:

A. Opposing tube holders must be empty or loaded with equally weighted samples (tubes of the same size and equal in fill).

B. If an odd number of samples is to be spun, fill a tube with water to match the weight of the unpaired sample and place it across from this sample.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