



# Arm Preparation Skill Block

## Prerequisites

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Before beginning this Skill Block, you must have successfully completed:

- None

## Objectives

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Upon completion of this Skill Block, you will be able to:

- **SELECT** an appropriate vein for phlebotomy.
- **PERFORM** Arm Preparation.

## Resources

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- Arm Preparation SOP XX
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# Introduction

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The AABB Standards state:

Protection Against Contamination: The venipuncture site shall be prepared so as to minimize the risk of bacterial contamination.

The Code of Federal Regulations (CFRs) state:

Prevention of Contamination of the Blood: The skin of the donor at the site of phlebotomy shall be prepared thoroughly and carefully by a method that gives maximum assurance of a sterile container of blood. The blood shall be collected by aseptic methods in a **sterile** container.

## Glossary

- *Aseptic* - Free of pathogenic microorganisms; protecting against infection by pathogenic microorganisms.
- *Pathogenic* - Capable of causing disease; originating or producing disease.
- *Sterile* - Free of all living organisms.

Preparation of the skin prior to phlebotomy is important to meeting the requirements stated above. This process is performed after the Vital Signs.



There are two sections to this Skill Block, Vein Selection and Arm Preparation. Both of these steps are important to perform properly before venipuncture.

## Vein Selection

Choosing the right vein is essential for a good donation. It helps ensure a quality product as well as a positive experience for the donor.

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A basic understanding of the mechanics of the circulatory system will aid you in proper vein selection. The following is a very brief description:

The heart is the organ, which pumps blood throughout the body. Blood is pumped from the heart through blood vessels called arteries. The arteries divide into smaller vessels called arterioles and then into capillaries. From the capillaries, the blood begins its return back to the heart through blood vessels called veins. Once the blood returns, it is first pumped to the lungs where it is enriched with oxygen. Then the cycle through the heart begins all over again.

Because the veins receive the blood after it has passed through both the arteries and capillaries, there is not much force behind it. This calls for the veins having valves. Muscular contractions, surrounding our veins, aids the veins in returning the blood back to the heart. Muscle contractions "milk" the veins and force the valves to open and allow the blood through (closing and opening the fist during the donation process causes muscle contractions in the lower arm). The valves then close again, preventing any backflow. These valves within the veins are found intermittently. If the needle is placed near a valve, it may slow down or even stop the flow of blood into the tubing.



Veins are used to collect blood and blood components. Veins have considerably thinner and less elastic walls than those of arteries. This can lead to some "blood flow" problems and collapsing veins. Before selecting a vein for venipuncture, there are factors to consider:

### 1) Size and strength of the vein.

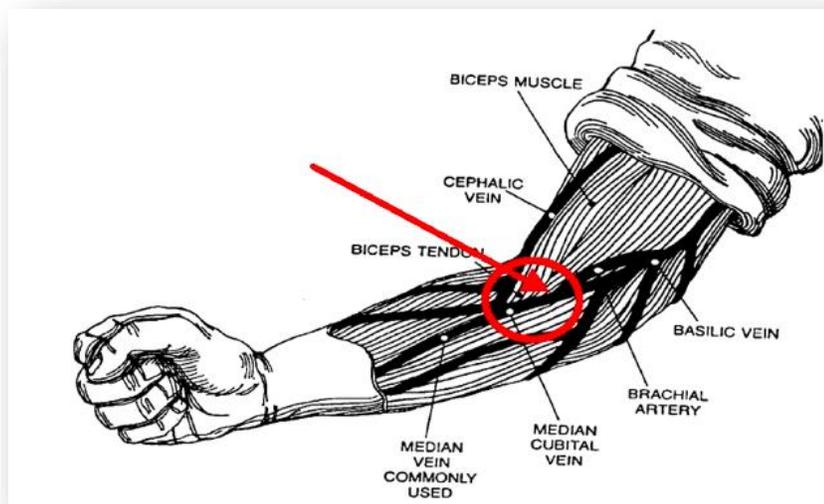
Veins need to be large enough to accept the needle properly. It is important that the needle be centered within the vein walls. If the bevel or opening of the needle ends up against the wall of the vein, the flow of blood may be slowed or totally obstructed. When palpated, the vein should feel relatively smooth, pliable, resilient and springy.

### 2) Location of the vein.

Veins should be used within the **antecubital** area. If possible, try to locate a vein that will not roll easily.

### 3) Direction of the vein.

Veins used for venipuncture should be straight so that the needle can be easily aligned with the vein.



## Glossary

- *Antecubital* - In front of the elbow, at the bend of the elbow. Usual site for blood collection.
- *Venipuncture* - Puncture of a vein with a needle.
- *Pathogenic* - Capable of causing disease; originating or producing disease.
- *Sterile* - Free of all living organisms.

## Helpful Hints:

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- Ensure the arm is free of lesions.
  - When selecting a vein, if you don't immediately see & feel the right one, use a tourniquet and palpate the entire antecubital area. While feeling with a finger on one hand, use the other hand to gently rotate the donor's hand. Sometimes the slight change of hand position will make a vein more apparent and it could lie straighter and closer to the surface.
  - Select the best vein. Make your decision based on the most suitable vein, even if the donor suggests or requests a vein or specific arm. If necessary, ask the donor if he or she minds if you use the other arm.
  - Make sure the arm is placed on the arm rest comfortably for the donor, and that the position is perfect for you to do the phlebotomy.
  - Mentally visualize the vein, the diameter, the direction, how deep it is, the point of entry and where the bevel should end up.
  - Avoid excessive scar tissue and pitting. These areas may cause veins to be hard and roll away from the needle pressure. These areas also are difficult to disinfect, risking bacterial contamination.
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# JOB AID

## Vein Selection

**Purpose:** To select the best vein available for venipuncture.

**When:** Before beginning phlebotomy.

**Materials:** Tourniquet or blood pressure cuff.

ACTION	NOTES
1. Apply a tourniquet or blood pressure cuff using approximately 60 mm of pressure, approximately 2-4 " above the antecubital area so venous flow but not arterial flow is restricted and the vein is distended.	Restricting the flow of blood will cause pooling of blood to fill the veins, making the veins easier to locate.
2. <b>Palpate</b> and look for the appropriate vein in the antecubital area of either arm.	An appropriate vein should be large enough to permit the diameter of the needle. The skin must be free of lesions. When palpated, the vein should feel relatively smooth, pliable, resilient and springy.
3. Choose a suitable vein.	Proper vein selection will allow good blood flow and less discomfort with needle placement. Avoid areas of scarring or pitting.

**Check your work...** Your work is done as expected, when you:

- Determine which arm is to be used.
  - Locate a suitable vein to use.
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# Practice

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## Activities and Exercises for Vein Selection

**Observe** your trainer demonstrating how to identify and select a vein.

*Trainer Note: Follow the Process Demonstration Model.*

**Practice** identifying and selecting veins for donation a minimum of 5 times with your trainer present to assist you and answer any questions.

### Arm Preparation



Before performing a phlebotomy, the arm must be prepared to:

- Prevent contamination of blood products
- Protect the donor from transfer of bacteria into deep tissue
- Reduce the bacteria on the skin surrounding the venipuncture site

Try to avoid areas of excessive pitting and scarring as these areas are difficult to disinfect versus a "clear" area of skin.

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## Important!

**There is no way to STERILIZE the skin, but the Arm Prep will render the skin ASEPTICALLY clean. This is the most important step in the collection process for protecting against bacterial contamination.**

An aseptic arm scrub is the **ONLY** protection against bacterial contamination of the blood we collect. Proper technique is critical to the safety of the blood supply.

## Read SOP XXX Arm Preparation

What is an "Aseptic Technique"?

It is a set of practices designed to provide a clean and safe environment for the procedure to be performed. In blood collection, these practices include:

- Preparation of the phlebotomy site
- Proper handling of the collection set, scrub materials and anything else in the phlebotomy area
- Wearing appropriate attire (gloves, gowns, etc.)
- Hand washing

In conjunction, all of these practices will help assure the phlebotomy site will be free from contamination from microorganisms that could cause infection.

Specifically, how do we apply aseptic techniques to the arm scrub?

- Wash your hands prior to performing the arm scrub.
- Open the scrub package and remove the sponge using the handle. Don't "dig" it out of the package.
- Do not touch anything else while you are performing the scrub.
- If items fall on the floor, leave them there until you can wash your hands after picking up the item.
- Have all of your supplies immediately available to avoid delays.
- Do not touch the scrubbed area.
- Allow the scrub area to dry - do not fan or blow on the area.



**Important:** Phlebotomy must immediately follow arm preparation with no other actions in between. Any other act such as moving donor to another chair, getting another container, re-palpating, etc., will require a rescrub.

# JOB AID

## Arm Preparation

**Purpose:** To render the venipuncture area aseptically clean.

**When:** Prior to a phlebotomy and anytime the prepped area has been contaminated prior to the venipuncture.

**Materials:** ChloraPrep One-Step 1.5mL FREP applicator.

ACTION	NOTES
1. Open Frepp package.	Fold corner and peel wrapper. Be careful not to touch contents.
2. Remove the sterile Frepp using aseptic technique and hold the center of the handle with the foam surface down..	Be careful not to touch the sponge.
3. Pinch once in the middle to break the ampoule in the handle.	You will hear a click.
4. Depress the sponge once or twice on the venipuncture site to saturate the sponge.	Ensure the sponge is well saturated before beginning the scrub.
5. Scrub the venipuncture for at least 30 seconds using a back & forth and, up & down motion.	<ul style="list-style-type: none"><li>• The site must be at least 3 inches in diameter.</li><li>• Time the scrub with a watch or clock that displays seconds.</li></ul>
6. Allow the arm to air dry for at least 30 seconds prior to performing venipuncture.	

**Check your work...** Your work is done as expected, when you:

- You do not touch the surface of the FREPP.
  - You scrub a 3-inch diameter of the antecubital area for at least 30 seconds.
  - You recognize events which require re-scrubbing of the area.
  - You re-scrub the area if necessary
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# Practice

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## Activities and Exercises for Arm Preparation

**Observe** your trainer demonstrating the Arm Prep techniques 3 times.

*Trainer Note: Follow the Process Demonstration Model.*

**Complete** the following questions:

1. How long is the venipuncture site scrubbed?
2. Why is the venipuncture area prepared prior to needle insertion?
3. How large an area is covered when scrubbing the skin?
4. Where should you start scrubbing?
  - a. The center point of the venipuncture site
  - b. The outer most point of the venipuncture site
  - c. Anywhere
5. Choose the best method for the scrub?
  - a. Scrub vigorously back & forth and, up & down
  - b. Scrub in one direction only
  - c. Scrub in circles

**Practice** the Arm Prep procedure as demonstrated by your trainer a minimum of 5 times. Take sufficient time to become comfortable with the task.

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# SKILL CHECK



Given the SOP and the required resources, you will perform the Skin Preparation procedure 3 times with 100% accuracy. Your trainer will observe you and evaluate your success based on the following criteria:

- You locate an appropriate vein for venipuncture.
  - You scrub the appropriate diameter of the arm.
  - You scrub the arm for 30 seconds.
  - You do not touch the area after the venipuncture site is cleaned.
  - You demonstrate appropriate procedure in the event of a delay after the arm is scrubbed.
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