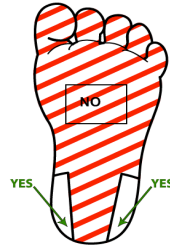


OVERVIEW OF HEEL STICKS



BLOOD COLLECTION ON BABIES:

The recommended location for blood collection on a newborn baby or infant is the heel.

Prewarming the infant's heel (42 C for 3 to 5 minutes) is important to obtain capillary blood gas samples and warming also greatly increases the flow of blood for collection of other specimens. However, do not use too high a temperature warmer, because baby's skin is thin and susceptible to thermal injury.

Clean the site to be punctured with an alcohol sponge. Dry the cleaned area with a dry cotton sponge. Hold the baby's foot firmly to avoid sudden movement.

Using a sterile blood lancet, puncture the side of the heel in the appropriate regions shown above in green. Do not use the central portion of the heel because you might injure the underlying bone, which is close to the skin surface. Do not use a previous puncture site. Make the cut across the heelprint lines so that a drop of blood can well up and not run down along the lines.

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

Fill the capillary tube(s) or micro collection device(s) as needed.

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.

Be sure to dispose of the lancet in the appropriate sharps container. Dispose of contaminated materials in appropriate waste receptacles. Remove your gloves and wash your hands.

Precautions When Selecting a Puncture Site on the Heel

The puncture should not be done in a previous puncture site because of the possibility of infection. Do not do punctures in the central arch area of the foot. Puncture in this area may result in damage to nerves, tendons, and cartilage and offers no advantage over a heel puncture.

Do not puncture deeper than 2.0 mm.

Do not puncture through previous puncture sites.

Do not puncture the area between the imaginary boundaries.

Do not puncture the posterior curvature of the heel.

Do not puncture in the area of the arch.

Do not puncture areas of the foot other than the heel.

HEELSTICK PROCEDURE STEP-BY-STEP

Heel sticks are appropriate for infants less than six months of age or less than 20 pounds.

Warm the site using an appropriate warming device for three to five minutes. (Heel warmers can be used for this purpose) Warm cloths can also be used taking care to avoid extreme temperatures that could injure the patient.

Place gloves on hands.

Disinfect the site using a 70% alcohol pad or comparable disinfectant. The site must be allowed to air dry to provide effective disinfection and to prevent possible hemolysis by residual alcohol.

Perform the puncture: Hold the finger or heel with a moderately firm grip, placing your hand against a support if possible to prevent movement. Firmly puncture the skin. Do not pull the lancet away from the puncture site while depressing the trigger mechanism.

Discard lancet into an appropriate sharps container.

Collect the specimen: Wipe away the first drop of blood with a cotton ball or gauze as this drop may contain an excess of tissue fluid, which could cause erroneous test results.

Position a collection container beneath the collection site.

Blood should be freely flowing from the puncture site as a result of firm pressure and should not be obtained by excessive squeezing.

The most satisfactory blood flow is obtained by alternately applying and releasing pressure to the area.

Avoid touching the puncture site and scraping the collection device against the skin, as this will produce specimen contamination and hemolysis.

The order of draw is important because of the tendency of platelets to accumulate at the site of a wound.

Therefore, tests for the evaluation of platelets, such as platelet count and CBC, must be collected first.

Tubes should be filled to the level indicated on the tube.

Work quickly to minimize the chance of microclots forming in the tube. (If enough blood is not obtained from the initial puncture, the process should be started over to obtain more blood.)

Mix each additive collection device by gently tapping and inverting it.

It is a good idea to mix anticoagulant tubes by a gentle “thumping” action after each drop falls into the tube.

Place clean gauze or a cotton ball on the puncture site and apply slight pressure.

Instruct the patient (or guardian) to hold slight pressure on the gauze or cotton ball over the puncture site.

Label the specimen with correct information per policy, preferably with a computer-generated label. (Name and Date of Birth of the patient must be included) All specimens must be labeled in the presence of the patient, remembering that the Identification process is not complete until the specimen is labeled properly, rechecking all information.

Check the puncture site to assure that it has stopped bleeding.

Place a bandage over the puncture site.

Transport the specimen to the appropriate area for testing as soon as possible.

The Need for Metabolic Testing on Newborns

Many state governments in the United States mandate that all newborns be tested for metabolic disorders very soon after birth. This required testing is used to determine if the infant has a metabolic disorder that could adversely affect a child's development. If discovered early, many of the effects of the metabolic disorder can be alleviated or averted.

Not every state tests or screens for the same disorders, so the phlebotomist must be certain to understand the requirements for the state in which they reside. There is a movement to standardize testing throughout the United States.

Typically, the method used to screen for the presence of newborn metabolic disorders is collection of capillary blood on a filter paper card. It is imperative that the phlebotomist follows the very specific directions for the collection of these samples. If a specimen is submitted to the state for testing and deemed unacceptable, the specimen would have to be re-collected. The infant would then have to be subjected to a second invasive puncture procedure, causing stress and trauma to the infant as well as the parents. More importantly, the need to obtain a second specimen can also cause a delay in treatment.



Capillary Blood Collection for Metabolic Testing

The collection of these specimens requires the same attention to detail as with any phlebotomy procedure.

Gather all necessary equipment

Be certain to choose a device that punctures the heel to a depth appropriate to the size of the infant. Only use the filter cards provided by your state to collect the specimen. These cards are calibrated to the exact specifications needed for testing of metabolic disorders. An alternate or homemade card must not be used.

Put on all necessary personal protective equipment

Gloves are always required. Gowns and eye protection may also be required.

Positively identify the patient

Use two identifiers. The infant who is in the nursery should have an identification band attached to the ankle or wrist. In special care nurseries an alternate form of identification may be used. However, a crib card should never be used as a form of identification. Follow the practice for your facility.

Position the infant

Be certain that the heel can be easily accessed. Follow all nursery requirements that apply to safe handling of newborns.

Warm the heel using an approved warming device

Clean the site with alcohol or the approved disinfectant.

Allow the site to air dry before proceeding with collection of the specimen.

Grasp the heel firmly but not tightly, activate the puncture device, wipe away the first drop of blood, and begin collection of the specimen.

Allow the blood to wick onto the card. Completely saturate the circle with one continuous drop of blood. Avoid touching the card to the skin. Apply the blood only to one side of the card. Do not layer the blood by applying a second drop on top of the first.

Repeat the procedure to completely fill each circle on the card.

Each circle should be completely and uniformly saturated as shown in the bottom image on the right. Follow the policy of your institution or state to determine how many circles must be completely filled.

Apply pressure to the puncture site using a sterile gauze

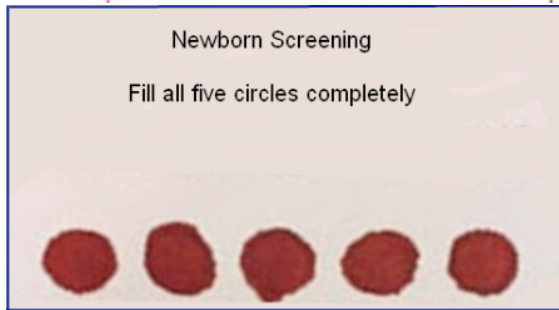
Gently raising the infant's leg above the level of the heart will also aid in clotting the puncture site. Bandage according to site-specific policy.

NEWBORN SCREENING

LAST NAME	MR. <input type="checkbox"/> MRS. <input type="checkbox"/> MS. <input type="checkbox"/> DR. <input type="checkbox"/>
FIRST NAME	SEX: <input type="checkbox"/> Male <input type="checkbox"/> Female
DOB	HT: <input type="checkbox"/> 10 <input type="checkbox"/> 11 <input type="checkbox"/> 12 <input type="checkbox"/> 13 <input type="checkbox"/> 14 <input type="checkbox"/> 15 <input type="checkbox"/> 16 <input type="checkbox"/> 17 <input type="checkbox"/> 18 <input type="checkbox"/> 19 <input type="checkbox"/> 20 <input type="checkbox"/> 21 <input type="checkbox"/> 22 <input type="checkbox"/> 23 <input type="checkbox"/> 24 <input type="checkbox"/> 25 <input type="checkbox"/> 26 <input type="checkbox"/> 27 <input type="checkbox"/> 28 <input type="checkbox"/> 29 <input type="checkbox"/> 30 <input type="checkbox"/> 31 <input type="checkbox"/> 32 <input type="checkbox"/> 33 <input type="checkbox"/> 34 <input type="checkbox"/> 35 <input type="checkbox"/> 36 <input type="checkbox"/> 37 <input type="checkbox"/> 38 <input type="checkbox"/> 39 <input type="checkbox"/> 40
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PHYSICIAN	SPECIAL ORGANIZATION
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CLINIC	LABORATORY <input type="checkbox"/> OTHER <input type="checkbox"/>

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THESE CIRCLES COMPLETELY FILLED WITH BLOOD




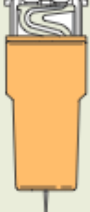



Let Gravity Be Your Friend



To encourage the flow of blood to the hand when performing a capillary collection, allow gravity to work in your favor!

Position yourself so that you are holding the patient's hand in such a manner that the finger is pointed downward. Gravity will draw the blood to the fingertip and allow the procedure to be completed more efficiently.

				
<p>Blue Blade Depth: 2.0mm Blade Width: 1.5mm Blood Volume: High/Medium</p>	<p>Green Blade Depth: 1.5mm Blade Width: 1.5mm Blood Volume: Medium</p>	<p>Pink Blade Depth: 1.0mm Blade Width: 1.5mm Blood Volume: Low</p>	<p>Orange Needle Depth: 2.25mm Needle Gauge: 23g Blood Volume: Single Drop</p>	<p>Purple Needle Depth: 1.25mm Needle Gauge: 28g Blood Volume: Single Drop</p>

