

Specimen Collection

Blood Collection-Venipuncture

Specimen Collection: Obtain blood specimens from the patient through venipuncture technique. All of the specimen tubes should be labeled with the patient's full, legal first and last name and a second unique identifier. Send a completed request form with the blood specimen. To draw blood with the venipuncture technique, follow the procedure below:

- Have the patient assume a sitting or supine position. Position the arm on a steady support on the bed/chair arm so as to make the veins easily accessible. Never attempt a venipuncture on a standing patient.
 - Wash hands then wear protective gloves.
 - Apply tourniquet approximately 3 to 4 inches above the possible venipuncture site. **Do not leave tourniquet on for more than 1 minute before start of draw.** Place the tourniquet over clothing when possible, to decrease the chance for discomfort and pinching. It will also be more visible in the event it is not removed promptly. If necessary to draw from an arm with intravenous (IV) running, place tourniquet below the IV site and draw from below the IV site.
 - If venous access cannot be accomplished within 1 minute of tourniquet application, release tourniquet to prevent hemoconcentration and wait 2 full minutes before retightening.
 - Instruct the patient to clench the fist. **Discourage pumping of the fist as such activity can elevate levels of potassium and ionized calcium in the bloodstream.**
 - Palpate skin to select acceptable venipuncture site. Acceptable sites for venipuncture include, in order of preference:
 - Antecubital area:
 - Median cubital vein - first choice (large, well anchored, least painful, least likely to bruise)
 - Cephalic vein - second choice (not as well anchored and more painful when punctured than the median cubital vein)
 - Basilic vein - third choice - not well anchored, and lies near the brachial artery and median nerve, which could be accidentally punctured
- **Attempt to locate the median cubital vein on either arm before considering alternative veins. Consider hand or wrist veins over the basilic vein, due to potential for hitting the nerve or artery underlying the basilic vein.**

When antecubital fossa veins are unsuitable or unavailable, the dorsal hand or wrist veins may be used. These veins are not as well anchored and have smaller diameter, so a smaller gauge needle and less vacuum may be needed, ie, syringe or butterfly apparatus. Veins on the underside of the wrist must not be used.

Foot veins should be avoided. If no other site is available, written approval must be obtained from the physician before drawing from the foot.

- Select appropriate needle assembly. Use VACUTAINER® system for most antecubital veins. Use syringes or butterfly sets for fragile hand or foot veins, very obscure arm veins, or for uncooperative patients.
- Cleanse venipuncture site with alcohol wipe using a circular motion starting at venipuncture site and moving outward. **Allow alcohol to dry. Do not repalpate the site after cleansing.**
- Anchor the vein below the venipuncture site with the free hand. Insert the needle, bevel up, quickly and smoothly into the vein at a 15° to 30° angle to the skin. If blood flow is not established, acceptable repositioning of the needle includes:
 - Pull the needle back a bit (if it has penetrated too far into the vein).
 - Advance it farther into the vein (if it has not penetrated for enough).
 - Rotate the needle 1/2 turn.
 - One calculated, lateral needle relocation is allowed, unless accessing the basilic vein. (No lateral redirection should be attempted when nerves and arteries are in close proximity).
 - Manipulation, other than that mentioned earlier, is considered probing, which is not recommended.
 - If the patient feels a sharp, tingling pain which may shoot up and down the arm, immediately end the venipuncture, as continuation risks permanent injury to the nerve.
- Collect specimen(s):
 - For VACUTAINER® system:
 - Push tube to the end of the holder, being careful not to push the needle further into the arm.
 - Maintain the tubes in a downward position, so that the blood and any tube additive does not touch the needle.

- When vacuum is exhausted, blood will stop flowing into the tube.
 - If more than 1 tube is required, remove the filled tube and place the next tube on holder continuing until all tubes are filled.
 - Immediately after drawing each tube, mix the blood gently and thoroughly by inverting the tube as recommended by the tube manufacturer:
 - Blue-top tubes, invert 3 to 4 times
 - Red and gold-top tubes, invert 5 times
 - All other additive tubes, invert 8 to 10 times
- Note:** Do not shake as this can cause hemolysis.

—The acceptable **order of draw** is:

- Dark Blue (metal-free, no additive, red label) or blood culture (see note below)
- Blue-top (sodium citrate) (see note below)
- Gold or red-top tubes with or without clot activator or gel barrier
- Green-top (heparin) with or without gel
- Lavender-top (EDTA)
- Pink-top (EDTA), white-top (EDTA with gel), or dark blue-top (metal-free, EDTA) (see note below)
- Grey-top (potassium oxalate/sodium fluoride)
- Yellow-top (ACD) no gel
- Dark blue FDP tube

The order that the tubes are drawn can affect laboratory test results. To eliminate this effect, please follow the correct order when drawing multiple tubes from a patient:

- Blood culture bottles must always be drawn first. Blood culture and metal-free tubes cannot be drawn during the same venipuncture, because trace metals from the blood culture septum will contaminate the metal-free tube.
- Light blue-top (sodium citrate) tubes must be full to the top paper label edge to ensure proper ratio of sodium citrate anticoagulant to blood. This is essential for test(s) accuracy. Insufficiently filled tubes will be rejected.
- Metal-free tubes must be drawn prior to other tubes. To maintain order of draw it may be necessary to do a separate venipuncture when drawing a metal-free tube containing EDTA (dark blue-top [lavender] label).

—For syringe system:

- Gently pull back on plunger until required amount is withdrawn.
- Release tourniquet
- Withdraw last tube (if using VACUTAINER® system), place a clean gauze over the site (no pressure), withdraw needle, then apply pressure to the site. Apply pressure to the extended arm (do not bend).
- If a syringe was used, remove safety needle; attach safety transfer device; and insert tube in holder to allow vacuum to draw required amount of blood into tube. Do not force blood into the tube as hemolysis may result. If blood cultures are ordered, fill culture vials BEFORE other tubes. Fill tubes in the acceptable draw order listed earlier. Mix all tubes as noted earlier.
- Label each tube. Use computer labels, if available. Labeling should be placed on tube so that when the cork is held in the left hand, labeling can be read from left to right.

Minimum information required is first and last legal name and another unique identifier (such as date of birth) and collection date and time.
- Blood Bank Specimens:

Due to the importance of proper patient identification, all Blood Bank specimens must have a legible, permanent ink label. The label must include the following information:

 - Patient's legal name.
 - A second identifier, such as date of birth, patient number, etc.
 - Date and time of the specimen being drawn.
 - Initials of the person who drew the specimen.

Specimens that arrive in the Blood Bank without the proper labeling must be redrawn. Only properly labeled specimens will be tested.
- For tubes requiring immediate processing, centrifuge or ice immediately.
- Examine puncture site; check to be sure bleeding has ceased, and apply bandage. If excessive bleeding occurs, continue to apply pressure until bleeding stops, then tightly bandage. Inform nurse if bleeding does not completely stop.
- Safely dispose of needle and/or syringe in SHARPS® container. All other contaminated apparatus may be disposed in regular waste. If saturated with blood or body fluids, dispose in medical waste.

Notes:

- Never perform venipuncture on the following sites:
 - Above an IV (contaminates and/or dilutes blood specimen)
 - Hematomas
 - Skin lesions, warts, moles, or ganglia
 - Edematous areas
 - From an arm on the side a mastectomy was performed, without physician permission
 - Extensively scarred areas
 - From an arm in which a canula, fistula, or vascular graft has been placed
 - From an arm in which blood is being infused
 - From a foot without prior clinician written approval
- A venipuncture site in the vicinity of an IV should always be BELOW the IV or from another appendage. If the only site is above the IV, call the main laboratory at 231-935-6100 for instructions on how to collect the specimen.
- Avoid inserting needle completely through vein as hematoma may result.
- Avoid accidental arterial puncture. To assure selection of a venous site, always check vein to make sure there is no arterial pulsation.
- Continued bleeding from venipuncture site may occur in patients with hemorrhagic tendency. Continue to apply pressure until bleeding stops, then tape lightly.
- Occasional syncope (fainting, nausea, dizziness) will occur. The appropriate response is:
 - Discontinue venipuncture.
 - Lower the patient's head onto his knees or the drawing chair protective arm. Make certain the patient will not fall from the chair.
 - A cool wet cloth or towel may be applied to the face or neck as the patient revives.
 - If the reaction is severe (ie, failure to revive after 30 seconds or is accompanied by convulsions or seizures) contact physician immediately or call 911.
 - Do not use ammonia inhalants because asthmatic patients may develop respiratory distress.

CLEAN VOIDED MID-STREAM URINE COLLECTION

FEMALE

Please follow the instructions carefully. This will help the laboratory provide you and your doctor with accurate test results. Thank you for your cooperation.

PREPARATION:

Check urine cup that you were given to make sure that it has your first and last legal name and birthdate on it. Notify the laboratory personnel if the cup is not labeled appropriately.

Wash your hands with soap and water.

Remove the cup lid and place it upside down on the shelf or cabinet next to you. Avoid touching the inside of the cup. If you drop the cup or lid, please take a new one and write your first and last name on it. Notify the laboratory staff and a new label will be printed.

Open 3 towelette packages so that you can easily pull them out as needed. Place the packages so you can reach them easily.

Sit far back on the toilet.

CLEANSING:

Separate the folds of skin around the urinary opening with your fingers. Keep them separated until the urine specimen has been collected.

Be sure to wipe from **FRONT TO BACK** each time.

With the first towelette, wipe once down one side of the urinary opening, then discard towelette.

With the second towelette, wipe down the other side, then discard towelette.

With the third towelette, wipe once down the center, then discard towelette.

Pass a small amount of urine into the toilet and stop. This helps to cleanse the urinary opening.

COLLECTION:

Urinate into the cup. A cup half- filled is preferable, but any amount will be accepted.

Place the lid tightly on the cup and put it in the transfer door in the wall or return it to the laboratory personnel.

CLEAN VOIDED MID-STREAM URINE COLLECTION

MALE

Please carry out the following steps carefully. This will help the laboratory provide you and your doctor with the most accurate test results possible. Thank you for your cooperation.

PREPARATION:

Check the urine cup that you were given to be sure that it has your first and last legal name and birthdate on it. Notify the laboratory personnel if the cup is not labeled appropriately.

Wash your hands with soap and water.

Remove the container lid and place it upside down on the shelf or cabinet next to you. Avoid touching the inside of the cup. If you drop the cup or lid, please take a new one and write your first and last name on it. Notify the laboratory staff and a new label will be printed.

Open one towelette.

Expose the penis and pull back the foreskin (if present).

CLEANSING:

Wipe the area around the urinary opening with the towelette.

Pass a small amount of urine into the toilet and stop. This will cleanse the urinary opening.

COLLECTION:

Urinate into the cup. A cup half-filled is preferable, but any amount will be accepted. Place the lid tightly on the cup and put in the transfer door in the wall or return it to the laboratory personnel.

PATIENT INSTRUCTIONS FOR 24-HOUR URINE COLLECTION

1. It is recommended that you begin the 24-hour urine collection in the morning. Plan to start the collection at a time of day so that the container can be returned the next day within 3 hours of completion and at a time when a hospital outpatient laboratory is open.
2. At the time you choose to start the collection, record the start date and time in the provided space on the container label. Urinate into the toilet and flush, **DO NOT SAVE** this urine in the container.
3. For the next 24 hours, collect all urine and add to the container. Do not urinate directly into the container **if** a preservative has been added. (Some tests require a preservative to be added to the container prior to start of collection. If so, the container will have a label on it stating that a preservative has been added. A clean dry jar or bottle may be used to collect and transfer urine to the container).
4. **ALL urine** is needed for accurate testing. If you fill the container, continue the collection into any clean, dry, leak proof container. Call the laboratory for instructions if you have omitted or spilled any urine (see below for phone numbers).
5. Keep the container cold during the entire collection. (Refrigerate or store in a cooler with ice).
6. Exactly 24 hours after the start time, **urinate and ADD this last urine sample to the container**. Record this end date and time in the provided space on the container label.
7. Print your legal name and birthdate in the provided spaces on the container's label.
8. Deliver the container **with your lab order** to the laboratory within 3 hours of completing the collection. Keep cool during transport.
9. Delivery to a **hospital** outpatient laboratory is preferred. Drop off at other locations (such as physician office or outpatient lab draw stations) will delay delivery of the sample to the hospital laboratory which may delay time sensitive processing and affect test results. If you have questions regarding where or when you can drop off the container, call any MunsonHealthcare hospital laboratory:

Munson Medical Center Lab: 231-935-6100

Munson Community Health Center Lab: 231-935-8470

Paul Oliver Memorial Hospital Lab: 231-352-2204

Kalkaska Memorial Health Center Lab: 231-258-7508

Mercy Hospital Cadillac Lab: 231-876-7295

Mercy Hospital Grayling Lab: 989-348-0352

West Shore Medical Center Lab: 231-398-1153

See next page for special instructions for these select 24-hour urine tests:

Creatinine clearance, 5-HIAA, Arsenic, Lead, Cadmium, Mercury, Aminolevulinic acid (ALA), Homovanillic acid (HVA), Porphyrin, Inherited Conjugated Hyperbilirubinemia

SPECIAL INSTRUCTIONS FOR SELECT 24-HOUR URINE TESTS

For the tests listed below, follow these additional special instructions:

CREATININE CLEARANCE:

This test **requires a blood draw to be done within 24 hours of the urine collection**. Keep this in mind when choosing the time to start your collection. When dropping off your urine collection, you will need to have your blood drawn for a creatinine test if it was not drawn just prior to the start of the collection. Your current height and weight information is also required. **Please write your height and weight on the lab order and container's label**, if it has not already been recorded there by your care provider.

5-HIAA:

Do not eat the following foods for at least 48 hours prior to and during the collection period: Avocados, bananas, butternuts, cantaloupe, dates, eggplant, grapefruit, hickory nuts, honeydew melon, kiwifruit, melons, nuts, pecans, pineapple, plantains, plums, tomatoes and tomato products, or walnuts. Substances in these foods may interfere with this test. Also avoid these medications or medications that contain: L-dopa, acetaminophen (Tylenol), salicylates, (aspirin) and cough syrup containing guaifenesin.

HEAVY METALS SCREEN: (Arsenic, Lead, Cadmium, Mercury)

Do not eat seafood during the 48-hour period prior to start of collection.

If you have had a radiology procedure where contrast media has been administered, the urine collection should not be started for at least 96 hours after that procedure.

Clean, plastic containers with no metal caps or glued inserts must be used for urine collection. Use the container(s) provided to you by the laboratory or your care provider. Urinate directly into that container, rather than using any household containers or utensils. **Do not** collect urine in metal-based containers such as metal urinals or pans. Do not collect urine specimens in the environment in which exposure to these metals is likely to occur. It is also important that dust from clothing not contribute to the specimen contents.

URINE TESTS REQUIRING A PRESERVATIVE DURING COLLECTION:

Homovanillic acid (HVA), Porphyrin, Inherited Conjugated Hyperbilirubinemia.

Each of these 3 tests requires a specific preservative (a small amount of powder or liquid) to be added to the collection container PRIOR to the start of the collection.

Caution should be taken not to come into contact with the preservative, or to allow the contents to spill out of the container. It is recommended that you urinate into another clean, dry container and add this urine to the jug, rather than urinating directly into the container.

If the provided container (with preservative added) becomes full prior to the end of the collection period, you can continue the collection as follows: Mix the contents of the filled container, and pour half of its contents into another clean, dry container. Add any additional urine collected to the first container.