

Specimen Collection and Preparation

Laboratory test results depend on the quality of the specimen submitted. All specimens and requisition forms must be properly labeled with the name of the patient, collection date, and the origin (source) of the specimen as applicable. The Laboratories require that all specimens received for testing must be correctly and adequately labeled to assure positive patient identification. Specimens must have **2** person-specific identifiers on the patient label per hospital and Joint Commission requirements. A primary source container may be in the form of a specimen collection tube, cup, syringe, swab, slide or other form of specimen storage. The criteria for acceptable specimen identifiers used in labeling include but are not limited to: patient name, date of birth, hospital number, social security number, requisition number, accession number, or a unique random number. A room number is not an acceptable identifier. Specimens are considered mislabeled when there is a mismatch between the person-specific identifiers on the specimen and information accompanying the specimen (e.g. computer system, requisition form, additional paperwork).

When insufficient or inconsistent identification is submitted, the Laboratories will recommend that a new specimen be obtained, if feasible. If there is any question regarding the type of specimen that should be collected, it is important to contact the Laboratory to clarify the order and specimen requirements.

Blood Collection

Most laboratory tests are performed on anti-coagulated whole blood, plasma, or serum. In general, specimens should be refrigerated until placed in the courier box for transport to the laboratory. Please see the [test catalog](#) for specific requirements.

- *Plasma*: Draw a sufficient amount of blood with appropriate anticoagulant to yield sufficient plasma volume for testing. Gently mix blood collection tube by inverting 6 to 10 times immediately after draw. If required, separate plasma from cells by centrifugation within 20 to 30 minutes.
- *Serum*: Draw a sufficient amount of blood to yield sufficient serum volume for testing. Allow blood to clot at ambient temperature; and then, separate serum from clot by centrifugation within 20 to 30 minutes. Caution: avoid hemolysis.
- *Whole Blood*: Draw a sufficient amount of blood with indicated anticoagulant. Gently mix blood collection tube by inverting 6 to 10 times immediately after draw.

Blood Collection in Special Situations:

- *Indwelling lines or VADs (vascular access device)*: Examine the components of the blood collection system to ensure compatibility of devices and to avoid air leaks. Air leaks may cause hemolysis and incorrect draw volumes. All draws from lines that have been previously flushed with heparin should be avoided. If drawing blood from a VAD, flush with 5mL of saline and then discard the first 5mL of blood (or six dead space volumes) for coagulation tests or discard 2 dead space volumes for non- coagulation testing.
- *Intravenous Fluids*: When an intravenous fluid or blood product is being administered, blood should not be drawn from that arm if at all possible. Satisfactory samples may be drawn distal to the VAD or from the opposite arm. If drawing from the arm containing the VAD, please ask a responsible caregiver if intravenous infusion can be turned off for at least two minutes before performing venipuncture. In this case, apply the tourniquet between the catheter and the intended venipuncture site, perform venipuncture and then have a responsible caregiver restart the IV infusion.

Specimen Collection Tubes

The following is a list of tubes that are commonly used. After tube has been filled with blood, immediately gently invert tube 6 to 10 times in order to prevent coagulation

- *Green-Top (Sodium Heparin) Tube*: This tube contains sodium heparin and is used to collect heparinized plasma or whole blood needed for several special tests.
- *Grey-Top (Potassium Oxalate/Sodium Fluoride) Tube*: This tube contains potassium oxalate as an anticoagulant and sodium fluoride as a preservative and is used to preserve glucose in whole blood and for some special chemistry tests.
- *Lavender-Top (EDTA) Tube*: This tube contains EDTA as an anticoagulant and is used for most hematology cell counts (eg, CBC).
- *Light Blue-Top (Sodium Citrate) Tube*: This tube contains sodium citrate as an anticoagulant and is used for drawing blood for coagulation studies (eg, PT, PTT, etc.). It is imperative that the tube be completely filled as the proper ratio of blood to anticoagulant is critical for obtaining accurate coagulation test results.
- *Red-Top Tube*: This tube is a plain VACUTAINER® containing no anticoagulant that is used for collecting serum for selected chemistry tests as well as clotted blood for immunohematology testing.
- *Royal Blue-Top Tube*: There are 2 types of royal blue top Monoject® tubes; 1 with the anticoagulant EDTA and the other plain (no additive). These are used for collecting whole blood or serum for trace element analysis. Refer to individual metals in individual test listings to determine tube type necessary.
- *Serum Gel Tube*: This tube contains a clot activator and serum gel separator and is used for various laboratory tests. If frozen serum is required, pour off serum into plastic vial and freeze.
- *Special Collection Tubes*: Some tests require specific tubes for proper analysis. Please contact the laboratory prior to patient draw to obtain correct tubes for metal analysis or other tests as identified in individual test listings
- *Yellow-Top (ACD) Tube*: This tube contains ACD and is used for drawing whole blood for special tests.

Urine Collection

24-Hour Urine Collections—The Laboratories provides 24-hour urine collection containers. Use the following procedure for correct collecting and preparing urine specimens.

- Instruct patient to discard **first-morning** specimen and to record time of voiding.
- Patient should collect all subsequent voided urine for remainder of the day and night.
- Collect **first-morning** specimen on day 2 at same time as noted on day 1.
- Please mix well before aliquoting and provide total volume of 24-hour urine collection.

See “Urine Preservatives” in Special Instructions for multiple collections. Any required urine preservative will be added after the specimen is returned to the lab.

Random Urine Collections—for routine analysis and microscopic evaluation, have the patient void into a clean container. Specimen should be capped, labeled, and refrigerated until courier pickup time. A “clean-catch” or midstream specimen is preferred. Patient should first void a small amount of urine which is discarded. Some of the urine should then be collected in a clean container before voiding is completed. If delays are anticipated in sending specimen to the laboratory, a portion of the specimen should be aliquoted into a grey urine culture transport tube (boric acid) should any culture work also be desired or indicated.