Laboratory test results are dependent on the quality of the specimen submitted. It is important that all specimens and request slips be properly labeled with the patient name and address, date of birth, collection date and time, location and physician name, insurance (name and number if applicable), and the origin (source) of the specimen, when applicable.

If there is any doubt or question regarding the type of specimen that should be collected, it is imperative that Collaborative Laboratory Services, LLC (CLS) be called to clarify the order and specimen requirements.

Blood Collection
Most laboratory tests are performed on anticoagulated whole blood, plasma, or serum. In general, specimens should be refrigerated until transported to the laboratory. Please see our individual test directory section for specific requirements.

- **Plasma**: Draw a sufficient amount of blood with indicated anticoagulant to yield the necessary plasma volume. Gently mix blood collection tube according to specific tube type immediately after draw. If required, separate plasma from cells by centrifugation within 20 to 30 minutes. Caution: avoid hemolysis.

- **Serum**: Draw a sufficient amount of blood to yield necessary serum volume. Allow blood to clot at ambient temperature, and then, separate serum from clot by centrifugation 30 minutes after draw. Caution: avoid hemolysis.

- **Whole Blood**: Draw a sufficient amount of blood with indicated anticoagulant. Gently mix blood collection tube according to specific tube type immediately after draw.

Specimen Collection Tubes Available
The following is a list of tubes for specimen requirements:

- **Green-Top (Lithium Heparin) Tube**: This tube contains lithium heparin—used for collection of heparinized plasma or whole blood for **routine** tests.
  **Note**: After tube has been filled with blood, immediately invert tube 8 to 10 times in order to prevent coagulation.

- **Green-Top (Sodium Heparin) Tube**: This tube contains sodium heparin—used for collection of heparinized plasma or whole blood for special tests.
  **Note**: After tube has been filled with blood, immediately invert tube 8 to 10 times in order to prevent coagulation.

- **Grey-Top (Potassium Oxalate/Sodium Fluoride) Tube**: This tube contains potassium oxalate as an anticoagulant and sodium fluoride as a preservative—used to preserve glucose in whole blood and for some special chemistry tests.
  **Note**: After tube has been filled with blood, immediately invert tube 8 to 10 times in order to prevent coagulation.

- **Lavender-Top (EDTA) Tube**: This tube contains EDTA as an anticoagulant—used for most hematological procedures.
  **Note**: After tube has been filled with blood, immediately invert tube 8 to 10 times in order to prevent coagulation. If short draw tube is used, fill to line.

- **Light Blue-Top (Sodium Citrate) Tube**: This tube contains sodium citrate as an anticoagulant—used for drawing blood for coagulation studies.
  **Note**: It is imperative that tube be completely filled. If short draw tube is used, fill to line. The ratio of blood to anticoagulant is critical for valid prothrombin time results. Immediately after draw, invert tube 3 to 4 times in order to activate anticoagulant.

- **Plasma Gel Tube**: This tube contains a plasma gel separator and lithium heparin—used for various laboratory tests. **Plasma gel tubes may be substituted for the green-top (heparin) tubes except for those tests that specifically state plasma gel tube is not acceptable.**

- **Pink-Top (K$_2$ EDTA) Tube**: This tube contains K$_2$ EDTA as an anticoagulant—used for type and screening. All routine blood bank testing can be done on this tube.
  **Note**: After tube has been filled with blood, immediately invert tube 8 to 10 times in order to prevent coagulation. Tube should be filled completely, but partially filled tubes are acceptable if quantity is sufficient for testing.

- **Red-Top Tube**: This tube is a plain evacuated tube containing no anticoagulant—used for collection of serum for selected chemistry tests as well as clotted blood for immunohematology.
  **Note**: For serum tests, invert tube 5 times: let stand for 30 minutes. Centrifuge for 10 minutes. Pour serum into plastic pour-off tubes.

- **Royal Blue-Top Tube**: There are 3 types of royal blue-top evacuated tubes—One with the anticoagulant EDTA, 1 with the anticoagulant sodium heparin, and 1 plain. These are used in the collection of whole blood or
serum for trace element analysis or for special tests. 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—used for various laboratory tests. **Serum gel tubes may be substituted for red-top tubes except for those tests that specifically state serum gel tube is not acceptable.**
  
  **Note**: Invert tube 5 times to activate clotting; let stand for 30 minutes before centrifuging for 10 minutes. If frozen serum is required, pour off serum into plastic vial and freeze. Do not freeze evacuated tube.

- **Special Collection Tubes**: Some tests require specific tubes for proper analysis. Please contact CLS 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 (solution A or B) as indicated on tube—used for drawing whole blood for special tests. Refer to test which specifies A or B solution.