



---

## WHAT IS HEMOLYSIS?

Hemolysis is the breakdown of red blood cells (RBC's). due to the mishandling of blood samples during routine blood collection and transport .

The accuracy of the test results is dependent on the quality of the specimens. A quality serum for diagnostic testing can be obtained by following best practices during collection, handling, and transporting the samples to the diagnostic laboratory.

How to avoid hemolysis

1. Choose the right gauge needle.
2. Alcohol used for cleansing the venipuncture site should be allowed to dry completely before drawing the blood.
3. One should collect the blood specimen in the correct blood collection tube (serum separator tube(SST) (Tiger top tubes) or red top tubes without anticoagulants).
4. After performing venipuncture and removing the needle, transfer the blood gently down the side of the collection tube
5. Invert the tube gently as recommended by the tube manufacturer.

6. Later, the tube should be placed upright for 15-33 minutes at room temperature until complete clot

Hemolysis can be caused by:

- Shaking the tube too hard.
- Using a needle that is too small.
- Pulling back too hard on a syringe plunger.
- Pushing on a syringe plunger too hard when expelling blood into a collection device.









---

## Blood tubes Collecting

Most blood collection tubes contain an additive that either accelerates clotting of the blood (clot activator) or prevents the blood from clotting (anticoagulant). Some tests require the use of serum, some require plasma, and other tests require anticoagulated whole blood A vacutainer blood collection tube is a sterile glass or plastic test tube with a colored rubber stopper creating a vacuum seal inside of the tube, facilitating the drawing of a predetermined volume of liquid.

Vacutainer tubes may contain additives designed to stabilize and preserve the specimen prior to analytical testing. Tubes are available with a safety-engineered stopper, with a variety of labeling options and draw volumes. The color of the top indicates the additives in the vial

Hemoguard stopper	Tube Content	Determination
	Serum separator tube (SST)	All biochemistry not mentioned elsewhere (1 tube), microbiology (1 tube)
	Heparin	Chromosome studies, lead, amino acids, troponin
	Fluoride/oxalate	Glucose
	EDTA	Full Blood Count (FBC) and ESR, C3/C4, Hemoglobin A1c, Homocysteine, ACTH
	Plain (No additive)	LDH, Ca, Drugs (Phenytoin, Theophylline, Lithium), Endocrine testing (except Thyroid)
	Sodium citrate	Coagulation testing, PT, INR, APTT, D-Dimer, etc...
	ESR	Westergren Sedimentation Rate; requires full draw