

# Specimen Collection, Handling, and Transport

## Factors That Compromise Specimen Integrity/Quality

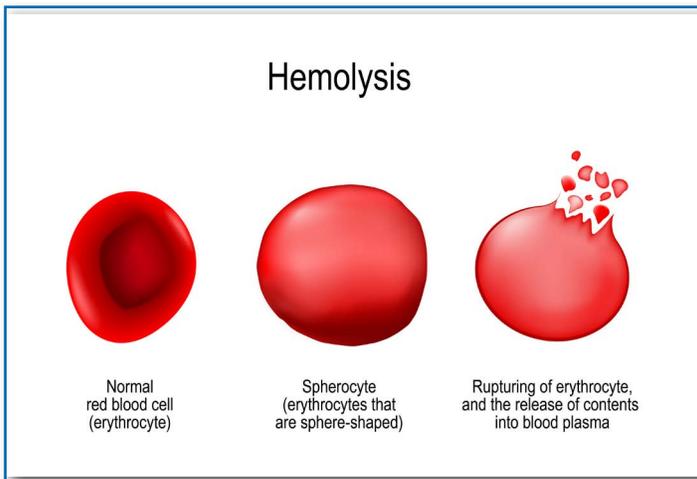
### Hemolysis

Hemolysis occurs when the membrane of red blood cells (erythrocytes) is disrupted, causing hemoglobin and other intracellular components to leak into the serum or plasma. A hemolyzed specimen typically appears light pink to bright red rather than the normal straw colored appearance. Even slight hemolysis can significantly alter certain laboratory results—most notably potassium and lactate dehydrogenase (LDH) levels. Specimens that are moderately or grossly hemolyzed may be rejected.

#### Common Causes of Hemolysis

- Use of a needle that is too small for specimen collection
- Difficult or traumatic venipuncture
- Refrigerating red-top tubes before allowing at least 30 minutes at room temperature for complete clot formation
- Vigorous shaking or improper mixing of tubes
- Exposure to excessive heat or storage in a refrigerator that is too cold

Proper collection technique, gentle inversion, and appropriate storage conditions are essential to maintain specimen integrity and ensure accurate test results.

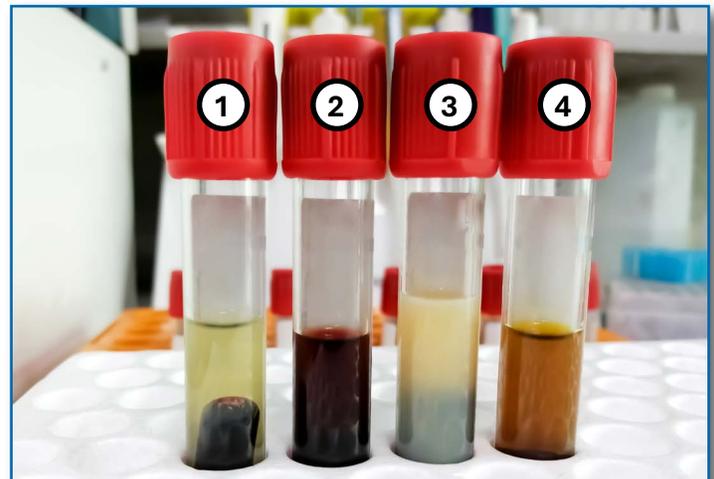


### Hyperbilirubinemia (Icteric Specimens)

Icteric serum or plasma ranges in color from dark to bright yellow rather than the normal straw appearance. Elevated bilirubin levels may interfere with certain laboratory test results. When an icteric specimen is received, an additional specimen may be requested to ensure accurate and diagnostically reliable results.

### Lipemia / Turbidity

Lipemia refers to the presence of excessive lipids (fats) in the blood, which can cause serum or plasma specimens to appear turbid, cloudy, or milky. Moderately to severely lipemic specimens may interfere with or invalidate certain laboratory test results. Lipemia is commonly caused by a recent meal prior to blood collection, though bacterial contamination may also contribute to specimen cloudiness. To reduce the risk of lipemia and ensure accurate results, patients should follow standard fasting guidelines and refrain from eating or drinking anything other than water for 8–12 hours (or up to 12–16 hours, when specified) before specimen collection.



1. Normal 2. Icteric 3. Lipemic 4. Hemolyzed

### Quantity Not Sufficient (QNS)

Each assay requires a minimum specimen volume to ensure accurate testing. If the submitted specimen does not meet the required minimum volume, the test will not be performed.

For serum or plasma specimens, please collect more than the stated minimum requirement—ideally at least 2.5 times the requested volume—to allow for processing and potential repeat testing.

If there is a concern that the specimen volume may be insufficient, please indicate the order of test priority on the requisition.

### Radioisotope Interference

Diagnostic procedures or treatments involving radioactive compounds may interfere with or invalidate radioisotope assay results. When a radioisotope assay is anticipated, specimens should be collected prior to administering radioactive materials to the patient.

### Specimens Collected with Expired Supplies

Please routinely verify that all collection and transport supplies are within their expiration dates. Specimens submitted in expired collection or transport tubes will be rejected by DLO.