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Ensuring Quality Samples: Preventing Hemolysis

What Are Hemolyzed Specimens?

Hemolysis occurs when red blood cells are damaged during collection, causing them to rupture. This results in a serum or plasma sample that appears pale pink to red instead of the normal clear straw or pale-yellow.

Common Causes of Hemolysis

- Vigorously mixing the tubes
- Using a needle with a bore that is too small
- Using an oversized tube with a butterfly needle
- Not allowing the alcohol to dry on the puncture site
- Keeping the tourniquet on for longer than one minute

How to Prevent Hemolyzed Specimens

- Use a 20–22-gauge needle for routine collections
- Do not remove the needle from the vein while the vacuum tube is engaged
- Avoid drawing from a hematoma
- Do not centrifuge the specimen for too long
- Draw the sample smoothly and steadily

Labs Most Commonly Affected

Hemolyzed specimens can lead to inaccurate test results, requiring a repeat collection. This causes unnecessary patient discomfort and increases the workload for clinical staff.

Examples of Adverse Effects:



Chemistry: Falsely elevated levels of potassium (K+), magnesium (Mg2+), and AST/ALT

Hematology: Lowered RBC count

Blood Bank: Potential for inaccurate test outcomes