

# How to Prepare a Quality Sample: **Preventing Hemolysis**

### What are hemolyzed specimens?

Hemolysis occurs when the red cells are damaged during sample collection causing them to rupture. Hemolyzed serum or plasma is pale pink to red in color rather than the normal clear straw or pale yellow color.

### What causes a specimen to be hemolyzed?

- Mixing tubes too vigorously
- Exposure to heat
- Using a needle with too small of a bore necessary for the venipuncture
- Using too large a tube when using a butterfly needle
- Not allowing sufficient time for alcohol to dry on puncture site
- Leaving the tourniquet on for longer than one minute

### How can hemolyzed specimens be prevented?

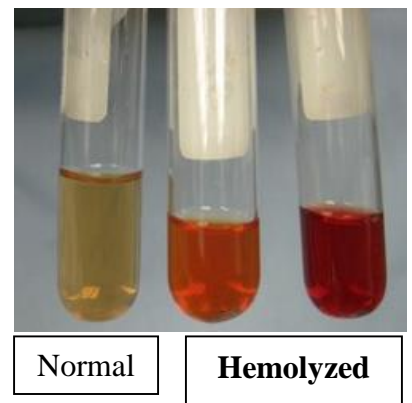
- For routine collections use a 20-22 gauge needle
- Do not remove the needle from the vein with the vacuum tube engaged
- Do not collect a specimen in a hematoma
- Do not centrifuge the specimen for a prolonged period of time
- Draw the sample gently and evenly

### What labs are primarily affected?

A variety of laboratory tests are adversely affected, resulting in invalid results. The sample must then be redrawn causing discomfort for the patient and extra nurse and technologist time.

### Examples of adverse outcomes associated with hemolyzed specimens

- *Chemistry: Increased  $K^+$ ,  $Mg^{2+}$ , AST/ALT*
- *Hematology: Decreased RBC count*
- *Blood Bank: Inaccurate testing*



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