

University of Colorado Hospital – Clinical Laboratory  
**Tips for Improving Heelstick Collection Technique**

## Hemolysis

Destruction of red blood cells releases hemoglobin and other substances such as potassium into the surrounding plasma. This can cause interference in many laboratory tests. *In vitro* hemolysis usually occurs when there is difficulty/poor technique in obtaining a blood specimen.



## Clotting

If flow of blood during collection is very slow, or tubes are not mixed immediately afterwards, the clotting process begins. Once begun, it cannot be reversed. Conversely, once a sample is properly anticoagulated, clotting will *never* occur. Clotted samples may not be used for tests that require anticoagulated whole blood.



## Four Tips for Improved Pediatric Sample Quality

1. Warm the Heel
  - ◆ Increases flow of blood which decreases clotting and hemolysis.
2. Wait After Alcohol
  - ◆ The skin at the draw site should be completely dry. Wait one minute after prepping the skin before starting the collection.
3. Wipe Away First Drop
  - ◆ The first drop is almost always hemolyzed and contains clotting activators. Wipe away the first drop before collection.
4. Mix Purple Tops Frequently
  - ◆ Collect a few drops of blood, cap the tube and mix by inversion. Collect another few drops and cap and mix again. Finish the collection and mix again.