



CLIENT NOTICE

Update to Blood Specimen Collection Instructions

January 26, 2012

Since the introduction of the BD Serum Separator Tube (SST – gold top) in 2010, we have noted an increase in the number of tests that must be cancelled because the volume of blood received is not of sufficient quantity (NSQ) to perform all tests ordered.

The new tubes have reduced the blood draw volume by 40%, which results in less serum being available for testing purposes after centrifugation. In order to reduce the number of NSQ samples received, we are providing the table below as a guide* for appropriate blood specimen collection when multiple tests are ordered, and additional tubes may be required. The table below also includes other pre-analytical reasons why tests may be cancelled, or results compromised.

Best Practices for Serum Separator Tubes (SST – Gold Top):

Error	Possible Reasons/Consequences	Corrective Action – Best Practice
Not Sufficient Quantity (NSQ)	<p>Insufficient number of tubes collected or under filling of tubes (incomplete draws or diminished vacuum draws) will result in patient recall.</p> <p>NOTE: <i>Using a winged blood collection set for venipuncture reduces the blood volume of the first tube by 0.5 mL.</i></p>	<p>Collect 1 full dedicated SST – gold top for each of the following groups. Allow each tube to fill to its stated volume and wait until blood flow ceases before removing from the needle holder.</p> <p>Group 1 (Integrated Chemistry/Immunoassay): Albumin, AFP Tumour Marker, Alkaline Phosphatase, ALT, Amylase, AST, Beta CG, Bilirubin, CA 125, Calcium, CEA, Chloride, Cholesterol, CK, CKMB, CO₂, Cortisol, Creatinine (eGFR), DHEA-S, Estradiol, Ferritin, Serum Folate, Free T3, Free T4, Fructosamine, FSH, GGT, Serum Glucose, HDL Cholesterol, Iron/TIBC, LD, LH, Lipase, Magnesium, NT-proBNP, Phosphate, Potassium, Progesterone, Prolactin, Protein, PSA, Pseudocholinesterase, Sodium, sTSH, Total T3, Testosterone, Triglycerides, Urate, Urea, Vitamin B12</p> <p>Group 2: Acetaminophen, ASO, CRP, Ethosuximide, High Sensitivity CRP, Lithium, Rheumatoid Factor, Salicylate</p> <p>Group 3: Hepatitis serology</p> <p>Group 4: Other test requests</p> <p>NOTE: <i>It may be necessary to take an additional tube for Group 4 when requesting large numbers of tests from this group, or if some tests are to be referred out.</i></p>

Error	Possible Reasons/Consequences	Corrective Action – Best Practice
Improperly Clotted Samples	Insufficient or delayed mixing of tubes will result in delayed clotting, free floating fibrin clots and incorrect test results. Mixing is required to properly engage the particulate clot activator sprayed on the inside walls of the SST tube.	Mix each SST tube immediately after removing from the holder for 5 complete inversions. While each successive tube is filling, turn the filled tube upside-down and return it to upright position. This is one complete inversion. Do not shake. Allow blood to clot thoroughly for 30 minutes before centrifuging for 10 minutes in a horizontal head/swinging bucket centrifuge (known as the “5/30/10” rule). Use of a fixed-angle centrifuge (not recommended) requires a 15-minute spin time.
Falsely Elevated Potassium	<p>Improper centrifugation, separation and hemolysis will cause potassium to leak from platelets and/or red blood cells (RBCs). Falsely elevated potassium results could result in late night phone calls and unnecessary trips to the ER for some patients.</p> <p>Common Centrifugation Errors:</p> <ul style="list-style-type: none"> • Separation delayed beyond 2 hours • Re-centrifugation or spinning twice • Centrifugation with the cap removed • Speed too fast – results in hemolysis • Speed too slow – platelets do not separate from blood serum 	<p>Centrifuge SST tubes after clotting within 2 hours of collection. The serum level of potassium will rise dramatically if the sample rests beyond the 2-hour limit.</p> <p>Never re-centrifuge an SST once the barrier forms (pour serum into a separate aliquot tube if required).</p> <p>Do not open tubes and never mix blood between sample types.</p> <p>Centrifuge tubes at 3000 rpm (1200 RCF/g) for 10 minutes in a horizontal head/swinging bucket centrifuge (preferred type of spin for gel separation tubes) or 15 minutes in a fixed-angle centrifuge (not recommended).</p> <p>Best Practices:</p> <p>Hemolysis is caused by excessive tourniquet time, traumatic draw, vigorous or no mixing, location of venipuncture (draw below IV), arm position (should be down), small needle gauge, excessive fist clenching, temperature extremes and incorrect order of draw. To avoid anticoagulant contamination, please follow the recommended order of draw;</p> <ol style="list-style-type: none"> 1. Tubes for sterile samples 2. Tubes for coagulation studies (e.g. citrate) 3. BD SST – gold top 4. Tubes with other additives (e.g. heparin, EDTA, fluoride)

*** Continue to follow current collection practices for tubes with special collection and handling requirements such as frozen, preservatives, red tops for selected TDMs or referred out tests, e.g. Public Health.**

Quality and patient safety are of utmost importance at Gamma-Dynacare Medical Laboratories. If you have any questions about specimen collection, please refer to: <http://www.gamma-dynacare.com/Content/HealthcareProviders/CollectionInstructions.aspx> or www.bd.com.

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