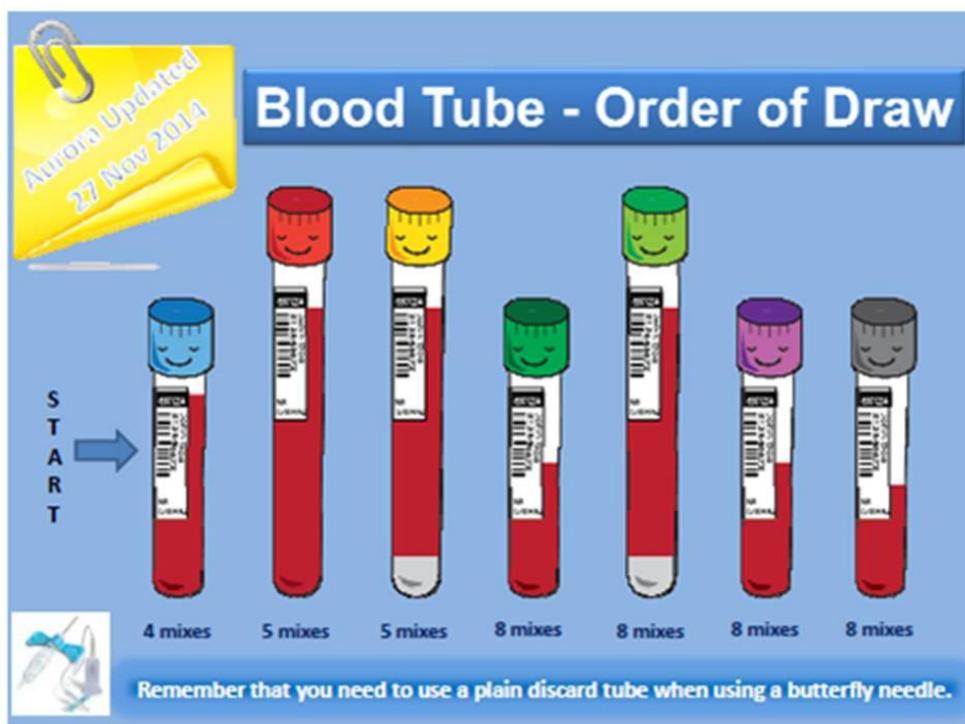


COAGULATION TESTING GUIDELINES

Specimen Collection

- Collect whole blood specimen into light blue top tube (3.2% sodium citrate). When using a butterfly or winged blood collection set for venipuncture and a coagulation tube (3.2% sodium citrate) is the first tube to be drawn, first draw a discard tube. The discard tube is used to fill the blood collection tubing dead space, which will ensure proper blood-to-anticoagulant ratio. The discard tube should be a non-additive or a coagulation tube, and need not be completely filled.
- Drawing blood for coagulation testing through any lines that have been flushed with **heparin** should be avoided if possible. However if unavoidable, the following procedure for collection from central lines, implanted ports, and central venous catheters should be followed:
 - Turn all fluids off
 - Flush (all ports) with 5 mL of normal saline (if there was fluid in the line/s)
 - Wait 2 minutes
 - Discard first 5 mL of blood or 6-times the line volume (dead space of the catheter)
 - Collect blood tubes according to the “Order of Blood Draw” instructions



- The coagulation specimen must be collected in a way that preserves the integrity of easily activated or denatured proteins, enzymes, and cofactors. A clean venipuncture with adequate blood flow into tubes or syringe provides the best specimen.
- Specimen tube must be **full**. The standard proportion of blood-to-anticoagulant volume is 9:1. This is critical as incorrect blood to anticoagulant ratio will cause erroneous results. Other anticoagulants (e.g. Oxalate, heparin, or EDTA) are unacceptable. Under-filled, clotted or haemolyzed specimens must be rejected.

- The specimen should be mixed immediately by gentle inversion (end over end 5 - 6 times) to fully integrate the anticoagulant with the blood. Vigorous shaking and continued inversion of the specimen must be avoided to limit platelet activation.
- If the patient's haematocrit is >55%, blood for coagulation testing should be collected in an adjusted volume of anticoagulant volume. The formula for correction is given as below:

$$C = 1.85 \times 10^{-3} (100 - H) \times V$$

C = volume of anticoagulant in millilitres remaining in the tube

V = volume of whole blood in millilitres to be added to the tube

H = haematocrit in %

- Once the specimen is collected, it should be transported to the laboratory as soon as possible. Whole blood specimens must **not** be sent on ice.

Specimen Processing

Each test may have different storage and stability (refer to individual [test catalog](#)). Hence, if testing cannot be accomplished within the period stated, the specimen must be double centrifuged to obtain platelet poor plasma (platelet count $<10 \times 10^9/L$):

- Centrifuge the citrated whole blood at the pre-determined speed and time to separate the blood components from plasma.
- The plasma is then removed just above the cell line with a plastic transfer pipette into a plastic tube.
- Centrifuge the plasma in the plastic tube at the pre-determined speed and time.
- Transfer the plasma into the second plastic tube, leaving about 0.25 mL in the first plastic tube to be discarded.
- There should be at least 1 mL of plasma in the second plastic tube.
- Cap and label the plastic tube clearly.
- Refer to individual [test catalog](#) for the amount of specimen required. Generally, each coagulation test should be accompanied by one aliquot of platelet poor plasma.