

## 5 Processing Specimens

### 5.1 General Principles

Do not use heparinized syringes to collect either full blood count (FBC) or coagulation specimens.

Ensure specimen tubes especially coagulation tubes, are accurately filled. Under or over-filled coagulation tubes will be rejected.

For accurate coagulation results, vene-collection must not be traumatic or difficult as any leakage of tissue fluid into the blood during collection will initiate clotting.

It is preferable not to collect specimens from a drip arm. This can adversely affect results. Please phone for advice if there is no choice as in multiple trauma.

To prevent the specimen from clotting ensure the blood and anticoagulant are well mixed immediately after collection especially when performing a heel (capillary) collection.

Erythrocyte Sedimentation Rate (ESR) and reticulocyte counts will not be performed on specimens older than 24 hours as results after this time may be falsely reduced.

Full blood counts are reliable up to 48 hours old if they have been stored properly in a refrigerator or an esky with a frozen ice brick where the tube has not been allowed to come in direct contact with the ice brick. Poor storage or prolonged storage of EDTA blood results in reduced white cell and platelet counts, as well as gradual deposition of fibrin.

A thin blood film should be prepared at the time of collection of all FBCs.

### 5.2 Centrifuging Blood

The majority of Chemical Pathology (Biochemistry) tests require centrifugation and separation of the serum or plasma from the cells into a plain tube if there is to be a delay in transport to the laboratory. For example, it is important that bloods for electrolytes, liver function tests and cardiac enzymes are separated within two hours of collection. Otherwise, the results will be misleading.

Allow clotted tubes 15 minutes to clot before centrifuging. All tubes requiring centrifugation must be centrifuged for at least 10 minutes at approximately 3000 rpm. Coagulation samples with a request for an INR only may be sent to the laboratory unspun if they will be received in less than 24 hours. All other coagulation samples must be centrifuged as indicated above.

When specimens have been centrifuged it is important to indicate whether they are SERUM (from clotted blood) or PLASMA (from tubes containing an anticoagulant). Please document this on the specimen label as well as the tests to be performed.

Plasma tubes should not be put in the fridge until they have been centrifuged. This should occur within thirty minutes of collection and **must** occur within two hours. This procedure will be referred to as '**spin**' in the Collection Guidelines.

Those tests where "**whole blood**" is indicated are **not** to be centrifuged and separated.