



Blood Gas Analyser – Learning Package

The GEM 4000 is a comprehensive whole blood gas analyser offering a flexible analyte menu including pH, pO₂, pCO₂, electrolytes, metabolites and on board CO-Oximetry.

It is important to ensure staff have the appropriate technical skills to ensure that the results produced by the blood gas analyser are of high standard and eliminate errors.

Collecting Samples

- Both arterial and venous blood gas samples can be analysed by the GEM 4000. Blood samples are to be collected in a heparinised syringe which is an arterial gas syringe or green top tube.
- The minimum amount of blood required in a heparinised syringe should be no less than 0.5ml.
- To ensure that air is not sucked into the GEM 4000 analyser, post collection of sample it is important to expel air from syringe so that blood is level with the end, then cap the syringe.
- The GEM analyser will aspirate the sample from the syringe, you do not need to inject the blood into the machine using the syringe plunger.
- It is important to ensure the sample is mixed thoroughly. Do this by rolling the syringe between the palm of your hand 4 times, invert then repeat for another 4 times, DO NOT SHAKE.
- Prior to aspirating any sample with the GEM analyser, you must dispense a drop of blood onto a tissue to ensure there are no clots. Clots can cause the machine to breakdown and give inaccurate sample readings.
- You must ensure that you select the correct sample type eg; Arterial/Mixed Venous/Venous prior to analysis.
- Patient ID refers to the UR no. as found on the patients Bradma Label.
- Please enter all details as requested by analyser, First/Last name, D.O.B, sample No. Do not make up details if they are unknown.
- The 'sample number' which is required when entering the patient's details can be found on the left hand side of the request form. It is a barcode which can be scanned.
- Once the 'VIEW RESULTS' tab has been pressed, one copy of the results will be printed automatically. It is important to press print to gain a second copy which can be attached to the pathology form and left in the collection box at the side of the machine.

