

ARTERIAL BLOOD GAS SPECIMEN COLLECTION

PRINCIPAL

Arterial blood gas determinations are useful in measuring how well a patient is oxygenated and what his acid-base balance is. In order for the Blood Gas Laboratory to function effectively, the patient sample must be correctly obtained and labeled. Any laboratory test is only as good as the sample collected.

1. Positively identify the patient from whom blood is to be collected.
2. Know which equipment is appropriate.
3. Follow the principles of universal precautions in all aspects of sample collection.
4. Label specimens clearly and complete all required paper work.

REAGENTS AND SUPPLIES

Pulsator arterial blood sampling kit:

**Available from Concord/Portex
CAT# 4037 NP-1**

1 syringe, 3cc prefilled with Sodium Heparin
1 needle 20g x 1½"
1 needle 22g x 1"
1 Needle-Pro
1 Filter-Pro
1 alcohol prep pad
1 Fodophor prep pad
2 gauze sponges (2 in. x 2 in.)
1 stopped tip cap
1 gusseted ice bag
1 patient label

1 3cc syringe w/25x5/8 needle:

**Available from the Medical Warehouse
CAT# 07430**

1 cc of 4% Lidocaine:

Available from the Pharmacy

Blood Gas Lab requisition form:

**Available from the Respiratory Therapy
Department**

Gloves:

**Available from the Central Warehouse
CAT# 85133**

PREPARATION OF PATIENT

1. Identify the patient by the wrist band.
2. Explain the procedure to the patient.
3. Determine the ABG puncture site – palpate the radial artery. The femoral artery or brachial artery may be used as alternate sites.

NOTE: If puncturing the radial artery perform the Allen test, which is a simple method for assessing collateral circulation in the hand. If the Allen test fails to demonstrate adequate collateral flow, do not use that radial artery.

Allen Test:

- a. Obliterate the radial and ulnar pulses simultaneously by pressing on both blood vessels at the wrist.
- b. Ask the patient to clench and unclench his fist until blanching of the skin occurs.
- c. Release pressure on ulnar artery while compressing radial artery. Watch for return of skin color within 15 seconds.

PROCEDURE

A. Anesthetize the Site

1. Assemble the 3cc syringe with 4% Lidocaine.
2. Put on gloves. Prepare the skin using the alcohol prep.
3. Anesthetize site with Lidocaine.

B. Obtain the Sample For Analysis

1. All drawing of blood will be done with protective gloves and faceshield. All material possibly in contact with blood will be regarded as contaminated.
2. Peel the blister pouch with the NEEDLE-PRO needle protection device open half way. (Do not touch needle protector). Remove cap from syringe and discard. Grasp sheath using the plastic peel pouch. To prevent contamination, be careful

not to touch NEEDLE-PRO's luer connector. With an easy twisting motion, attach syringe to the luer connection of the Needle-Pro.

3. Twist a needle into the male luer lock fitting on the base of the NEEDLE-PRO.
4. Expel any residual heparin out through the needle. (The needle must be coated with heparin to prevent the formation of micro-clots).
5. Feel along the course of the radial artery and palpate for maximum pulsation with the middle and index finger. Prepare the skin with an alcohol prep.
6. Remove the sheath from the needle. Hold the needle at a 45-60 degree angle to the skin surface and advance in to the artery. Once the artery is punctured, arterial pressure will push up the hub of the syringe and a pulsating flow of blood will fill the syringe.
7. Once blood is obtained, withdraw the needle firmly and apply pressure over the site with a dry sponge.
8. Press the needle into the sheath by GENTLY pressing the sheath against a hard surface such as a bedside table. AS THE SHEATH IS PRESSED, THE NEEDLE IS FIRMLY SNAPPED INTO THE SHEATH.
9. Twist off NEEDLE-PRO and discard into a sharps container. Place the FILTER-PRO AIR BUBBLE REMOVAL DEVICE on the syringe. Push the plunger up to expel any air bubbles.
10. The syringe must then be labeled placed in a labeled bag of ice for transport to Respiratory Care Services.
11. Continue to maintain pressure of puncture site for up to 10 minutes. (If patient is on anticoagulant medication apply pressure for 15 minutes).
12. Give the proper paperwork and the sample to the unit secretary. **Samples will not be accepted by the lab unless the syringe is labeled, the bag of ice is labeled, and the requisition is complete. To be considered complete, the requisition must contain the patient's name, T00 number, admission number, date of birth or age, ordering physician, time drawn, F10₂ and patient temperature. If there are labeling discrepancies you will be asked to come to the lab, identify the specimen, and complete an identification of Specimen Form.**