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| <b>PROCEDURE NO.:</b> <u>SC26</u>  |
| <b>SUBJECT:</b> Arterial Blood Gas Collection                            |
| <b>Effective Date:</b> <u>08/31/07</u>                                   |
| <b>Supersedes:</b> <u>09/01/05</u>                                       |
| <b>Medical Director:</b> <u>Vincent DeRisio D.O.</u>                     |
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| <b>Revised By:</b> <u>Nancy Caddell MT (ASCP); Brenda Karr MT (ASCP)</u> |
| <b>Annual Review:</b> _____  |

**Purpose:**

To obtain the acid-balance and O<sub>2</sub> - CO<sub>2</sub> content of arterial blood.

**Responsibility:**

All associates who collect arterial blood gases.

**Materials:**

**Pro-Vent<sup>®</sup> Plus Arterial Blood Sampling Kit** Manufacturer Sims Portex  
(REF.4589P)

Contents:

1-3ml Syringe *containing ~ 25 USP units of dry lithium heparin per CC capacity*

1-23g X 1 inch Needle (attached)

1-Point-Lok Device

1-Filter-Pro Device

1-22g X 1½ inch needle (discard-this will not be needed)

1-Patient Label

1-Adhesive Bandage

1-Iodophor PVP Prep Pad

1-Alcohol Prep Pad

1-Gauze Sponge

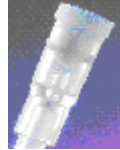
1-Ice Bag

1-Pair of latex or vinyl gloves

Ice



Syringe/needle  
Point-Lok device



Filter-Pro  
device

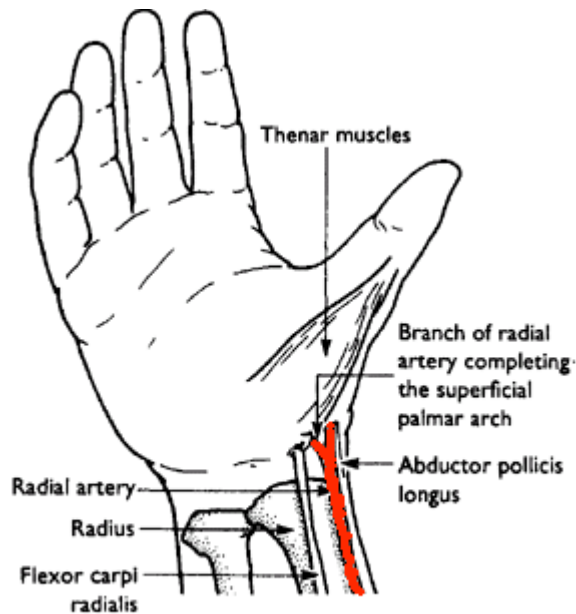
**Caution:** The packaging of this product contains natural rubber latex, which may cause allergic reactions.

**Procedure:**

- A. Identify the patient.
- B. Explain the procedure, ask permission to draw specimen.
- C. Wash your hands and apply clean pair of gloves.
- D. Assess the patient.
  1. Keep the patient calm. Anxiety may cause hyperventilation, which will alter the pH.
  2. Ensure any oxygen therapy has been stable for at least 30 minutes.
  3. Take patient's oral temperature and record on specimen label.
  4. The patient should be sitting or lying down. Never attempt to draw blood on someone while they are standing.

E. Perform the Allen test

1. Have the patient clench his/her fist.
2. Press on both the radial and ulnar arteries.
3. Without removing pressure, have the patient unclench fist. Check the palm for blanching or absence of color.
4. Release pressure on the ulnar artery. If the patient's hand returns to normal color within 5 seconds, the test is positive for good collateral arterial blood flow.



F. Collect the blood gas

1. Open ABG kit
2. Extend the patient's wrist 30 ° downward, palm up.
3. Do not apply tourniquet.
4. Locate pulse of radial artery just proximal to the skin crease at the wrist.
5. Place index and middle fingers carefully over the artery and palpate for the size, direction, and depth of the artery.



6. Cleanse the site with alcohol prep pad using concentric circles
7. Cleanse the site with Iodophor PVP Prep Pad using concentric circles.
8. Cleanse gloved index finger of non-dominant hand with iodophor also.
9. Use 23g needle that is attached to syringe. Without disturbing plunger, grasp syringe between index finger and thumb holding syringe like a dart. Remove cap from needle.
10. Place a finger of the other hand over the artery at the exact point where The needle should enter the artery.
11. Puncture the skin about 5 to 10 mm distal to the finger directly over the artery with bevel of the needle up, at an angle of approximately 45°.
12. The syringe should fill on its own under the pressure of the artery. The syringe should be free of air bubbles.
13. Once syringe is completely filled, quickly withdraw from patient and apply direct pressure to the puncture site with gauze sponge. Pressure should be maintained for a minimum of 5 minutes (longer if on anticoagulants).
14. Two minutes after relieving pressure, inspect the site over the artery to make sure a hematoma has not developed and that the distal circulation is intact.
15. Apply adhesive bandage to puncture site.

G. Proper handling of the sample

1. Immediately insert needle of syringe into red Point-Lok device.



2. Pull up Lok device over hub of needle. Twist syringe counter clock wise while holding Lok device to disconnect needle from syringe.
3. Cap syringe with Filter-Pro device and push plunger of syringe gently to release a small amount of blood into Filter-Pro device.  
Discard entire Point-Lok device with needle into biohazard sharps container



4. Gently roll syringe with hands to ensure mixture of dried heparin.
5. Label the specimen with:
  - a. Patient's name
  - b. ID number
  - c. Date
  - d. Time
  - e. Collector's initials
  - f. Patient temperature
  - g. Ventilation

**References:**

1. NCCLS document H11-A2 Vol. 23 No. 32, fifth edition, 2003.
2. Garza and Becan-McBride, Phlebotomy Handbook, seventh edition, 2005.