Shunt Study

**Audience**  
All personnel in the Pulmonary Function Clinic.

**Purpose**  
To describe the procedure for performing a shunt study using a Douglas bag as a reservoir.

**Indications**  
An oxygen shunt study estimates the portion of a patient’s blood flow which does not participate in effective gas exchange within the lungs. Assessment for the presence and severity of a right to left shunt; example: Hepatopulmonary syndrome.

**Contraindications**  
Negative modified Allen’s test which indicates the absence of ulnar collateral circulation. Any inflammation, infection or poor integrity of the selected puncture site.
- Raynaud’s Syndrome
- Scleroderma

**Precaution**  
The following precautions should be noted for the shunt study procedure:
- Fear of needles
- Claustrophobia

**Procedure**  
The following is the procedure for a shunt study:
- Check the physician’s order, and prepare all equipment including Douglas bag and clean circuit with one-way valve.
- Explain to the patient the complete procedure.
- If the patient is on supplemental oxygen it is to be removed for at least 10 minutes. If the patient is unable to tolerate being on room air please notify the pulmonary fellow and the ordering physician.
- Obtain a room air arterial blood gas according to the policy. For patients with cirrhosis these patients will need to have a standing arterial blood gas. If the patient is unable to stand, the room air arterial blood gas may be obtained while sitting.
- If the PaO2 is greater than 80mmHg there is no need to proceed with the shunt study. The therapist will then notify the pulmonary fellow.
- The patient will then have the mask placed. If the patient is unable to tolerate the mask they can use the mouthpiece and nose clips. The therapist will monitor the patients’ saturation with a pulse oximeter.
- The patient will breathe normally in the mask/mouthpiece for 20 minutes breathing 100% oxygen.
- An arterial blood gas will be taken while the patient continues breathing 100% oxygen. For patients with cirrhosis these patients will need to be sitting for the second arterial blood gas.
• The patient will then be placed back on their original oxygen settings if required.

• Both arterial blood gas results should be placed in Breeze with each result being verified. The therapist will place the ABG results as such that it shows on the Pre/Post results when the report is printed.

This form documents the approval and history of the policies and procedures for the Pulmonary Function Laboratory. The Medical Director signs all policies verifying initial approval. Annually thereafter, the Director and/or designee may approve reviews and revisions.

Date  Approved by:  Signature

9/08  V. Cardenas, MD  Signature
Medical Director Pulmonary Laboratory

4/12  A. Duarte, MD  Signature
Medical Director Pulmonary Laboratory
Changes made to the policy

5/14  A. Duarte, MD  Signature
Medical Director Pulmonary Laboratory
Changes made to the policy