

University of Texas Medical Branch Pulmonary Function Clinic Policy 03-18 Shunt Study	Effective Date: Revised Date: Review Date:	Sept 08 Aug 21 Sept 23
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Patient Testing - 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. (See policy 04-09 ABG Special Drawing Considerations) for further contraindications as necessary.

- 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. Flush bag three times before patient is connected. Carefully watch Douglas bag so as not to burst. Set up the one-way valves on patient's mask and ensure they are setup properly before placing on patient.
- 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 or Medical Director.
- 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 on their face. 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.

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- The patient will breathe normally in the mask/mouthpiece for 20 minutes breathing 100% oxygen supplied through the Douglas bag.
- 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 Medical Director Pulmonary Laboratory	
4/12	A. Duarte, MD Medical Director Pulmonary Laboratory Changes made to the policy	
5/14	A. Duarte, MD Medical Director Pulmonary Laboratory Changes made to the policy	
8/16	A. Duarte, MD Medical Director Pulmonary Laboratory Changes made to the policy	
11/17	A. Duarte, MD Medical Director Pulmonary Laboratory Changes made to the policy	
8/19	A. Duarte, MD Medical Director Pulmonary Laboratory Changes made to the policy	
8/21	A. Duarte, MD Medical Director Pulmonary Laboratory Changes made to the policy	
9/23	A. Duarte, MD Medical Director Pulmonary Laboratory No changes made to the policy	