

Attachment 10

Bronchodilator Test SOP

BRONCHODILATOR TEST

I. BACKGROUND

Bronchodilator (BD) administration can follow spirometry to detect reversible airways obstruction. Albuterol is the most commonly used form of bronchodilator for post - BD testing. For many projects, post-BD spirometry is only done for participants with abnormal pre-BD spirometry results (especially airway obstruction).

II. CONTRAINDICATIONS

Contraindications are the same as for baseline spirometry with the following exceptions.

1. Systolic BP >160 or diastolic BP >100 mmHg
2. Pulse >100 beats per minute

III. EQUIPMENT AND SUPPLIES

1. A spirometer
2. An albuterol metered-dose inhaler (MDI) that delivers 100mcg albuterol per puff
3. Disposable cardboard mouthpiece or 6" length of blue ventilator tubing to serve as spacer.

IV. TEST PROCEDURES

1. Prepare the bronchodilator administration equipment
 - a. Attach a spacer
 - b. Shake the MDI; if it has not been used for more than four (4) hours, activate the canister once to verify aerosol delivery.
2. Pre-test procedure
 - a. Explain possible symptoms from test: "You may experience temporary jitteriness and/or rapid heart rate."
3. Test procedure.
 - a. Hold the MDI with a spacer 1 to 2 inches from the subject's open mouth.
 - b. Have the subject exhale fully.
 - c. Place the MDI with spacer in the subject's mouth.
 - d. While the subject is inhaling slowly activate the MDI while instructing the subject to continue to inhale slowly until they have inhaled fully over approximately 5 seconds.

- e. Instruct the subject to hold his breath at total lung capacity (TLC) for 5 seconds and then to exhale slowly.
- f. Wait 30 seconds.
- g. Repeat procedure three additional times for a total of 4 metered doses being administered (400mcg total.)
- h. Wait 10 minutes.
- i. Repeat spirometry.

V. REFERENCES

1. Miller MR, Hankinson J, Brusasco V, et al, ATS/ERS Task Force. Standardisation of spirometry. *Eur Respir J*. 2005 Aug; 26(2):319-338.
2. AARC (American Association for Respiratory Care) clinical practice guideline. Spirometry: 1996 update. *Respir Care* 1996; 36:629-636.