

**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.