

Procedures to Conduct ¹³C-Phenylalanine Breath Tests

1. Materials

- 100 mg 1-¹³C-phenylalanine (supplied in glass vial)
- 8 Exetainer Breath Storage Tubes
- Phenylalanine Breath Test Form
- 10-12 oz drinking cup (not supplied with kit)

2. Dietary Procedures

Patients should not consume food at least 8 hours prior to the breath test. Patients can drink water prior to the test.

3. Phenylalanine Dose Preparation Steps

1. Open the glass vial and pour contents into a drinking cup.
2. Rinse contents of glass vial several times with tap water and pour rinse water into drinking cup.
3. Add water to drinking cup filling up about two-thirds of way. Stir water carefully to dissolve the phenylalanine powder completely.
4. Label eight breath tubes as: Baseline 1, Baseline 2, 10 min, 20 min, 30 min, 40 min, 50 min, and 60 min. Include patient ID name or number and date on tubes.

4. Procedure for Collecting Breath Samples

During the breath collection procedures remain seated or reclined in a comfortable position. **Collect a breath sample as follows:**

1. Remove the cap of the breath collection tube.



2. A straw is placed at the bottom of the Exetainer tube.



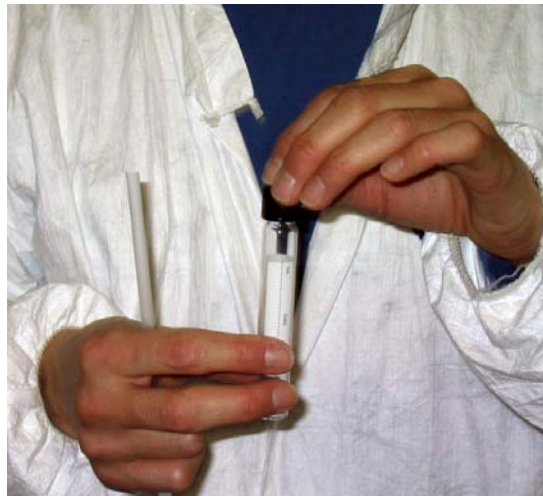
3. Place the straw in your mouth with the breath collection tube at the end of the straw. Take a full breath and exhale through the straw directly into the tube. The breath should not be forced.



4. Before the exhalation is complete, withdraw the collection tube away from the straw.



5. Screw on the cap immediately but only turn the cap "finger-tight". Over tightening the cap will deform the seal in the cap and the breath gas will leak out.



The breath remains in the tube for at least 5 seconds while placing the cap on the tube. If the cap is dropped or you delay closing the tube while collecting the breath sample, just repeat the breath collection.

5. Phenylalanine Breath Test Protocol

1. Collect two baseline breath samples, with a 5 minute time difference between collections.
2. Administer phenylalanine isotope to patient and record time. Rinse cup with about 5 oz of water and administer to patient.

3. Collect breath samples at 10, 20, 30, 40, 50 and 60 minutes following the phenylalanine dose.
4. Fill out phenylalanine breath test form. Include times of collection.
5. Mail all breath tubes to Metabolic Solutions for analysis. Wrap tubes carefully with bubble wrap and rubber bands. Place tubes in the original kit box with phenylalanine breath test form.