



Fluoroscopy Protocols

Esophagram - Barium Swallow with Air Contrast-Adult

Fluoro Time Target Limit: 2.5 minutes

Scheduling and Prep: *Although, there is no prep for this exam,
 **It is suggested that the patient be NPO (Nothing by mouth) for 2 hours prior to the exam. This will help with patient comfort and reduce any food particles from refluxing into the esophagus, obscuring esophageal lining. Do not reschedule the exam if the patient is not 2 hours NPO.

**If the patient has a Lap-band, Refer to Lap Band protocol. Do not give the Lap band patient effervescent crystals or a barium tablet.

Supplies: *Effervescent crystals and cold water
 *Air contrast barium-thick
 *Single contrast thin barium
 *2-medicine cup, 1-Straw * 2- cups with mL measurements
 *Barium tablet

*13 MM barium tablet placed on Image Intensifier: Unless your Fluoro equipment has built-in Measuring capabilities

Air Contrast Esophagus Procedure:

- *Start with the patient in the upright position
- *Slightly oblique the patient to the left. (This will eliminate superimposition of the Esophagus and spine)
- *Have the patient hold the air contrast (thick) barium in their left hand so there will Be minimal delay between drinking the air crystals and beginning to drink the thick Barium.
- *With the patient holding medicine cup with cold water, in their right hand, Pour effervescent crystals into the water. Encourage the patient to drink the mixture Very quickly.
- * It is OK for the patient to belch throughout this exam.
- *Take the empty fizzie cup and instruct the patient to begin drinking the thick barium. Have the patient take big swallows, quickly, one right after the other until the cup is Empty. Tell them to stop if they need a break.
- *Take note of any aspiration or coughing. If so, have the patient stop drinking. If there is any aspiration, ask the radiologist if you should continue or discontinue The exam.

Spot Images: Be sure to collimate well and include the anatomical side marker in all Esophagus images.

- *While the patient is drinking the thick barium, take an adequate number of Images of the air contrast esophagus. **Anticipate (4-6) images.**
- ***Concentrate on the distal esophagus at the EG junction.** Once the distal Esophagus is sufficiently imaged, move superior to the mid and proximal Esophagus. Some of the best-coated images are seen after several swallows Have passed down, so check again at the distal esophagus for better air contrast Esophagus images.

Rapid Sequence Imaging:

- *AP position, have the patient hold a large swallow of single contrast thin barium In their mouth. With their chin elevated, activate rapid sequence imaging, 4 per Second, and instruct the patient to swallow. Hold exposure button down just Long enough to image the upper esophagus in motion. Stop imaging as soon as The one swallow clears the upper esophagus. Avoid unnecessary imaging.
- *Repeat this process in the lateral position with the patient's shoulders depressed.

Procedure for imaging the single Contrast Esophagus:

- *Lower the table to place the patient in the RAO position with their right arm by their Side. Have their head on a doubled-up pillow. Have the patient hold the single contrast Barium cup with a straw in their left hand.
- *Have the patient drink one normal sized swallow and just **watch** the tail of the barium All the way, down. This will show their motility without gravitational assistance. Take note of any abnormal motility or pathology.
- *Next, have the patient drink three large swallows, fast and consecutively

Spot Images:

- *While the patient is drinking the three large, fast, and consecutive swallows, take images Of the barium filled esophagus from superior esophagus to the inferior esophagus, just Enough to document the entire esophagus filled with barium to EG junction. To reduce exposure, **anticipate 2-4 images.** After the third swallow, have the patient inhale, hold their breath and bear down. (Valsalva maneuver)

(This is a good time to evaluate for hiatal hernias or **Schatzki's** rings as well as looking for motility issues.)

- *Have the patient then roll to the supine position and check for reflux.

➤ To minimize patient coughing or producing **aerosolization** (Airborne Particles):
DO NOT: illicit a forced cough when attempting to provoke reflux. Instead,

Have the patient swallow their saliva and then tighten their stomach muscles for a few seconds. Then roll the patient enough RPO to place the barium up against the EG Junction and repeat tightening of their stomach muscles.

*Screen save images of reflux if it occurs, and label with reflux and an up arrow.

*Take an AP of entire barium coated structures. (Stomach and loop of the small bowel.) This will show the C-loop to confirm or rule out malrotation.

Barium Tablet:

*Always wait until the end of the exam to administer the barium tablet.

*In the upright position, have the patient swallow a barium tablet with water.

*Watch the tablet as it travels down the esophagus to the stomach

*Screen save an image of the EG junction, for documentation that the pill went down.

*Screen save the pill if it gets stuck in the esophagus. Inform the radiologist how long the tablet delays entering the stomach or if it does not go down within about five minutes. If the tablet is not passing through the EG junction quickly, have the patient drink more water. Do not Fluoro the entire time.

* If the pill is still lodged in the esophagus, have the patient take a small sip of thin Barium and capture an image as the pill is surrounded by the barium.

*If the pill does stick in the lower esophagus, for longer than about 5 minutes, the patient can safely be released with instructions to sip water and refrain from eating for about 20 minutes to allow the pill to dissolve.

*If the pill lodges in the upper esophagus, the patient should remain at the ARA clinic sipping water, until the pill passes on down the esophagus and into the stomach (Take an image) Or if the pill is successfully brought back up.

*If tablet is aspirated, immediately contact the Radiologist and medic.

**If aspiration of the barium occurs; stop the patient from drinking, take note if the patient coughs or does not cough. Consult the radiologist if he/she feels that the exam should continue or be discontinued.

**The radiologist is relying on the fluoro technologist to witness and inform them of reflux, Barium tablet passage, pathology, and motility issues.

** These are the minimum images needed to demonstrate the proper anatomy for this Exam. When deemed necessary, more images should be taken to demonstrate pathology or per the Radiologist's request.

** Take care to minimize patient and technologist exposure.

**Instruct the patient to drink extra fluids to help prevent constipation from the barium.