PEDIATRIC GASTROESOPHAGEAL REFLUX STUDY  
(MILK SCAN)

RATIONALE: Reflux of gastric and possibly duodenal contents across the gastroesophageal junction is commonplace in newborns and infants. Efflux of these contents into the lungs may result in a chemical pneumonitis. The milk scan is done to demonstrate the presence of gastroesophageal reflux, its extent in the esophagus and delayed images for evaluation of aspiration.

Gastroesophageal scintigraphy is a convenient, tubeless, and accurate technique for detecting gastroesophageal reflux that can be performed rapidly with minimal patient discomfort. The procedure is currently being utilized throughout the world and has recently been employed by pediatricians to identify reflux as a cause for failure to thrive, recurrent vomiting, or recurrent respiratory infections in infants.

MATERIALS: LFOV gamma camera with LEAP collimators
Energy window: 140 keV with a 20% window
0.2 mCi to 1.0 mCi Tc99m Sulfur Colloid
Adult Dose: 0.2 mCi to 1.0 mCi as directed by physician
Pediatric Dose: 7 uCi / kg; 200 uCi minimum
Route of Administration: P.O.
Milk or juice

TECHNIQUE:
1. 4 hour fast in the case of neonates and infants.
2. Dilute the dose in 30 mL of milk or juice and have the child drink the entire volume. After the child is given this amount to drink an additional volume of juice or milk is given until he/she is satiated. The total volume should equal that of a usual feeding for the patient. In adults, the usual administered volume is 250 mL.
3. Place the child supine on the camera. (Adults supine with the camera above)

ACQUIRE:
500K static images are acquired every 5 minutes for 1 hour.
Computer acquisition of 30 seconds per frame (64 x64) for 1 hour.
Additional delayed views may be taken at 2 to 6 hours and 18 to 24 hours later if requested by the physician. For delayed imaging of the chest, markers should be placed at the tips of the shoulders to define the upper limits of the thorax.