Thyroid Uptake and Scan

| Special Instructions | This examination can be performed with an I-123 uptake and scan (generally preferred) versus an I-131 uptake followed by a Tc-99m pertechnetate scan. Patients who have previously had an uptake and scan may have a 24-hour I-131 uptake only (without scan) prior to therapy. Confirm type of study to be done with the radiologist prior to ordering the radiopharmaceutical(s).

Ask the patient if they are taking any antithyroid medications (such as methimazole, Tapazole, PTU). Antithyroid medications should generally be withheld for at least 3 days prior to this study (consult with the radiologist if questions).

Also ask the patient if they are taking thyroid hormone replacement (such as Synthroid, levothyroxine, Levoxyl, or Cytomel). This examination should not be performed in patients taking thyroid hormone replacement.

Hyperthyroidism is the most common indication for this study. Consult with the radiologist if any other indication is provided.

To be performed at UNMH and SRMC.

| Radiopharmaceuticals: | I-123 sodium iodide  
| | I-131 sodium iodide/Tc-99m pertechnetate

| Dose (Adult/Pediatric): | Refer to Nuclear Medicine Dose Chart

| Route of Administration: | I-123 or I-131: Oral  
| | Tc-99m pertechnetate: Intravenous

| Patient Preparation: | Please ensure the following:
| | • NPO for least for 4 hours before radioiodine (I-123 or I-131) administration.

| | (UNMH ONLY) If the patient is scheduled for radioiodine ablation of the thyroid gland after the uptake and scan, the patient should also be NPO for at least 4 hours prior to the therapy. Because there is typically a several-hour delay between when the patient arrives in the nuclear medicine department and when he/she receives radioiodine therapy (due to finishing uptake/imaging, undergoing consent, and waiting for the ordered dose to be prepared and delivered), the patient may usually eat breakfast on the day of treatment.

| | • If possible, the patient should withhold antithyroid medications (methimazole, PTU, Tapazole) for at least 3 days prior to the examination or therapy.

| | • If possible, the patient should not have received iodinated contrast (usually from a CT examination) within the past 2 weeks.

| Equipment Setup: | Collimator:
| | • Orbiter: LEAP, pinhole
Thyroid Uptake and Scan (continued)

- ECAM/Evo/Symbia E: High resolution, pinhole

Computer setup:

Parallel-hole collimator (LEAP or High resolution):
- Static acquisition
- 128 x 128 matrix
- ZOOM 2.00
- 5 minutes or 50K counts (whichever is sooner).

Pinhole collimator:
- Static acquisition
- 128 x 128 matrix
- ZOOM 1.00
- 5 minutes or 50K counts (whichever is sooner).

Patient Positioning:
For uptake measurements: Seated (UNMH) / Standing (SRMC).
For imaging: Supine.

Procedure:

Acquisition time post-injection:

I-131:
- Uptake measurements at 4-6 and 24 hours

Tc-99m pertechnetate:
- Administer after the 24-hour I-131 uptake
- Acquire image 20 minutes post-injection.

I-123:
- Uptake measurements at 4-6 and 24 hours
- Acquire image after the uptake measurement at 4-6 hours.

For uptake measurements:
- Follow the thyroid uptake protocol on the thyroid probe computer. Make sure the distance of the probe is always at 26 cm from the skin surface for the neck and thigh counts.
- The patient's chin should be straight forward and positioned not too far down or up.

For imaging:

Parallel hole (LEAP or High Resolution):
- Acquire anterior planar with markers on chin and suprasternal notch (SSN). If the uptake is low (<5%) and the thyroid is only faintly visualized on this image, ask the radiologist whether the pinhole pictures are needed.

Pinhole:
- Acquire anterior, LAO, and RAO with the pinhole collimator
- Both obliques should be for the same time and at the same angle of obliquity.
Thyroid Uptake and Scan (continued)

**Processing:**

**Orbiter:**
- Static display 4 on 1 for Orbiter

**E-CAM, Evo, Symbia E:**
- follow workflow (flexible display)

**Both:**
- Label markers on anterior planar image
- Label images with view and pinhole (if applicable)

**Items Required For Complete Study:**

- Raw data of all images to PACS
- Lightbox/savescreen of all images to PACS, labeled as above
- Thyroid probe computer printout showing 4-6 and 24-hour uptakes, as applicable
- Transfer all digital images to PACS
- Complete the examination in RIS