

## Thyroid Uptake and Scan

<b>Special Instructions</b>	<p>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).</p> <p>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).</p> <p>Also ask the patient if they are taking thyroid hormone replacement (such as Synthroid, levothyroxine, Levoxyl, or Cytomel). This examination should <u>not</u> be performed in patients taking thyroid hormone replacement.</p> <p>Hyperthyroidism is the most common indication for this study. Consult with the radiologist if any other indication is provided.</p> <p><b>To be performed at UNMH and SRMC.</b></p>
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<b>Radiopharmaceuticals:</b>	I-123 sodium iodide I-131 sodium iodide/Tc-99m pertechnetate
<b>Dose (Adult/Pediatric):</b>	Refer to Nuclear Medicine Dose Chart
<b>Route of Administration:</b>	<u>I-123 or I-131</u> : Oral <u>Tc-99m pertechnetate</u> : Intravenous
<b>Patient Preparation:</b>	<p>Please ensure the following:</p> <ul style="list-style-type: none"><li>• NPO for least for 4 hours before radioiodine (I-123 or I-131) administration.</li><li>• (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 <u>therapy</u>. 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.</li><li>• If possible, the patient should withhold antithyroid medications (methimazole, PTU, Tapazole) for at least 3 days prior to the examination or therapy.</li><li>• If possible, the patient should not have received iodinated contrast (usually from a CT examination) within the past 2 weeks.</li></ul>
<b>Equipment Setup:</b>	Collimator: <ul style="list-style-type: none"><li>• <u>Orbiter</u>: LEAP, pinhole</li></ul>

## 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