

# ULTRASOUND PROTOCOLS



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## Thyroid Ultrasound Protocol Guideline

<b>Indication</b>	Thyroid nodule, thyroid enlargement, f/u thyroid cancer
<b>Prep</b>	<p>The patient should be in the supine position with the neck extended by cloth, roll or bolster.</p> <ul style="list-style-type: none"> <li>• If the neck is thin and the thyroid very superficial, an offset gel pad may help visualization, and improve detail.</li> <li>• Patient swallowing raises the thyroid gland in the neck and may be helpful to image the lower poles.</li> <li>• Have the patient point out a palpable lump or a tender spot.</li> </ul>
<b>Procedure</b>	<ol style="list-style-type: none"> <li>1. Apply ultrasound gel to the patient’s neck and begin by placing the transducer transversely in the midportion of the neck until the thyroid tissue is identified (use the carotid artery and jugular vein as landmarks).</li> <li>2. Make sure the texture is uniform bilaterally. A dual linear format is helpful in observing texture differences.</li> <li>3. Scan anteriorly and image the isthmus, which connects the right and left lobes of the thyroid gland. (Note: it is important to use light pressure on the neck, otherwise tissue becomes compressed, or a small lesion can become displaced.</li> <li>4. Scan to the right of isthmus and image the right lobe of the thyroid gland.</li> <li>5. Scan anteriorly and image the superior pole of the right lobe, above the level of the isthmus.</li> <li>6. Scan back down to the level of the isthmus and image the mid-pole. Measure the transverse dimension of the right lobe.</li> <li>7. Scan slightly posteriorly and image the inferior portion of the right lobe of the thyroid, below the level of the isthmus.</li> <li>8. In sagittal, locate the right carotid artery and scan medially to the right lobe of the thyroid and measure.</li> <li>9. Image the medial, mid and lateral portions of the right lobe and measure mid thyroid</li> <li>10. Scan the left lobe of the thyroid in transverse and sagittal following the same protocol as above.</li> <li>11. While imaging bilateral carotid arteries to document presence of enlarged lymph nodes (generally greater than 1.2cm in long axis or an abnormal morphology)</li> <li>12. Nodules should be measured and labeled in three axes:             <ol style="list-style-type: none"> <li>(1) Max dimension on an axial image,</li> <li>(2) Max dimension perpendicular to the previous measurement on the same image,</li> <li>(3) Max longitudinal dimension on a sagittal image.</li> </ol> <p><b>NOTE:</b> measure nodules one at a time in order. Do NOT do all sag then all trans. Clearly number and label nodules. Meticulous documentation of the nodule location is critical.</p> </li> </ol>

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<b>Evaluation Criteria</b>	<p><b>Real-time evaluation and documentation should include but not be limited to:</b></p> <p><b>Thyroid</b></p> <ol style="list-style-type: none"><li>1) Size and shape of gland (norm: 5cm x 2cm)<ul style="list-style-type: none"><li>• Echogenicity</li><li>• Echo-texture</li><li>• Lesion (cystic or solid)</li></ul></li> <li>a) Margins</li><li>b) Shape</li><li>c) Size</li><li>d) Location</li><li>e) Lobulations (&gt; or &lt;3)</li><li>f) Finger-like extensions</li><li>g) Enhanced through transmission (posterior enhancement)</li><li>h) Posterior attenuation<ul style="list-style-type: none"><li>• Punctate calcifications</li><li>• Fluid collection</li></ul></li></ol> <p><b>Doppler/Color Doppler criteria should include but is not limited to:</b></p> <ol style="list-style-type: none"><li>1) Evaluating the presence or absence of blood flow<ol style="list-style-type: none"><li>I. Internal in mass</li><li>II. External to mass</li><li>III. Laminar flow patterns</li><li>IV. Normal vascularity</li><li>V. Turbulence and mosaics</li></ol></li><li>2) The vascularity of the thyroid gland</li></ol>
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*It is understood that other additional views, Doppler sampling sites, color settings, velocity ratios and measurements etc., will be used by the professional sonographer in evaluating any pathologic or suspected pathologic condition*