The thyroid gland is located in the neck anterior to the trachea between the cricoid cartilage (above) and the suprasternal notch (below) (Figure 1). It consists of a right and left lobe connected by an isthmus. The isthmus covers the second, third, and fourth tracheal rings, and the lobes curve posteriorly around the sides of the trachea and esophagus. The normal gland, weighing 10 - 25 g, is usually invisible on inspection and often difficult to palpate. A goiter is an enlarged thyroid from any cause. In addition to assessing its size, it is important to palpate the thyroid for its shape, mobility, consistency, and tenderness. A normal thyroid is soft, smooth, symmetrical, and non-tender, and it slides upward slightly when swallowing. Symmetrical enlargement of a soft, smooth thyroid suggests endemic hypothyroidism due to iodine deficiency or one of two prevalent autoimmune disorders: Graves’ disease or Hashimoto’s thyroiditis. Thyroid nodules are common and usually incidental; however, 10% of thyroid nodules turn out to be malignant. They may be single or multiple, and are most often firm and non-tender. A tender, symmetrical goiter typically indicates thyroiditis.

Figure 1. Anatomy of the thyroid gland. Illustration of the location and anatomy of the thyroid gland with respect to the neck structures.
Table 1. Symptoms and physical findings for hypo- and hyper-thyroidism.

**Hyperthyroidism**

- Loss
- Anxiety
- Palpitations
- Loose stools
- Heat intolerance
- Irritability
- Fatigue
- Weakness
- Menstrual irregularity

**Hypothyroidism**

- Weakness
- Fatigue
- Cold intolerance
- Constipation
- Weight change
- Depression
- Menorrhagia
- Hoarseness

**Physical exam findings:**

- Tachycardia
- Warm, moist skin
- Lid lag
- Tremor
- Bruit detectable on auscultation (rare)

**Physical findings:**

- Bradycardia
- Dry skin
- Delayed return of deep tendon reflexes

Table 1. Symptoms and physical findings for hypo- and hyper-thyroidism.

**Procedure**

1. **Inspection**
   1. Tip the patient’s head slightly back, and carefully inspect the anterior neck. If visible, the thyroid appears between the cricoid cartilage and suprasternal notch. Check for symmetry, diffuse swelling, and obvious masses.
   2. Have the patient swallow, and observe as the cricoid cartilage, thyroid cartilage, and thyroid gland move up and down.

2. **Palpate**
   Although the thyroid can be palpated from either anterior or posterior positions, the latter approach is traditional.
   1. Ask the patient to slightly flex the neck to relax the sternomastoid muscles.
   2. From behind the patient, reach around with both hands and use your fingers to identify the landmarks from top to bottom: mobile hyoid bone just beneath the mandible, thyroid cartilage with its superior notch, cricoid cartilage, tracheal rings, and suprasternal notch.
   3. Place your index fingers just below the cricoid cartilage.
   4. Ask the patient to swallow as before, and feel for the thyroid isthmus rising up under your finger pads. It is not always palpable. Feel for size, shape, and consistency, noting any nodules or tenderness.
   5. Using the fingers of your right hand, gently move the trachea to the left and feel for the right lobe in the space between the trachea and sternomastoid muscle.
   6. Similarly examine the left lobe.
   7. If a goiter is detected, listen for a bruit by placing the stethoscope over the lateral lobes.

**Summary**

An enlarged thyroid gland, or goiter, is most often associated with normal thyroid gland function (euthyroid), but may be associated with hyper- or hypothyroid conditions. Therefore, thyroid abnormality found on physical examination should prompt a careful evaluation for the systemic signs and symptoms associated with both high and low thyroid hormone levels. A normal thyroid can be difficult to palpate, particularly in patients with large necks. However, its location can be precisely determined by identifying the bony and cartilaginous landmarks nearby: the cricoid cartilage above and the suprasternal notch below. In addition to an increase in size, the gland may show asymmetry, nodularity, or tenderness. Symmetrical goiters and thyroid nodules are not uncommon, and their detection should always prompt further investigation.