Objectives:

After completion of this module, the participant will be able to accomplish the following:

- Identify the thyroid gland and surrounding anatomy with high-resolution ultrasound
- Image the thyroid gland in transverse and longitudinal planes

A Note on RMV Scanhead Selection for Thyroid Gland Imaging:
Appropriate selection of RMV scanheads for Thyroid Gland imaging is critical to the resolution and definition obtained. For the Vevo 770, recommended RMV scanhead are the 708.
THYROID GLAND

Location: The thyroid gland is a horse-shoe shaped organ that can be found in the neck of the mouse. There is a thin isthmus which connects the two lobes and lies anterior to the trachea. The two lobes can be visualized lateral to the trachea. The isthmus is a very thin structure making it difficult to visualize. The carotid arteries can be used as a landmark to locate the thyroid gland, and can be seen posterior and lateral to the thyroid lobes. The salivary glands are a large organ that can be seen anterior to the thyroid and the trachea and is slightly darker (hypo-echoic) in appearance to the more echo-genic (brighter) thyroid gland.

TRANSVERSE SCAN:

Scanhead Position: The probe should be first placed in the probe holder on the rail system in the transverse position with the notch of the transducer to the right. Remember to invert the image so that the animal’s right side is on the left side of the screen.

Figure 1: Image of the thyroid gland and anatomical landmarks with the 708 probe.
Figure 2: Image of the mylohyoid muscle (positioned anterior to the thyroid) with the 708 probe.

Figure 3: Image of the digastric muscles and their association with the thyroid gland (with the 708 probe).
**LONGITUDINAL SCAN:**

**Scanhead Position:** For the longitudinal image of the thyroid gland the notch of the transducer should be placed toward the head of the animal. This means the orientation of the image will be that the head of the animal will be on the left of the screen.

![Figure 4: Longitudinal image of the thyroid gland and associated anatomy with the 708 probe.](image)

The thyroid gland is located in between the trachea and the carotid arteries. By scanning laterally to the trachea the long axis of the thyroid lobes can be seen. A striated linear structure can be visualized anterior to the thyroid gland which is the mylohyoid muscle.

Lateral to the thyroid gland in the longitudinal plane is the carotid artery with its bifurcation into the external and internal branches.
Figure 5: Image of the carotid artery located lateral to the thyroid gland (with the 708 probe).