* Lymph nodes and lymph vessels of the head and neck

Lymph nodes of the head and neck are very numerous, and may be divided into two groups.

1. **Superficial groups** are situated around the junction of the head with the neck. They drain all the superficial structures of the head and some deep parts. A few scattered, superficial nodes are found along the external and anterior jugular veins. These drain to the deep cervical nodes that also receive lymph from a separate group of nodes lying behind the pharynx (**retropharyngeal** nodes).
2. **Occipital** lymph nodes are few small nodes lie on the upper end of trapezius. They drain the occipital part of the scalp and the upper part of the back of the neck to the upper deep cervical lymph nodes.

3.Retro auricular lymph nodes lie on the superior part of the sternocleidomastoid, posterior to the auricle and drain the posterior half of the side of the head and the posterior surface of the auricle to the deep nodes.

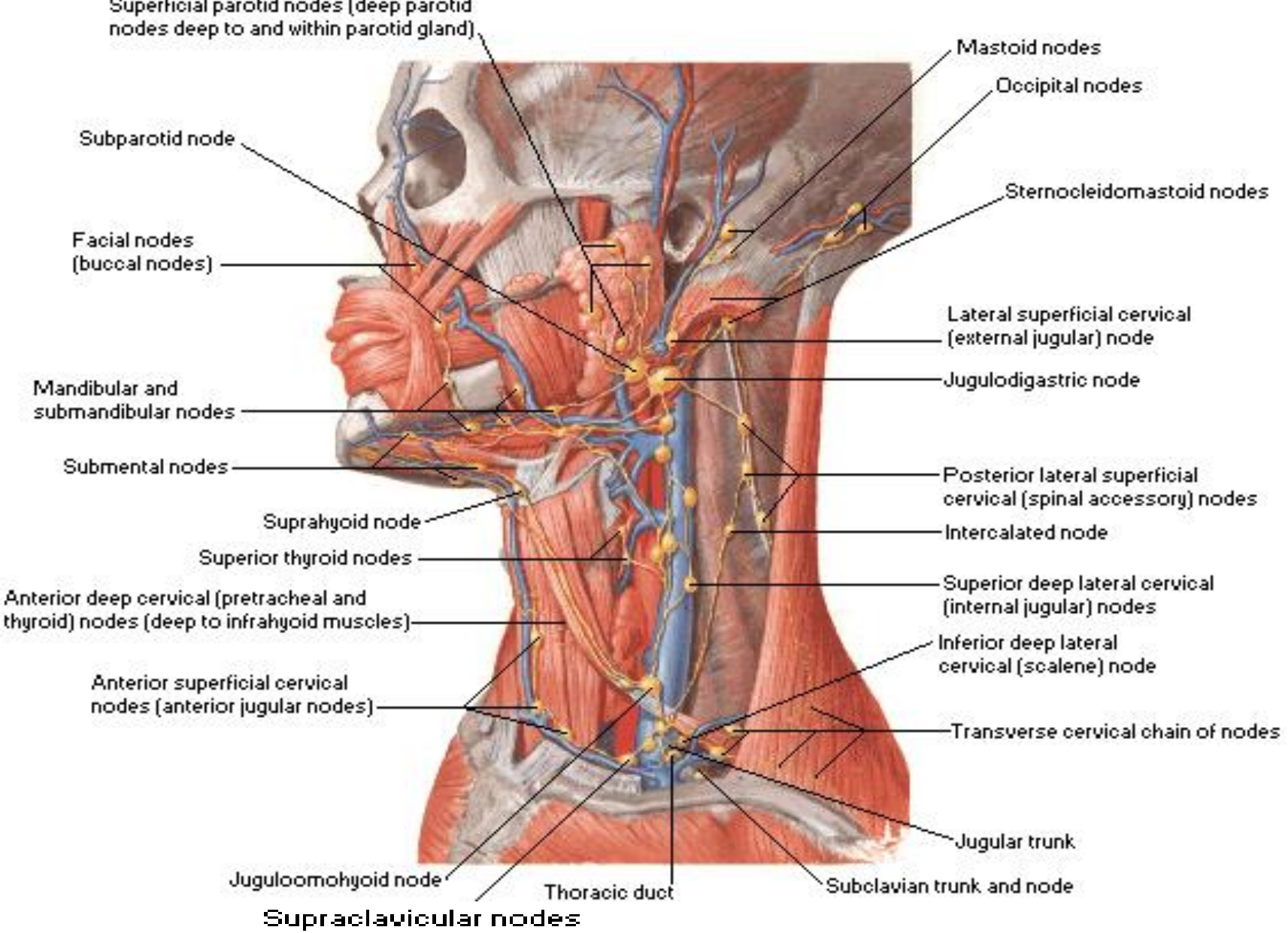
4. Parotid lymph nodes are several small nodes scattered through the parotid gland to drain most of the auricle, external acoustic meatus, the temporal and infratemporal fossae, the middle ear, auditory tube and upper molar teeth and gums.

5. Submandibular lymph nodes lie along the submandibular gland and drain it and sublingual gland, the side of the tongue and posterior part of the floor of the mouth, most of the teeth and gums, part of the palate and the anterior parts of the walls of the nasal cavity.

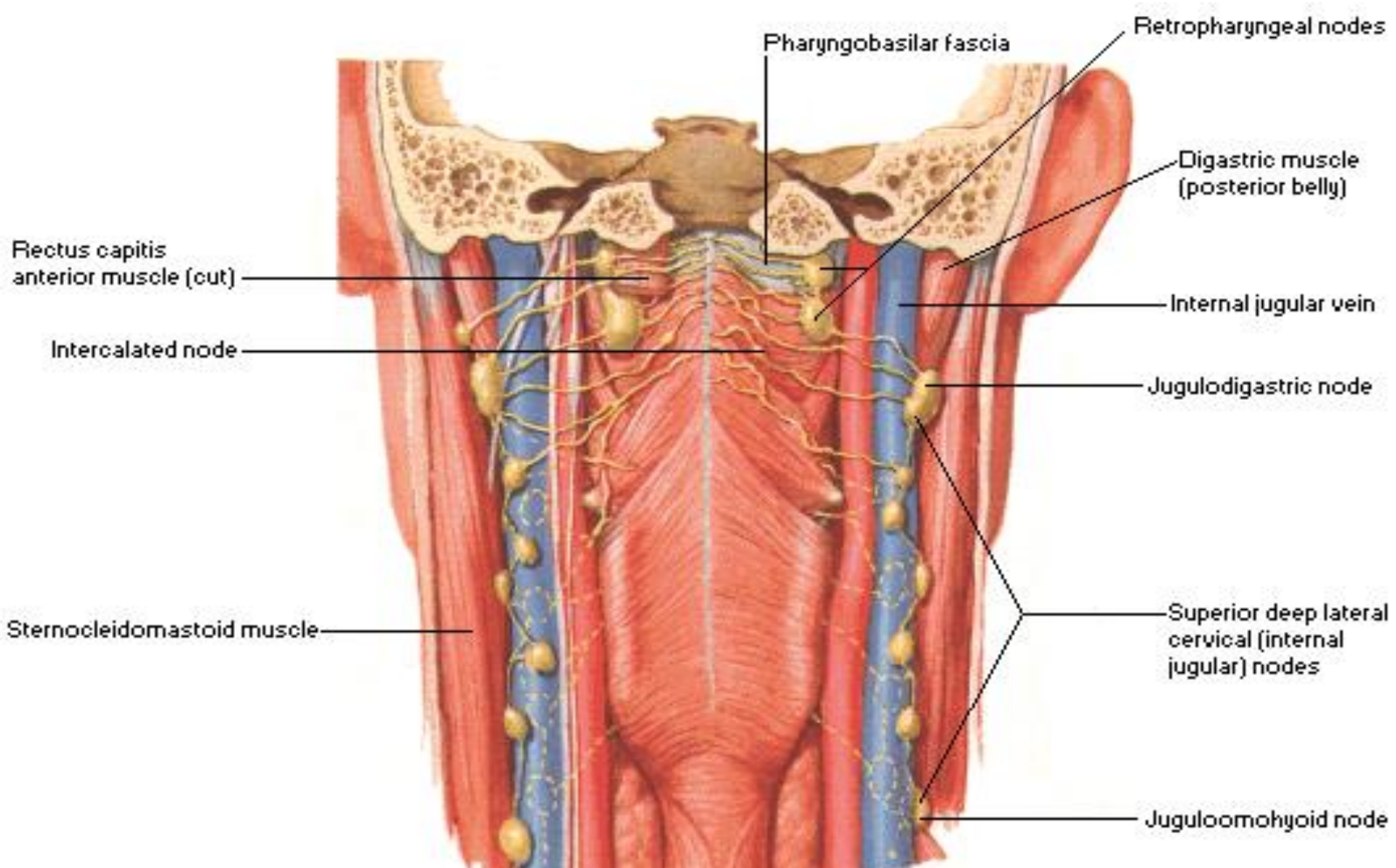
6. Submental lymph nodes lie on the fascia covering mylohyoid, between the anterior bellies of the digastric muscles to drain the incisor teeth and gums and the anterior part of the floor of the mouth.

7. Retropharyngeal lymph nodes are few lies in the posterior wall of the upper pharynx to drain the oropharynx and nasopharynx, the palate, nose and paranasal sinuses, auditory tube and middle ear.

B. Deep groups consists of vertical chain arranged along the internal jugular vein, divided into upper and lower groups by omohyoid. **Jugulodigastric** that drains the palatine tonsil and tongue, and **Jugulo – omohyoid.** Both are linked by afferent and efferent vessels, and receive lymph from all the other groups. Their final efferent pathway for all the lymph of the head and neck is the **jugular lymph trunk** at the root of the neck that enters either the **thoracic duct (left)** or the **internal jugular vein (right).**



Lymph vessels and nodes of oral and pharyngeal regions.



Posterior view of lymphatic drainage of pharynx.

Thyroid gland: Is a highly vascularized organ located anteriorly in the neck, deep to the platysma, sternothyroid and sternohyoid muscles, and extending from the 5th cervical (C5) to the 1st thoracic (T1) vertebrae. The thyroid is one of the larger endocrine glands, weighing 2-3 grams in neonates and 18-60 grams in adults, and is increased in pregnancy.

The gland consists of two lobes (left and right) connected by a thin, median isthmus overlying the 2nd to 4th tracheal rings, typically forming an "H" or "U" shape. Occasionally the isthmus is absent and the thyroid exists as two distinct lobes.

The thyroid gland's firm attachment to the underlying trachea is the reason behind its movement with swallowing.

The thyroid gland is surrounded by a true inner capsule, which is thin and adheres closely to the gland. The capsule sends projections into the thyroid forming septae and dividing it into lobes and lobules. Dense connective tissue attachments secure the capsule of the thyroid to both the cricoid cartilage and the superior tracheal rings.

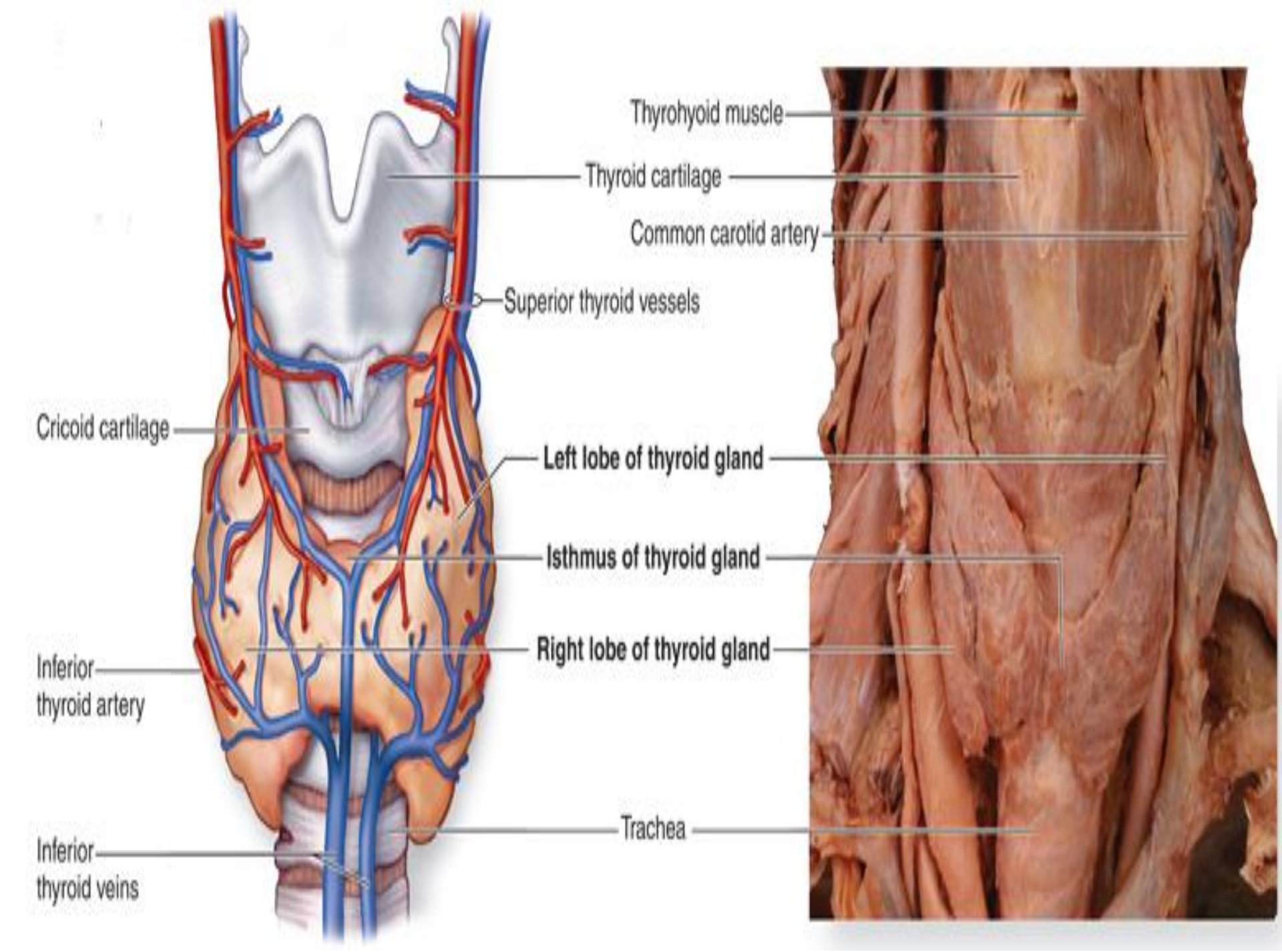
Because the thyroid gland is a hormone secreting organ, it is highly vascularized. It receives its blood supply from the **superior** and **inferior thyroid arteries**. These arteries lie between the fibrous capsule and the pretracheal layer of deep cervical fascia.

There are **three main veins** that drain the venous plexus on the anterior surface of the thyroid. They include the **superior, middle,** and **inferior thyroid veins**, and each drains its respective portion of the thyroid.

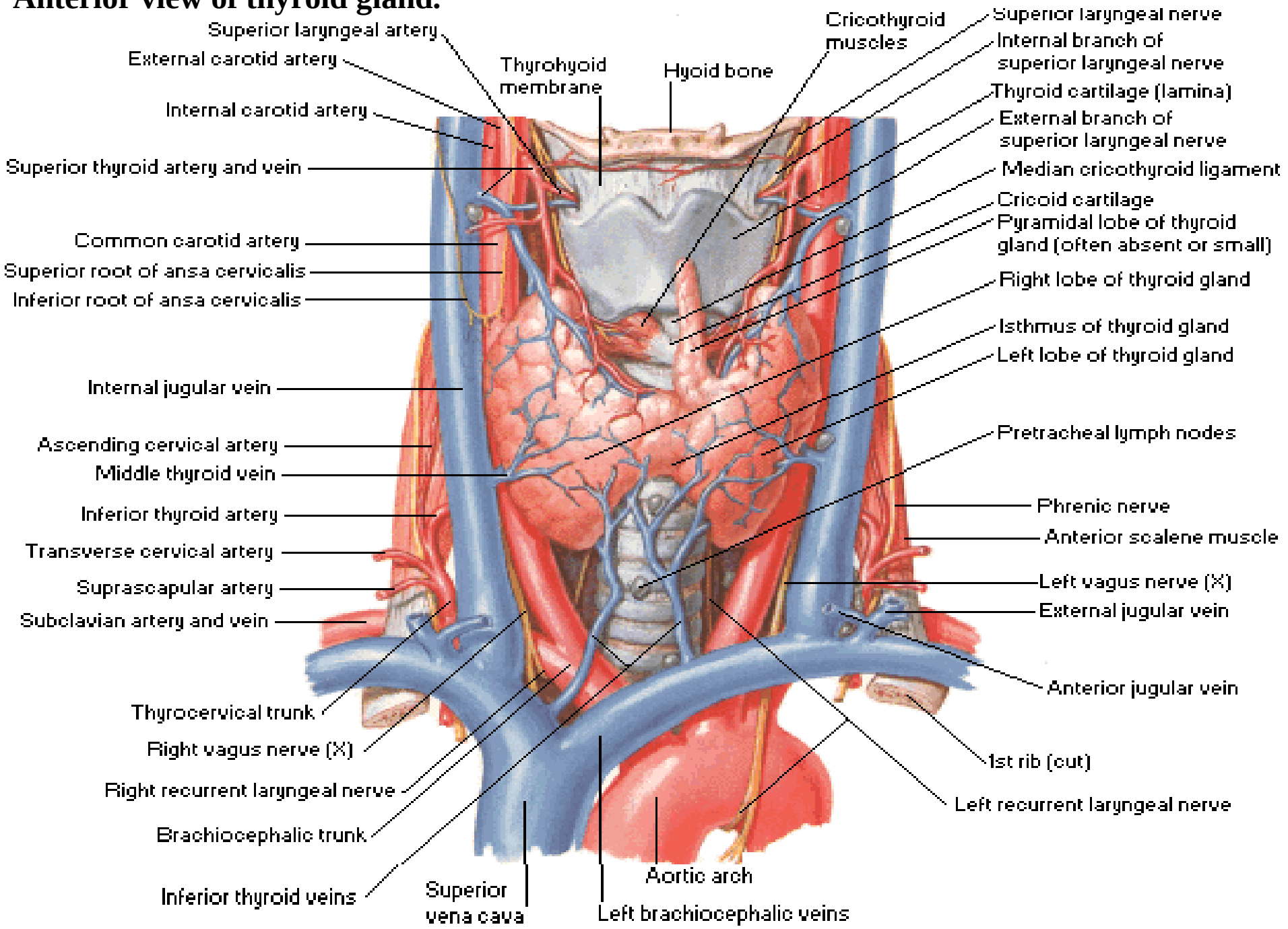
Lymphatic drainage of the thyroid gland is quite extensive and flows multidirectionally. Immediate drainage flows first to the **periglandular nodes**, then to the **prelaryngeal, pretracheal,** and **paratracheal nodes** along the recurrent laryngeal nerve, and then to **mediastinal lymph nodes**.

The **principal innervation** of the thyroid gland is derived from the **superior, middle,** and **inferior cervical sympathetic ganglia** of the autonomic nervous system and **parasympathetic fibers** from the **vagus nerves**. These nerves reach the thyroid gland by coursing with the blood vessels (superior and inferior thyroid periarterial plexuses).

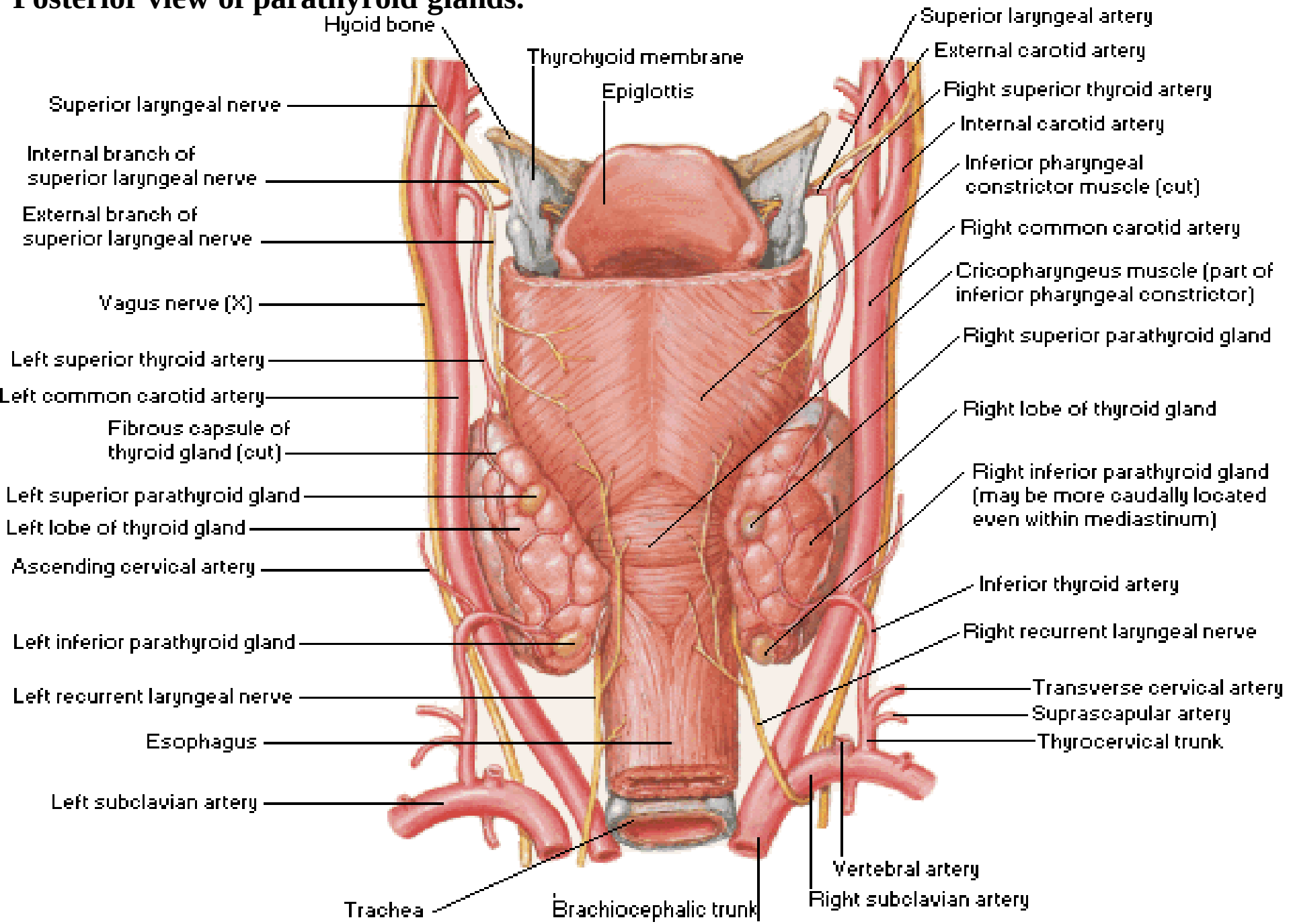
Arteries	Superior and inferior thyroid arteries
Veins	Superior, middle, and inferior thyroid veins
Lymphatics	Periglandular, prelaryngeal, pretracheal, and paratracheal lymph nodes
Nerves	Sympathetic: Superior, middle, and inferior sympathetic ganglia
	Parasympathetic: Vagus nerves


Thyrohyoid muscle
Thyroid cartilage
Common carotid artery
Superior thyroid vessels
Cricoid cartilage
Left lobe of thyroid gland
Isthmus of thyroid gland
Right lobe of thyroid gland
Inferior thyroid artery
Trachea
Inferior thyroid veins

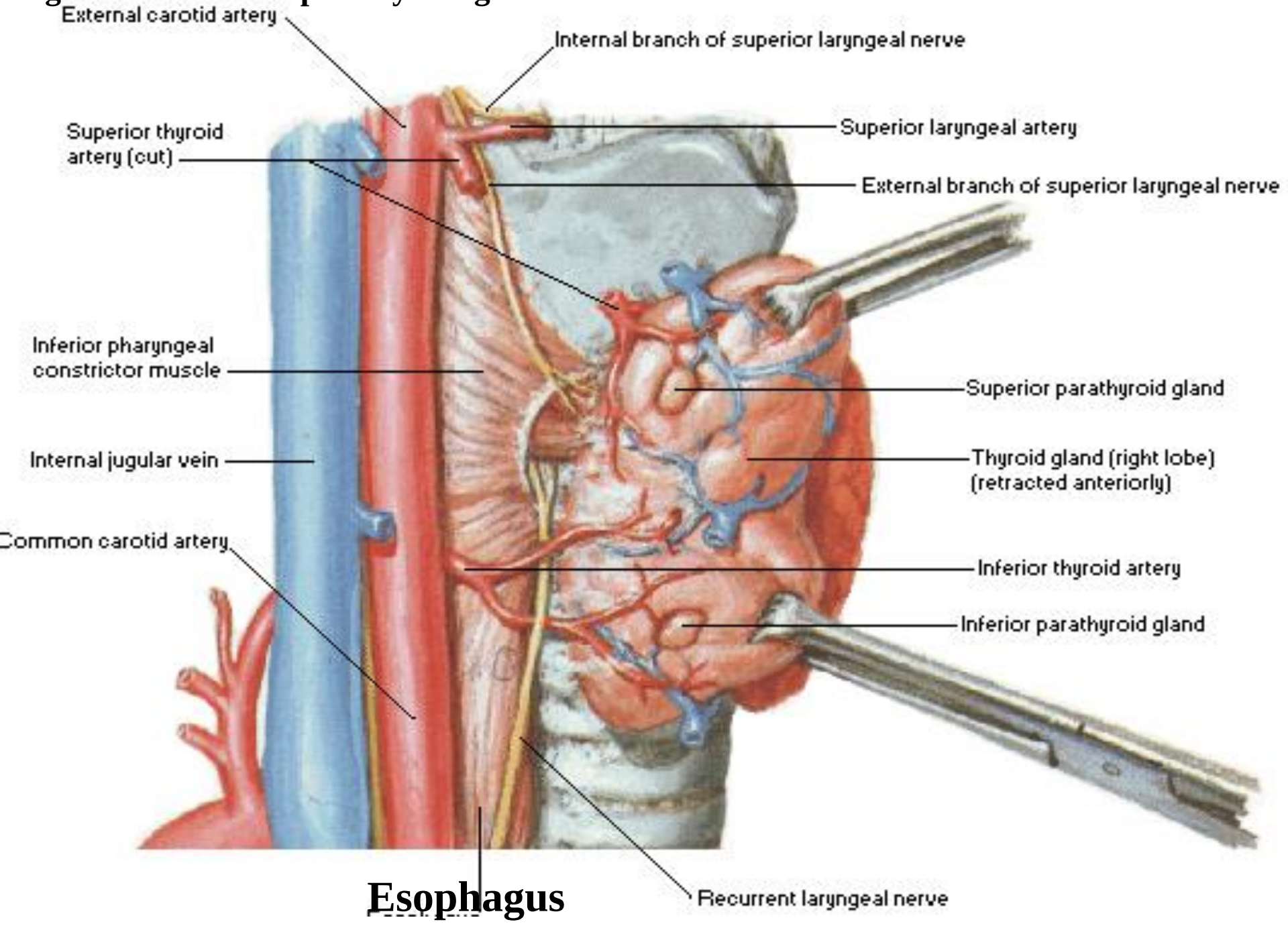
Anterior view of thyroid gland.



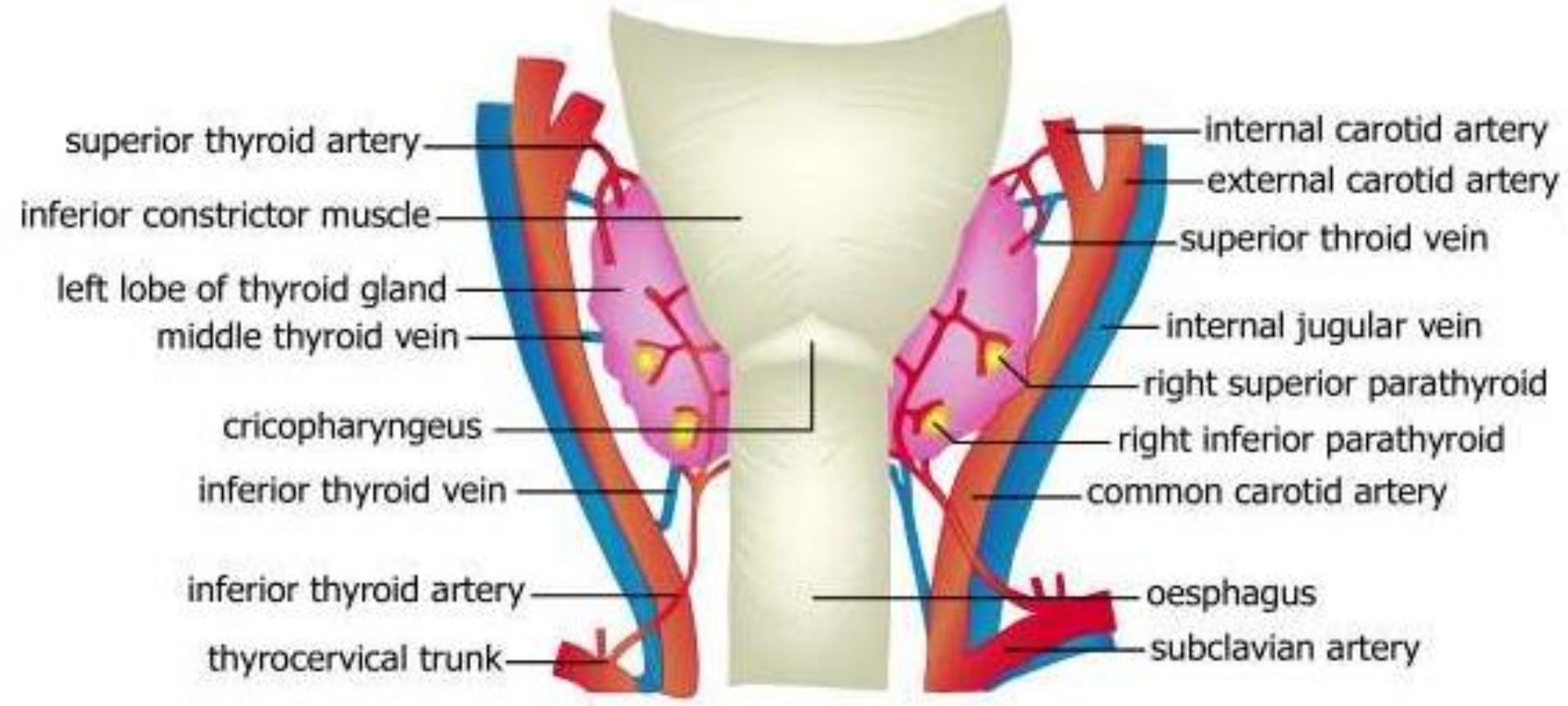
Posterior view of parathyroid glands.



Right lateral view of parathyroid glands.



The **parathyroid glands** are four tiny **glands**, located in the neck, that control the body's calcium levels. Each **gland** is about the size of a grain of rice (weighs approximately 30 milligrams and is 3-4 millimeters in diameter). The parathyroids produce a hormone called **parathyroid** hormone (PTH).



Schematic diagram of the posterior view of the thyroid showing the parathyroid glands and their blood supply

GOOD LUCK WITH BEST WISH

SEE YOU NEXT IN 3rd YEAR