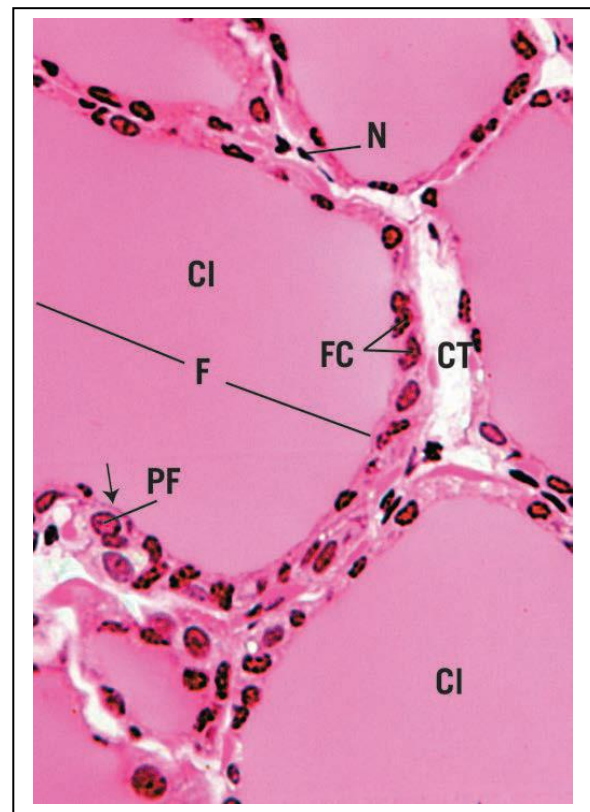
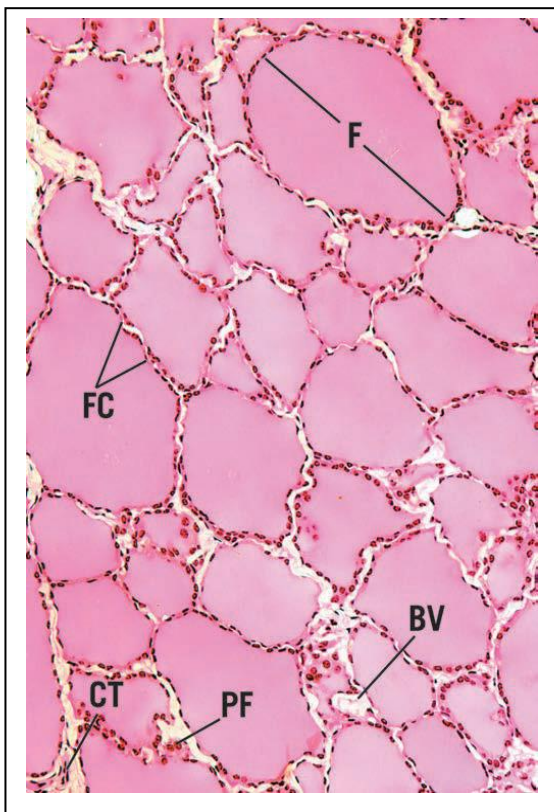


Thyroid Gland

The thyroid gland is characterized by numerous spherical follicles with variable diameters, The **follicular cells** that surround the follicles secrete and store their product in the lumen of the follicles as a gelatinous substance (colloid). The colloid is composed of thyroglobulin (**thyroid hormones T₄,T₃**) are stored in the form of colloid.

In addition to the follicular cells, the thyroid gland contains another secretory cell type, the **parafollicular cells** . They occur as single cells or in clumps on the periphery of the follicles. They stain lightly and are clearly visible in this illustration of canine thyroid. Parafollicular cells synthesize and secrete the hormone **calcitonin**.

The connective tissue septa from the thyroid gland capsule extend into the gland's interior, dividing it into lobules . Extensive distribution of blood vessels, arterioles , venules , and capillaries , is seen within the connective tissue septa and around the individual follicles.



F follicle , **FC** follicular cells ,**PF** parafollicular cells , **CL** colloid ,**CT** connective tissue , **BV** blood vessels .

Adrenal (Suprarenal) Gland

The adrenal glands are paired and are situated near the superior pole of the kidneys. Each gland is surrounded by a connective tissue capsule and consists of an outer cortex and an inner medulla.

The adrenal cortex is subdivided into three concentric

Zones :

1. **zona glomerulosa** : The cells in this zone are arranged into ovoid groups. The cytoplasm of these cells contains sparse lipid droplets, and nuclei stain dark. This zone produces **aldosterone** .
2. **zona fasciculata** : whose cells are arranged into columns or plates with radial arrangement, the nuclei of these cells are vesicular. In this zone **cortisol and cortisone** are produced .
3. **zona reticularis** : It is composed of small, dark cells arranged in irregularly anastomosing cords , the cells of the zona reticularis are believed to produce **sex steroids**(Androgens).

The **medulla** of adrenal gland is composed of large, granule-containing **chromaffin cells** arranged in short cords. There are two types of chromaffin cells :one produces **epinephrine**, while the other manufactures **norepinephrine** . Additionally, large **autonomic ganglion cells** are also present. A characteristic of the medulla is the presence of large veins

