

# Identification of Reproductive glands.

In this section, only the primary reproductive organ having major endocrine function, testis, and ovary, has been included but, the students must remember, both the male and female reproductive systems include a number of other accessory reproductive glands, prostate, seminal vesicle, uterus are few to mention.

## Testis

### Introduction:

These are paired glands located in the scrotal sac outside the body cavity. The testis has both endocrine and reproductive functions. The structural and functional unit of the reproductive part is constituted by seminiferous tubules that are involved in spermatogenesis or production of sperm. The endocrine part is represented by the interstitial cells of Leydig- responsible for the secretion of androgens.

### Identifying characters:

At low magnification:

1. Covered by a layer of fibrous connective tissue (the tunica albuginea) which extends inwards as septa to divide the testis into lobules.
2. At one end a mass of deeply stained acidophilic connective tissue was observed (the mediastinum) – the site for entry and exit of major vessels.
3. Within mediastinum, a complex tubular structure having reticular appearance was observed (the rete testis).
4. At mediastinal pole, outside the tunica albuginea, a second structure, closely applied to the testis, containing ducts was observed (the epididymis).

At high magnification:

5. Within the lobules, several elliptical structures supported by connective tissue (the seminiferous tubules) were observed. Within the seminiferous tubules Sertoli cell, spermatogonial cells, spermatocytes, and sperm of different maturation stages were observed. (as we are interested in the endocrine part, this part has not been discussed in detail.)
6. Between the seminiferous tubules, in the connective tissue, blood vessels and few cells with round and darkly stained eosinophilic nucleus (the Leydig cells) were observed.
7. These cells have pink cytoplasm (HE) and can be found singly or in cultures.
8. Under oil immersion lens crystals of Reinke could also be observed in the cytoplasm.



## Ovary

### Introduction:

These are paired structures located in the postero-lateral wall of the pelvic region of the abdominal cavity. These have flattened oval structure, and like testis, have both endocrine and reproductive functions. They are the site for oogenesis and synthesis of estrogens and progesterone.

### Identifying characters:

Under low power of magnification:

1. Covered by a layer of fibrous connective tissue capsule the tunica albuginea. (Under the high power of magnification, a single layer of low cuboidal cells was observed above the tunica albuginea – the germinal epithelium. germinal epithelium hard to distinguish under low power).
2. Three distinct layers could be observed-
  - a. Outer deeply stained thickest layer- the cortex.
  - b. Inner relatively lightly stained narrow medulla.
  - c. Hilum – having similar staining property of medulla located at one end of the ovary (HE).

Under high power of magnification:

3. The cortex was found to contain ovarian follicles of different stages of development. Alongside corpus luteum and corpus Albicans.
4. In the cortex, follicles were embedded in the bulk of ovarian tissue called stroma; contains stromal cells, decidual cells, smooth muscles, fat and neuroendocrine cells.
5. The medulla region was found to contain blood vessels embedded in the connective tissue.
6. In the medulla, a special type of round or polygonal cell having characteristics of Leydig cells (the Hilar cell) was observed. These cells may also contain Reinke crystals of Leydig cells.



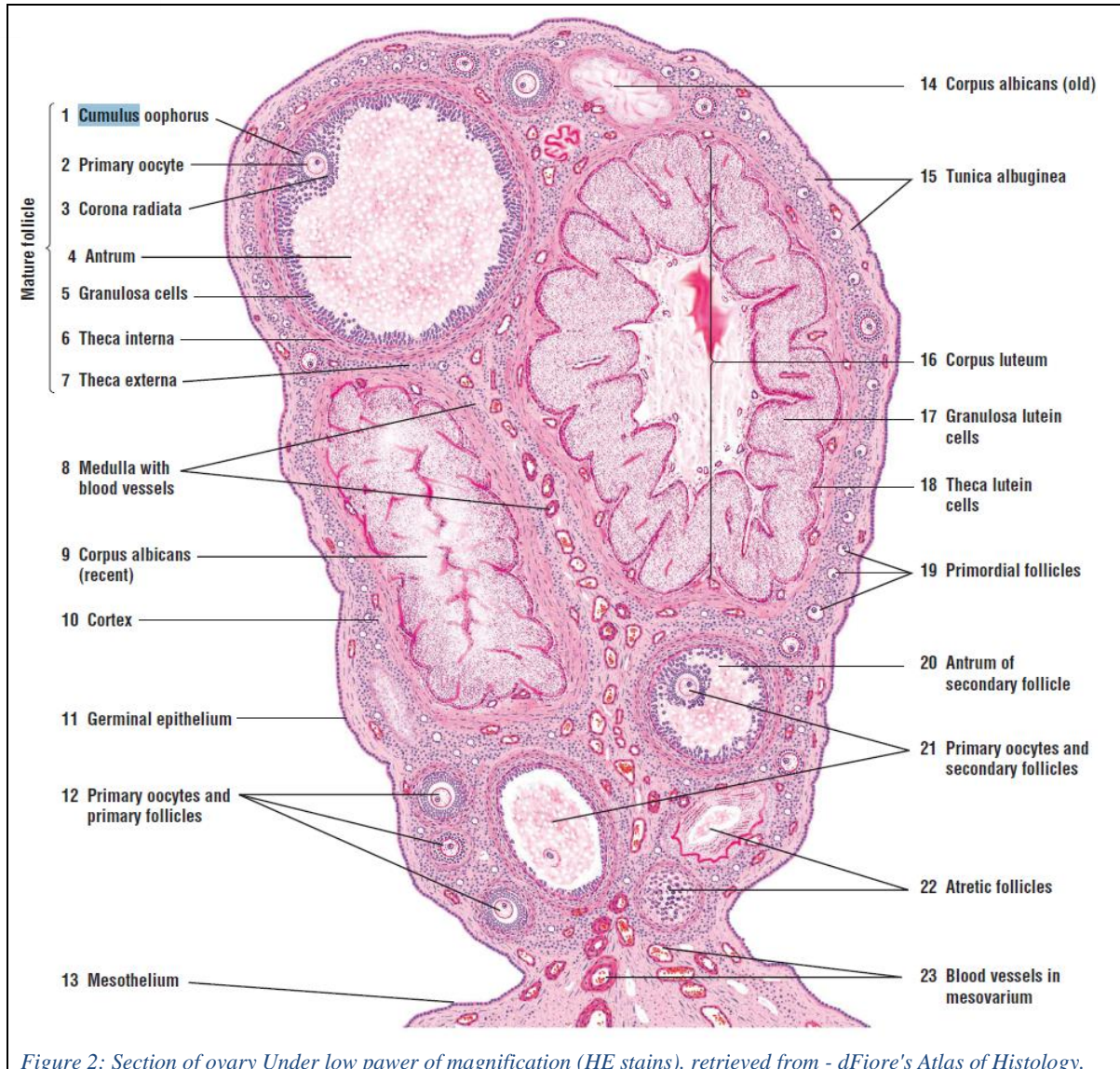


Figure 2: Section of ovary Under low power of magnification (HE stains). retrieved from - dFiore's Atlas of Histology.

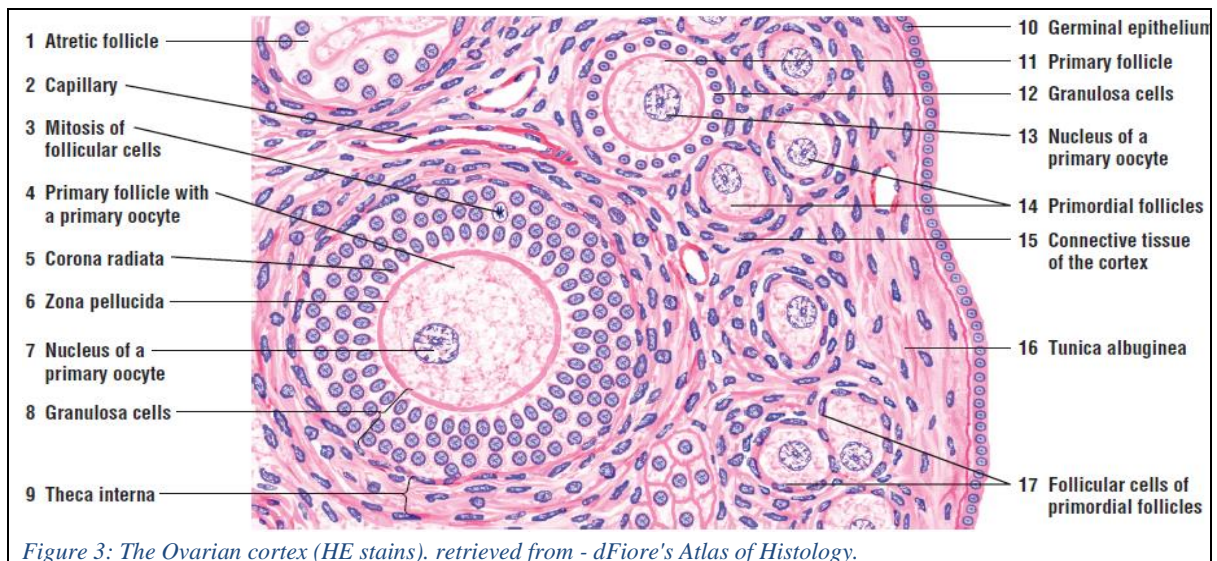


Figure 3: The Ovarian cortex (HE stains). retrieved from - dFiore's Atlas of Histology.