

Gonad (Testis) / (Testes)

- Testes are primary sex organs in humans.
- Each Testis is small, pinkish & oval in shape, but composite structure, about 5cm in length & 2.5 cm in width and 3 cm in thickness.
- Testes are suspended in serotal sac (hydrocoel) by spermatic cord. The cremaster muscles & C.T. forms the spermatic cord.
- Testis is surrounded by three layers:
 - (i) Tunica vaginalis (outer covering)
 - (ii) Tunica albuginea (under the tunica vaginalis)
 - (iii) Tunica vasculosa (lines the tunica albuginea)
- Testis is divided into about 250 lobules or compartments. Each lobule consists of 1-4 highly convoluted seminiferous tubules, Bns & Nerves embedded in loose C.T.
- Seminiferous tubules are lined by germinal epithelial tissue.
- Germinal E.T. consists of two types of cells.
 - Sertoli cells / Supporting cells
 - Spermatogenic cells
- Sertoli cells are named after the discoverer, Enrico Sertoli (1842-1910), Italian histologist.
- These cells are elongated & pyramidal & partially cover the spermatogenic cells.
- They store glycogen to nourish the sperms.
- Sertoli cells provide shape & nourishment to the developing spermatogenic cells.
- Spermatogenic cells are arranged in 4-8 layers that occupy the space between basement membrane & the lumen of the tubule.
- These cells divide several times & differentiate to produce spermatozoa.

- Between the seminiferous tubules lie the Interstitial Cells / Leydig Cells / Puberty @ GMS.
- They secrete Male Sex hormone called Testosterone (Androgen), that controls spermatogenesis & Secondary Sexual Characters.
- About 400-600 Seminiferous tubules open in to 20-30 straight tubules. They form a network called Rete testis. From the Rete testis arises 12-20 v.e (vasa-efferentia). They converge to form duct of the Epididymis, which continues as a v.d (vasa-deferens) beyond cauda Epididymis.
- Spermatozoa (sperms) and Sperm Counts
- After ejaculation, in to female genital tract, the spermatozoa undergoes final step in maturation, a process called capacitation.
- Spermatozoa are about 0.5µm long, slender, motile, flagellated bodies.
- Sperm count is 60,000 per cubic cm in semen.
- 100 million per ml. semen, and (200-800) million per ejaculation.
- Sperm count is per ml. below 60 million per ml. reduce fertilization.
- Below 20 million, called oligospermia, occurs in fever & leads to sterility & absence of spermatozoa called - Azoospermia.
- Sperms move at a rate of 1-3 micrometers & they remain fertile for 48 hrs & survive for more than 48 hrs.

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→ Connective tissue

→ Interstitial cells

→ Mature sperm
Sertoli cells.

→ Seminiferous tubules -

→ Cells of various stages of spermatogenesis.

Fig - shows - T.S. of Testis of a Mammal.