





丘比特之箭射穿了我们的**心**，于是.....

So, After one year

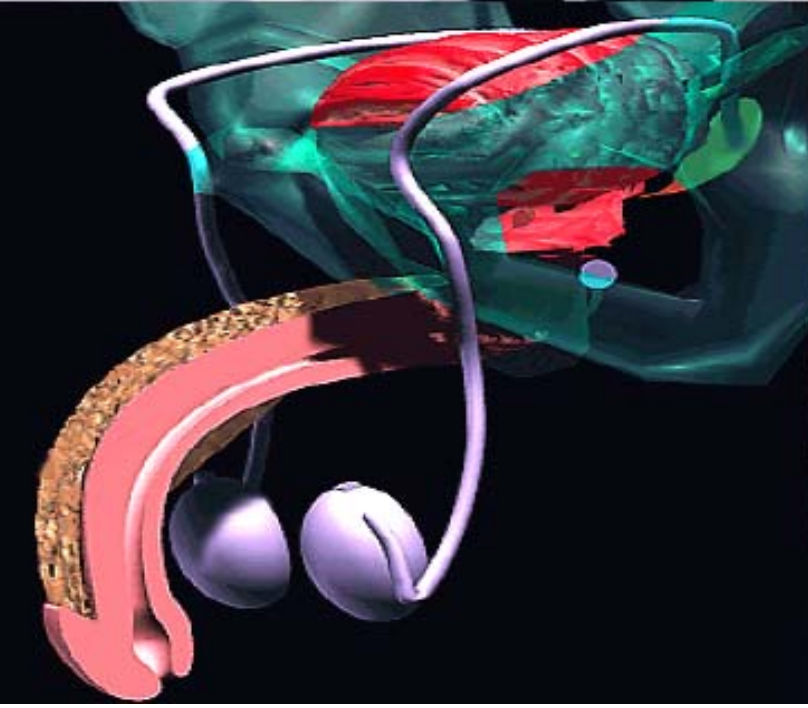


爱的奇迹发生了.....

Questions



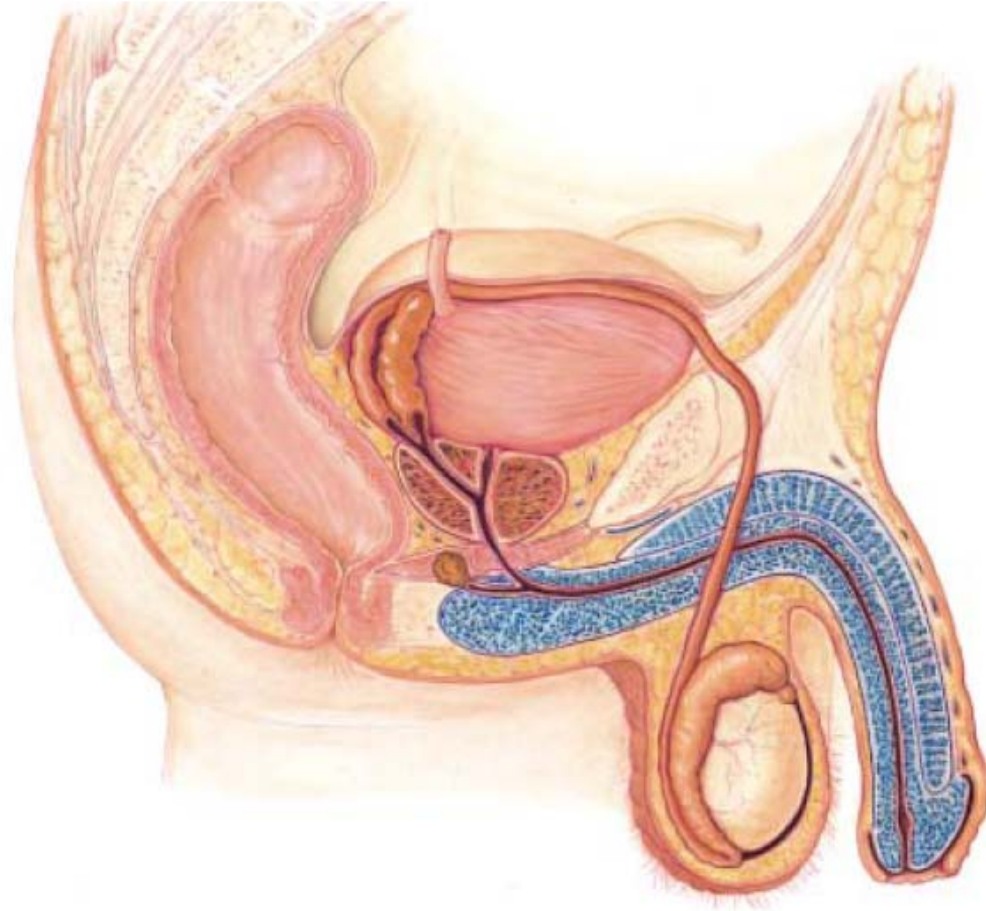
- ❑ Who make the new life?
- ❑ How does the man produce sperm?
- ❑ How does the woman produce oocytes?
- ❑ How do they cooperate with each other to make a new life?





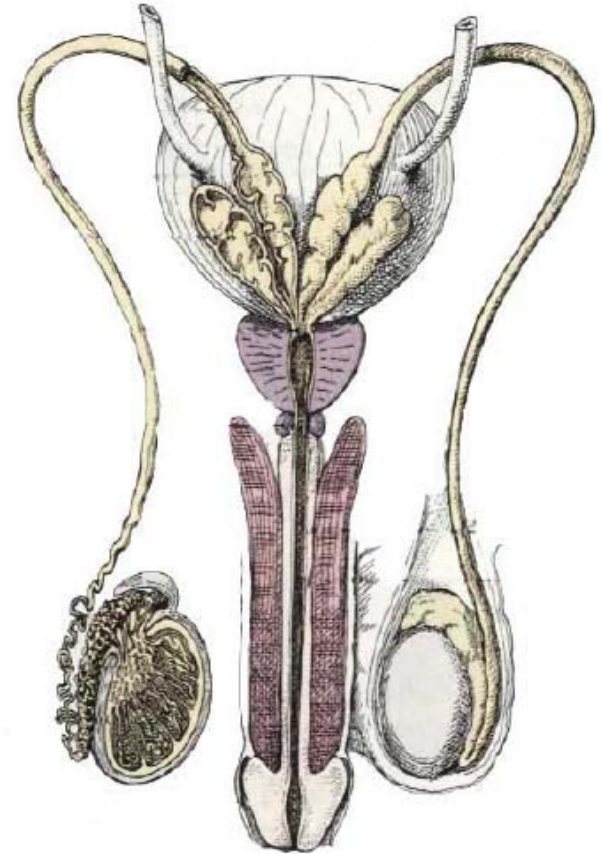
Male Reproductive System

Components



components

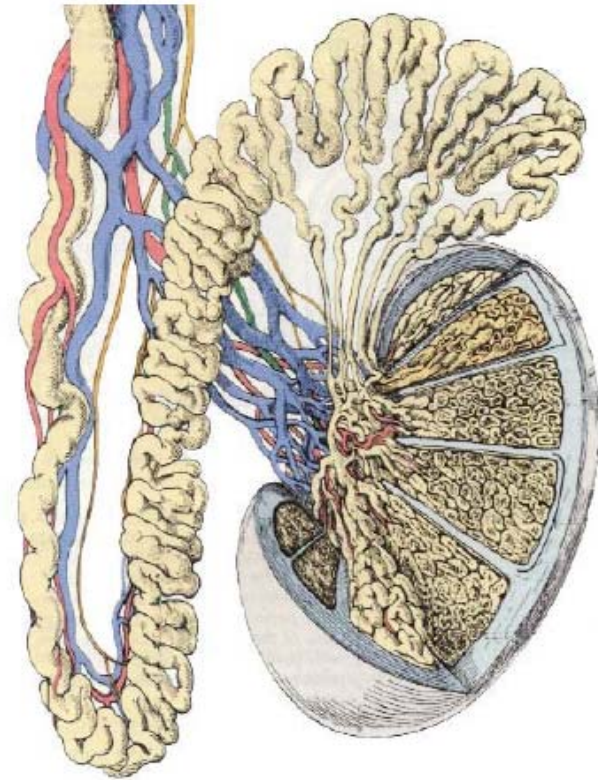
- Internal genital organs
 - Testes
 - Genital ducts
 - Accessory glands
- External genital organs

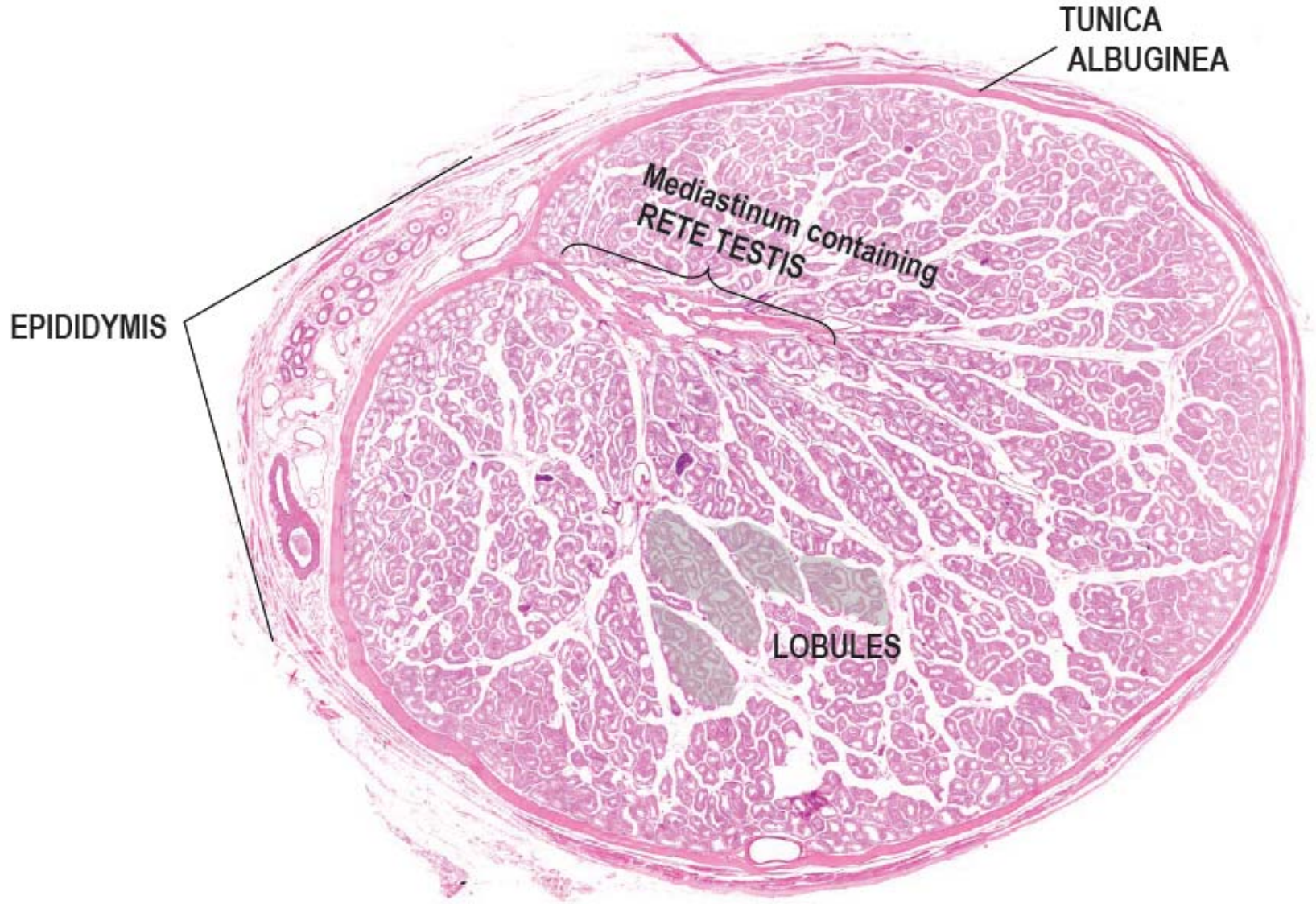


testis

General structure of testis

- **Capsule**
鞘膜脏层
- **Mediastinum testis(睾丸纵隔)**
- **Parenchyma(实质)**
Seminiferous tubule
Tubulus rectus
Rete testis
Interstitial tissue



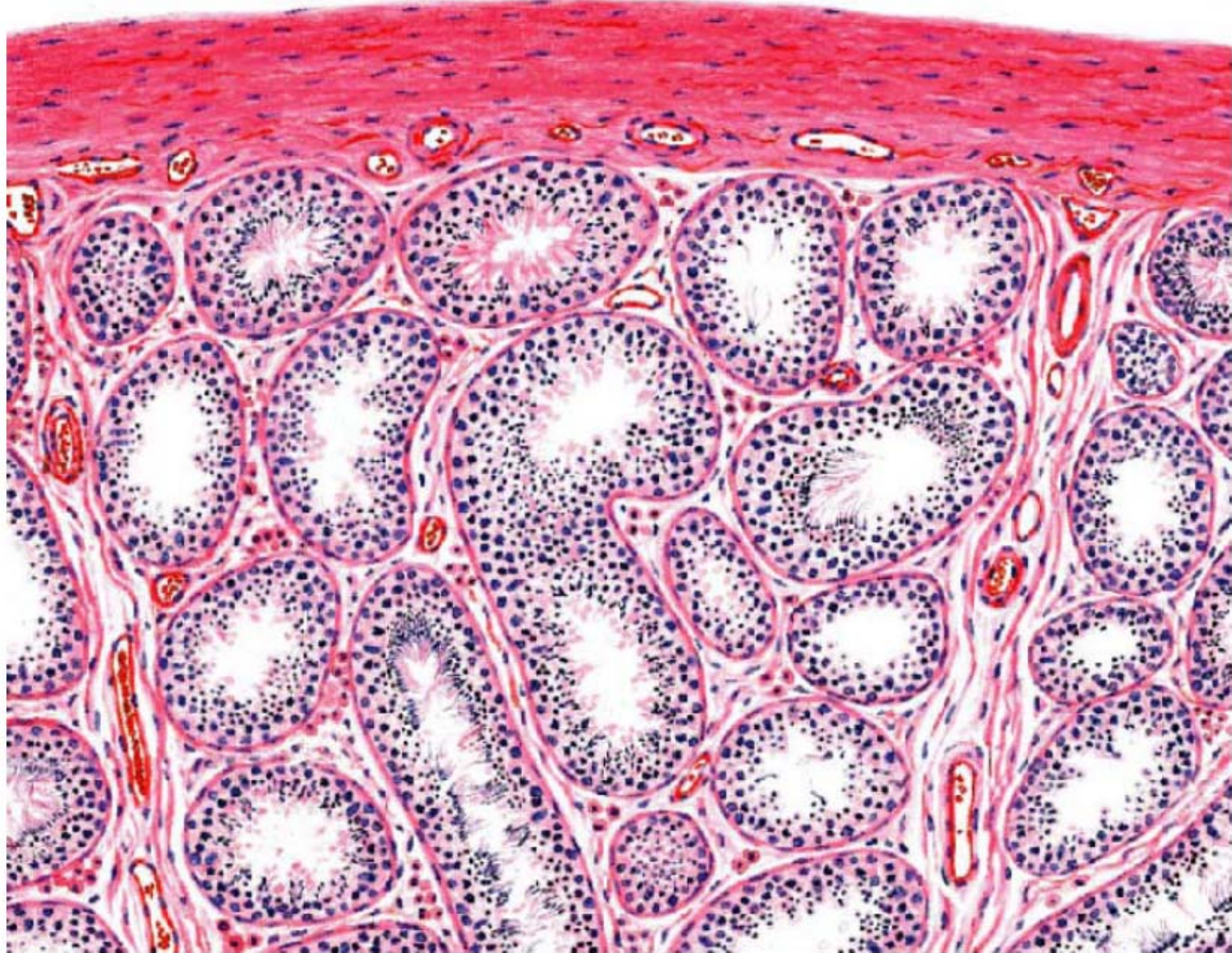


TUNICA
ALBUGINEA

Mediastinum containing
RETE TESTIS

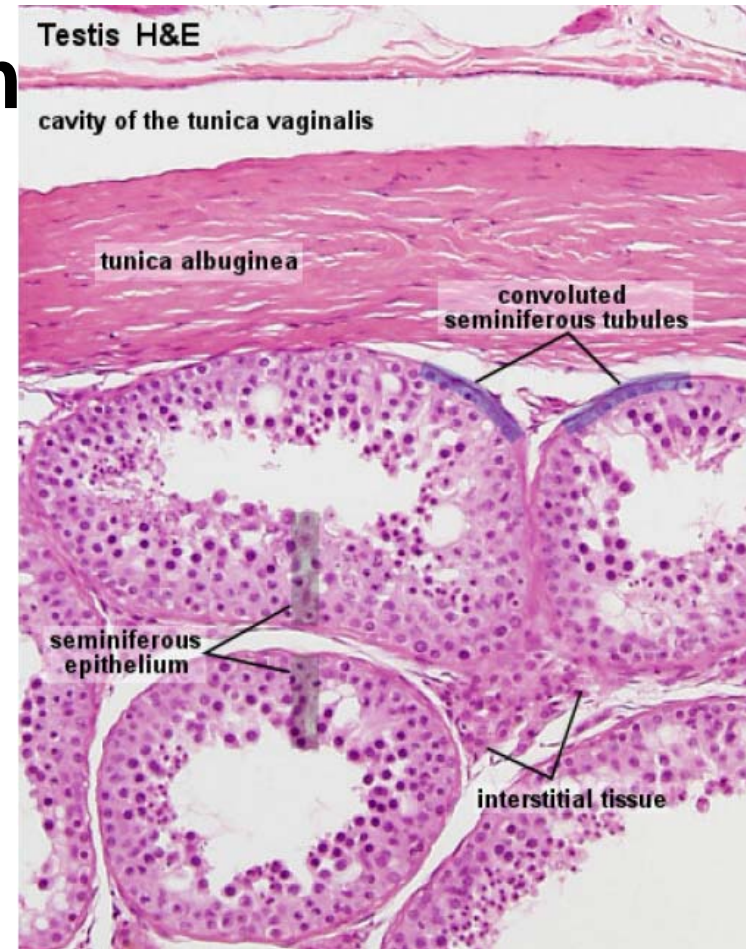
EPIDIDYMIS

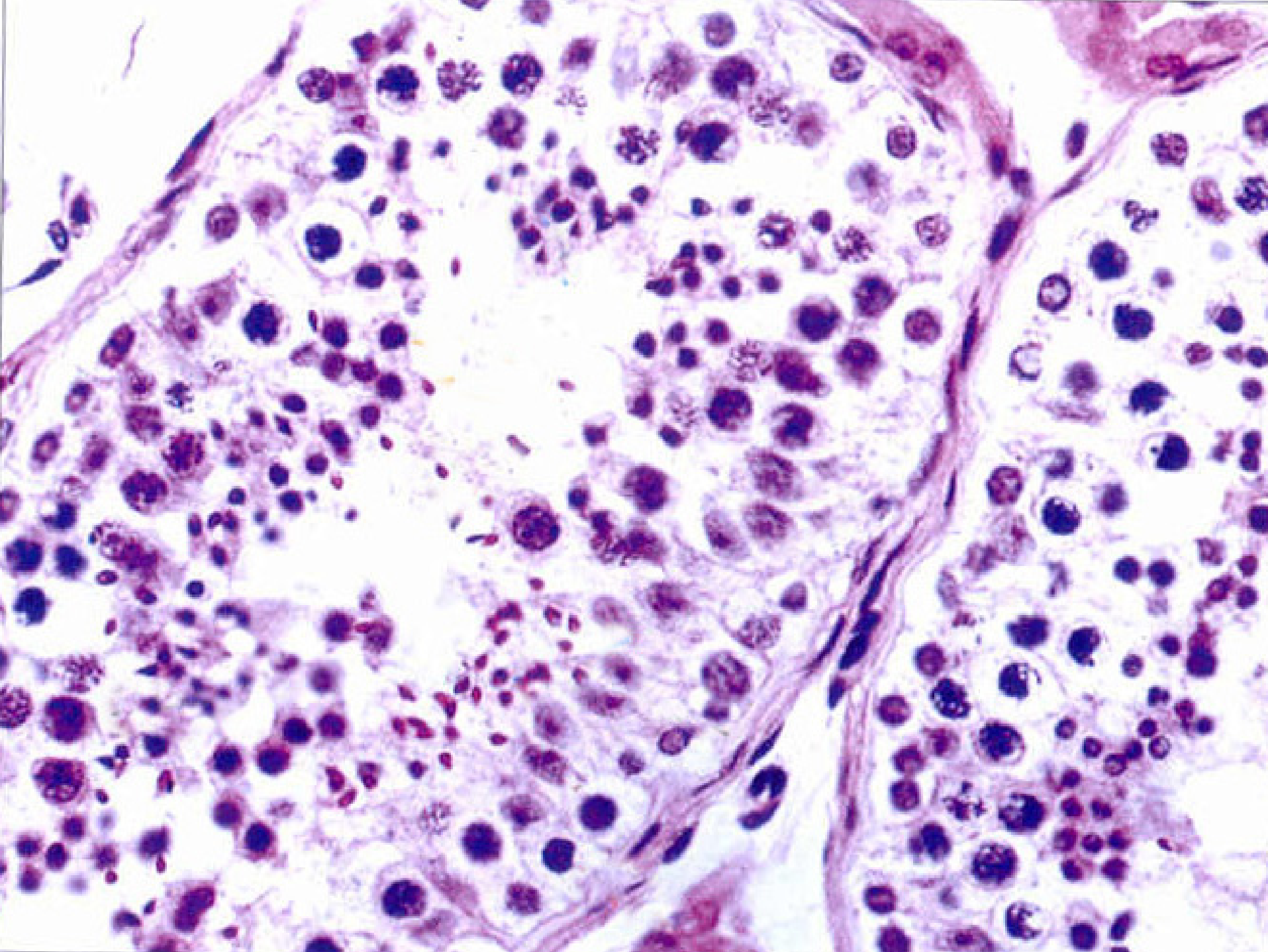
LOBULES



Seminiferous tubule

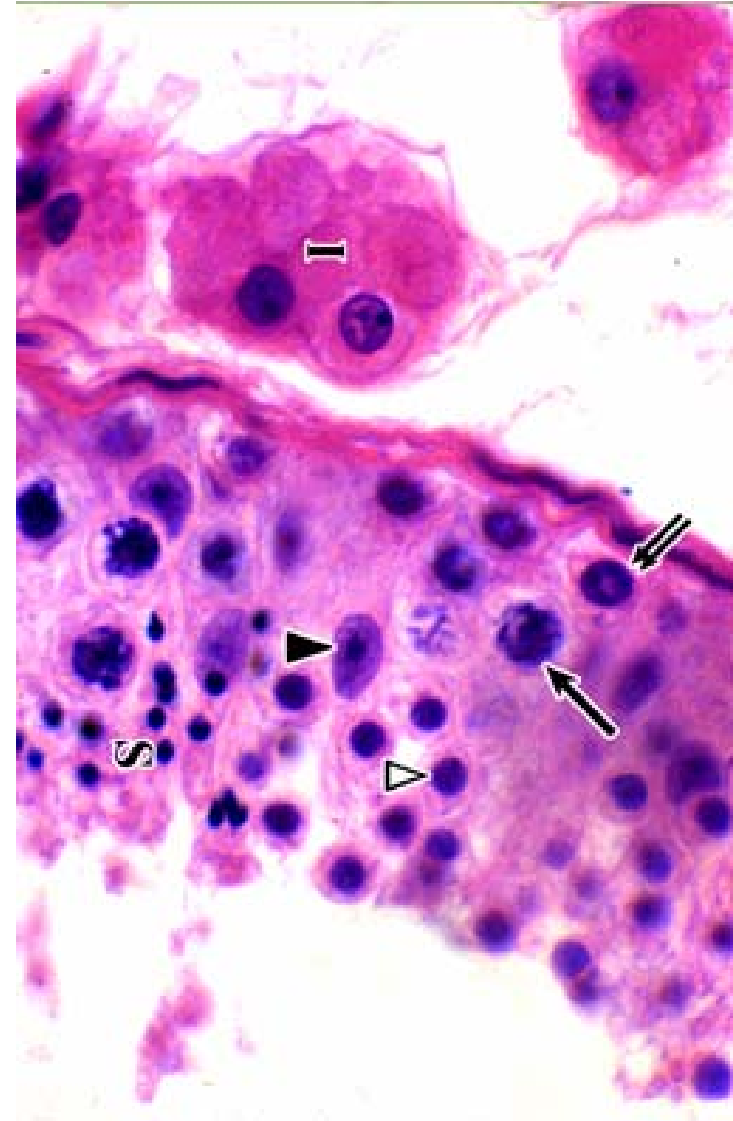
- **Spermatogenic epithelium**
- **Basement membrane**
- **Myoid cell**





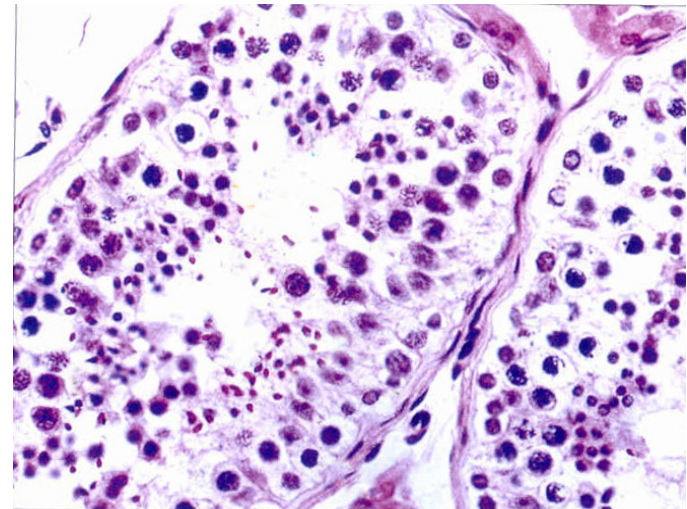
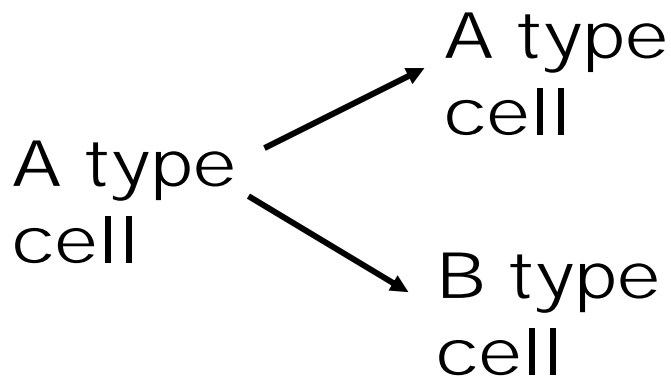
Spermatogenic epithelium

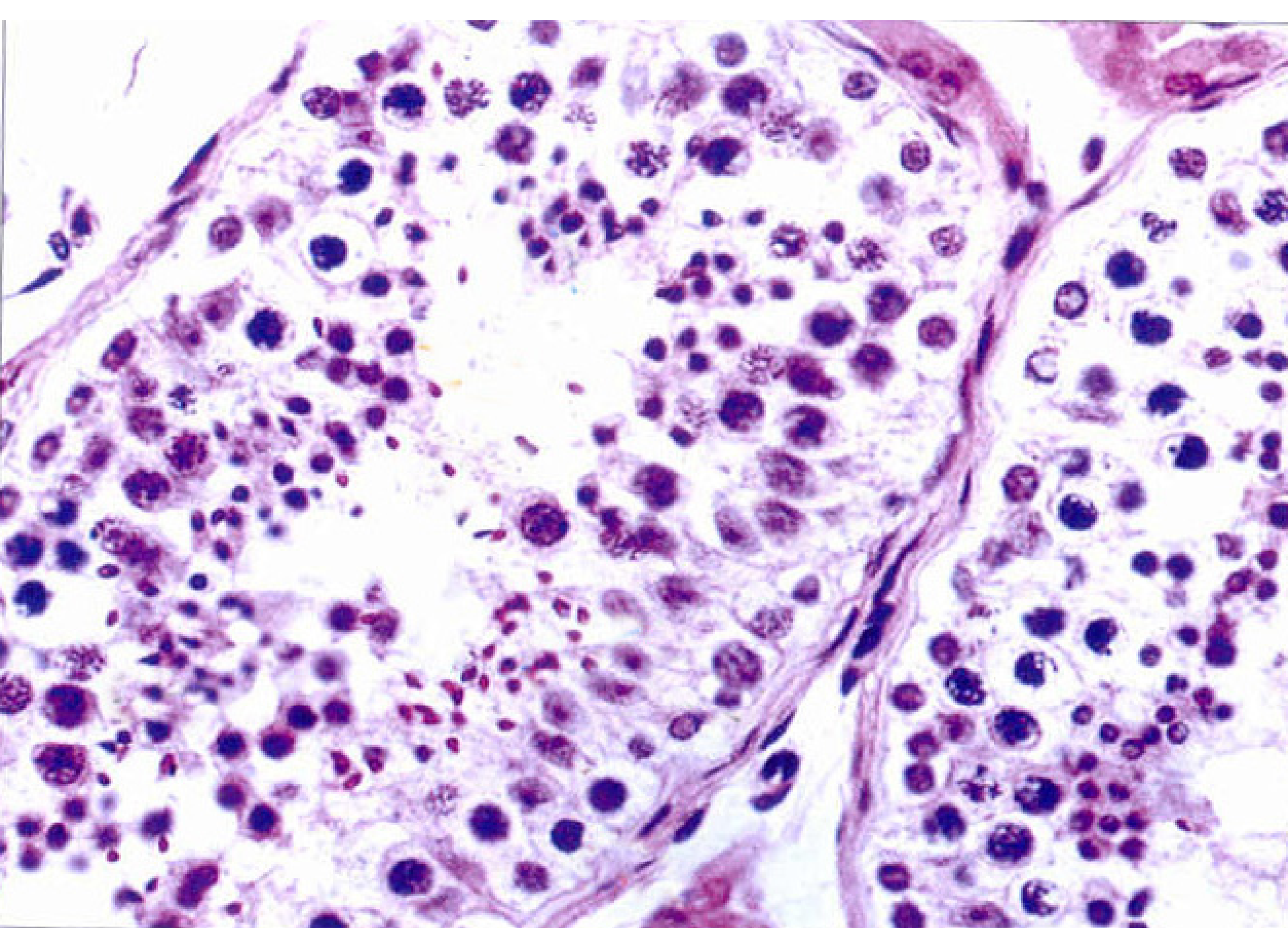
- **Spermatogenic cell**
 - (1)spermatogonium
 - (2)primary spermatocyte
 - (3)secondary spermatocyte
 - (4)spermatid
 - (5)spermatozoon
- **Sustentacular cell**



spermatogonium

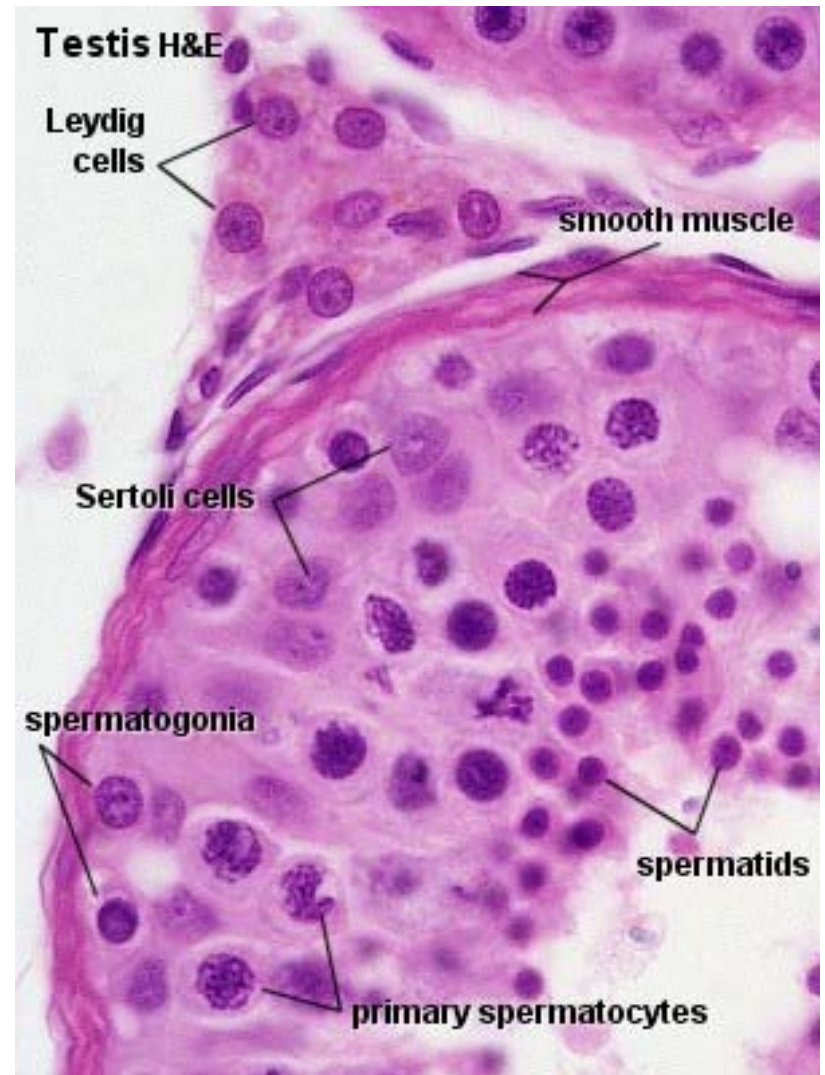
- On the basement membrane
- Divided into A type and B type
- A type cell: stem cell
- B type cell: differentiation cell





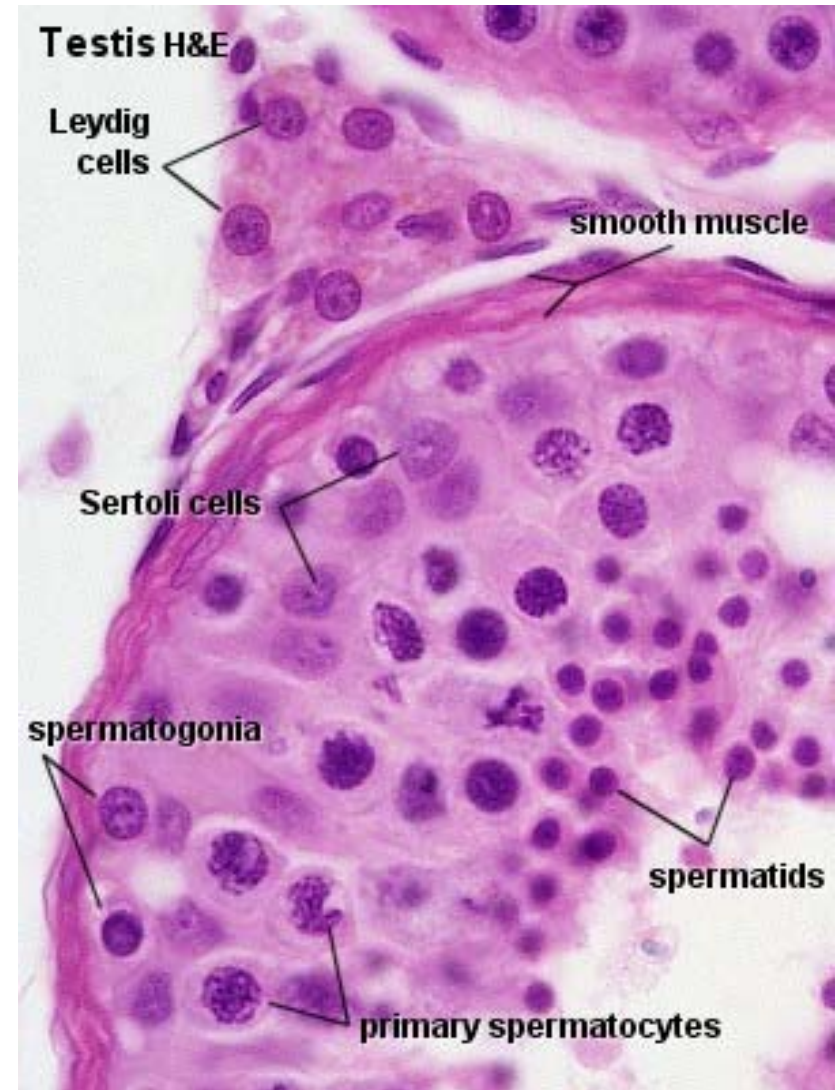
Primary spermatocyte

- From spermatogonium
- Large and round
- Chromosome number: $46, 2n$
- DNA number: $4N$



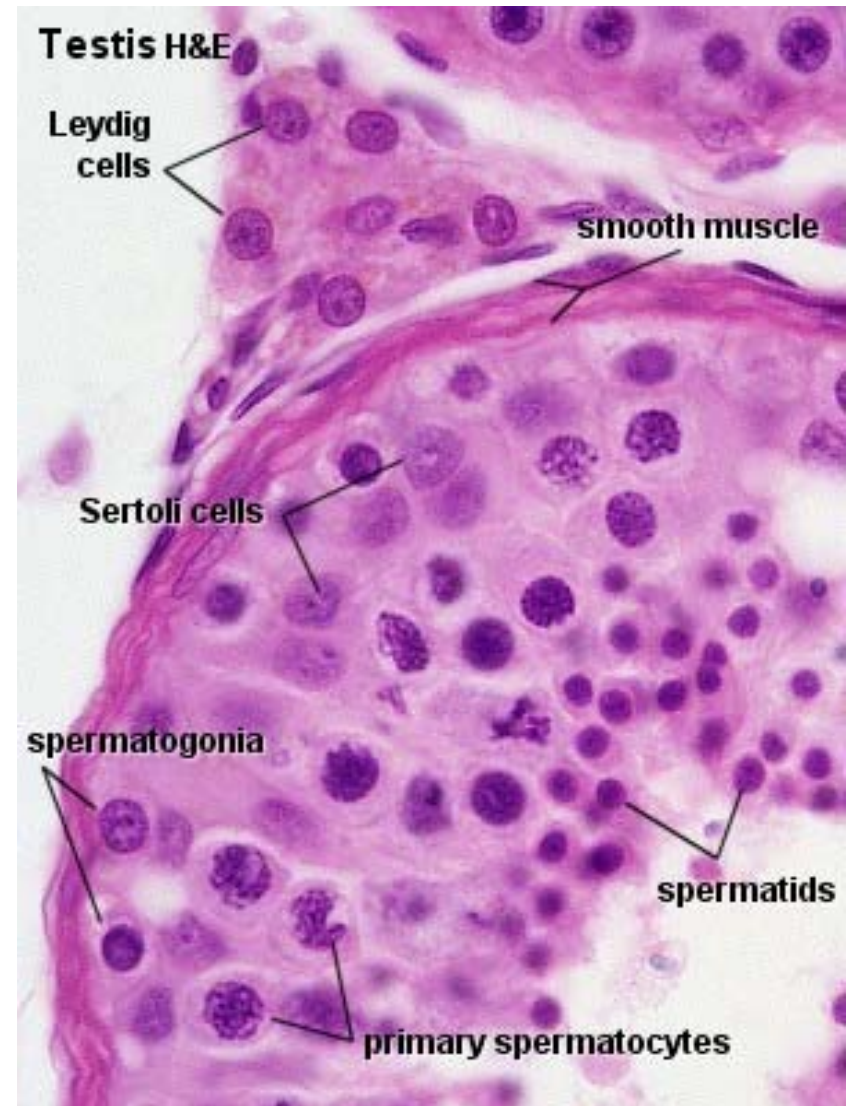
Secondary spermatocyte

- rare in section, smaller than primary spermatocyte, dark nuclei
- Chromosome number: $23, n$
- DNA: $2N$

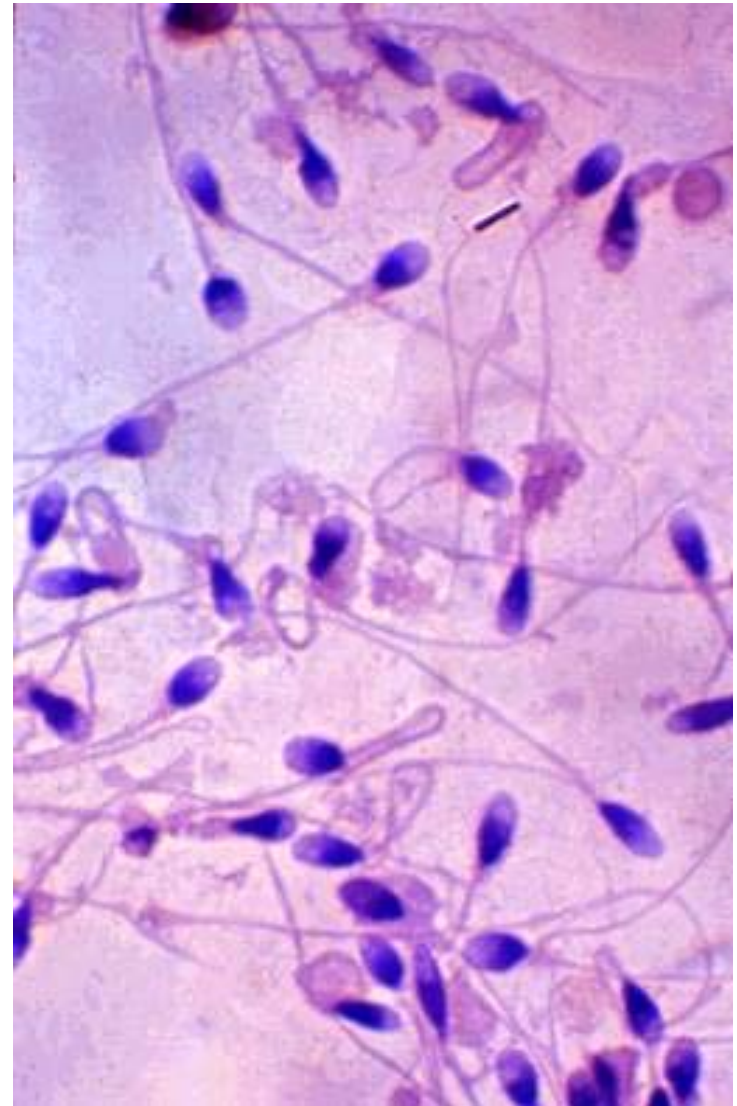
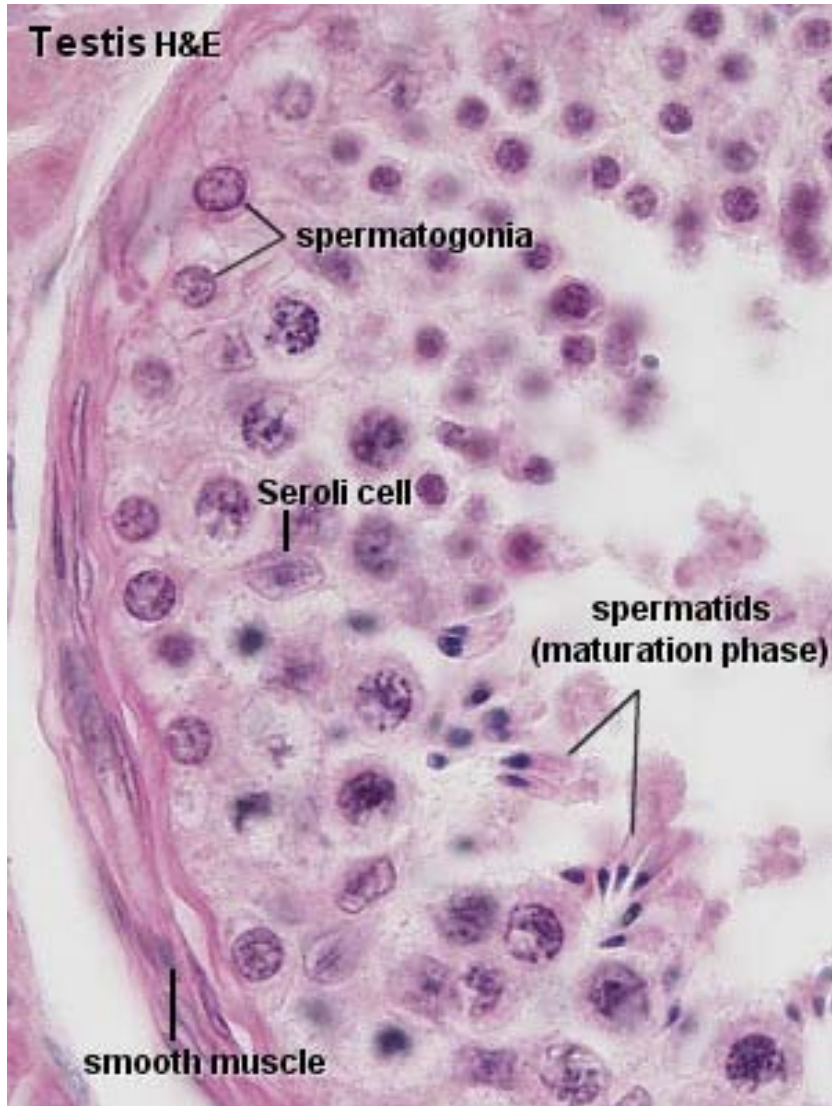


Spermatid

- Small cells with dark nuclei
- Chromosome number: $23,n$
- DNA number: N

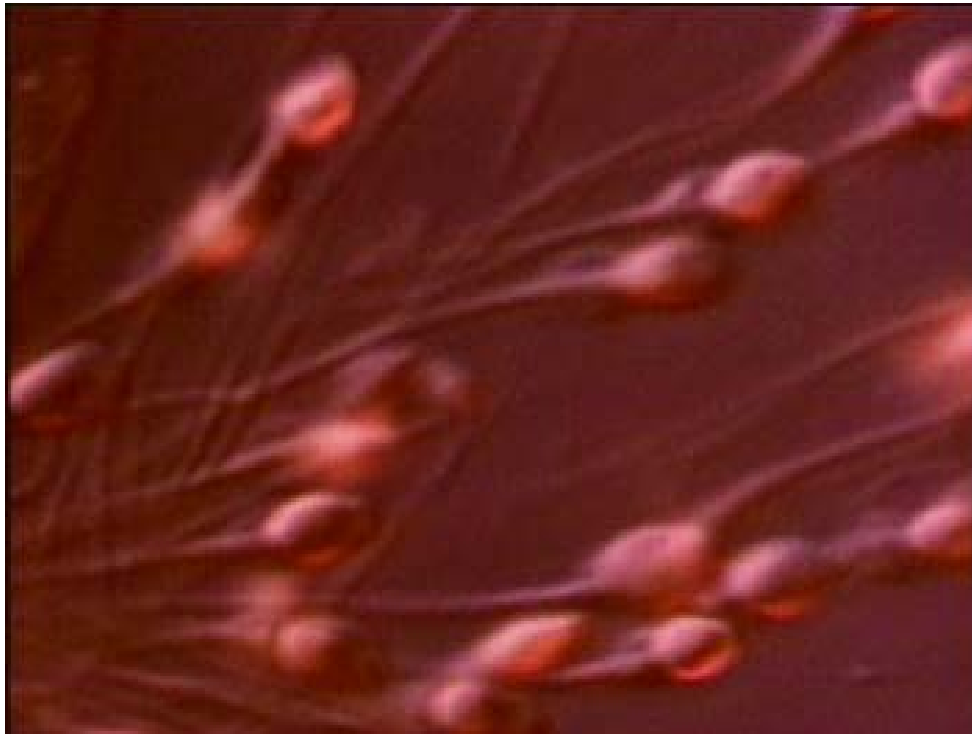


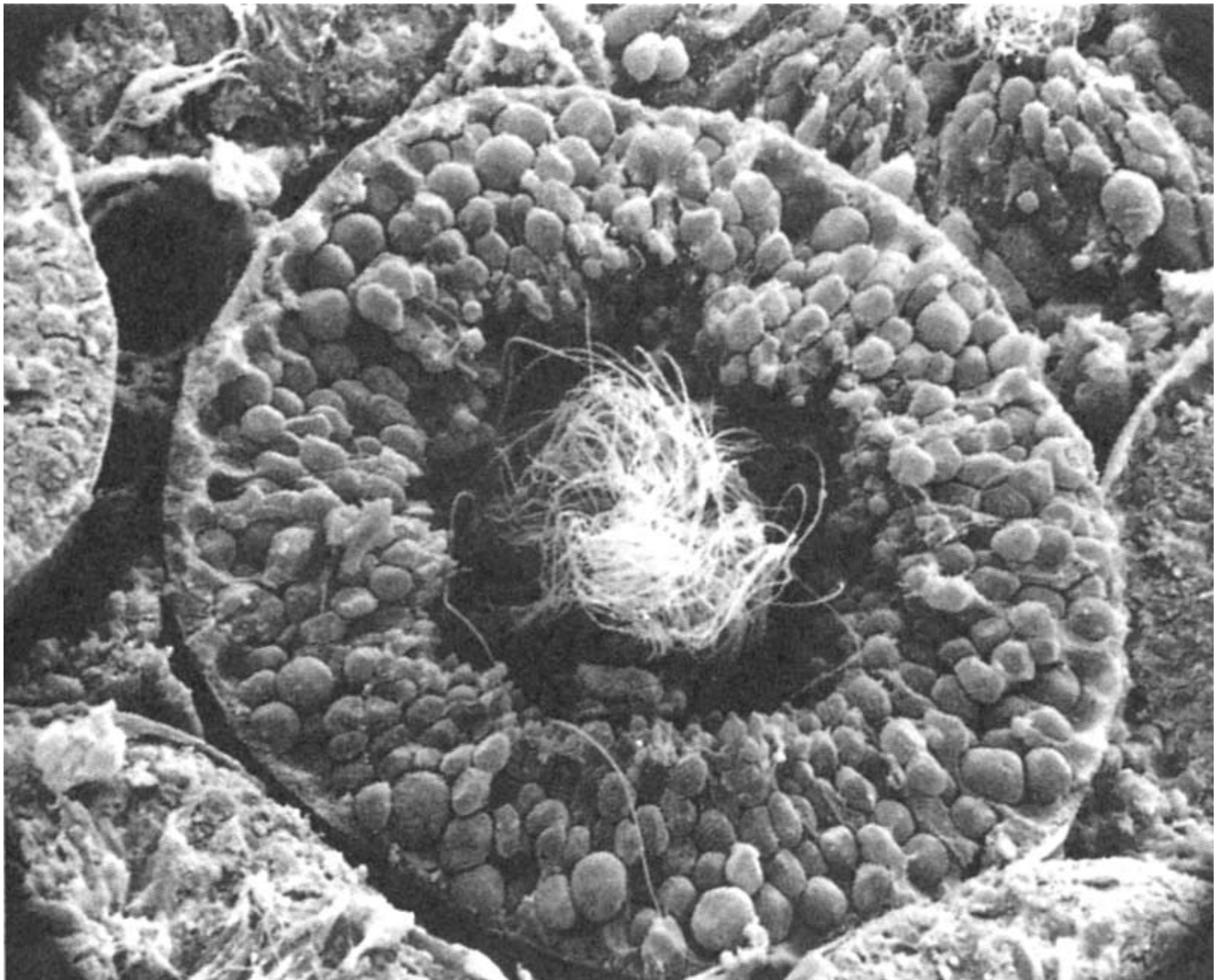
spermatozoon



spermatozoon

- Have head and tail.
- Chromosome number: $23, n$
- DNA number: N





spermiogenesis

- **Definition: spermatid → spermatozoon**

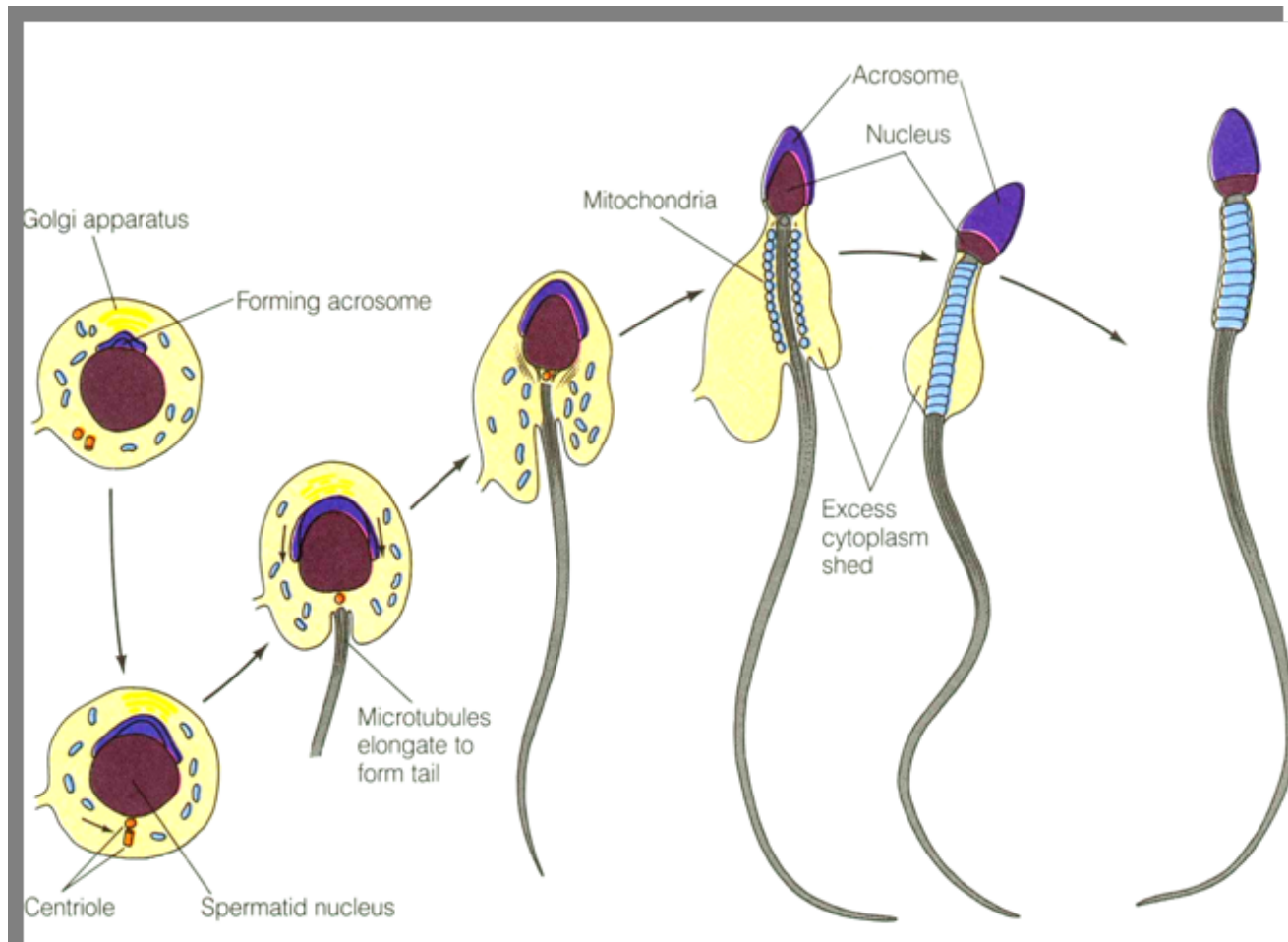
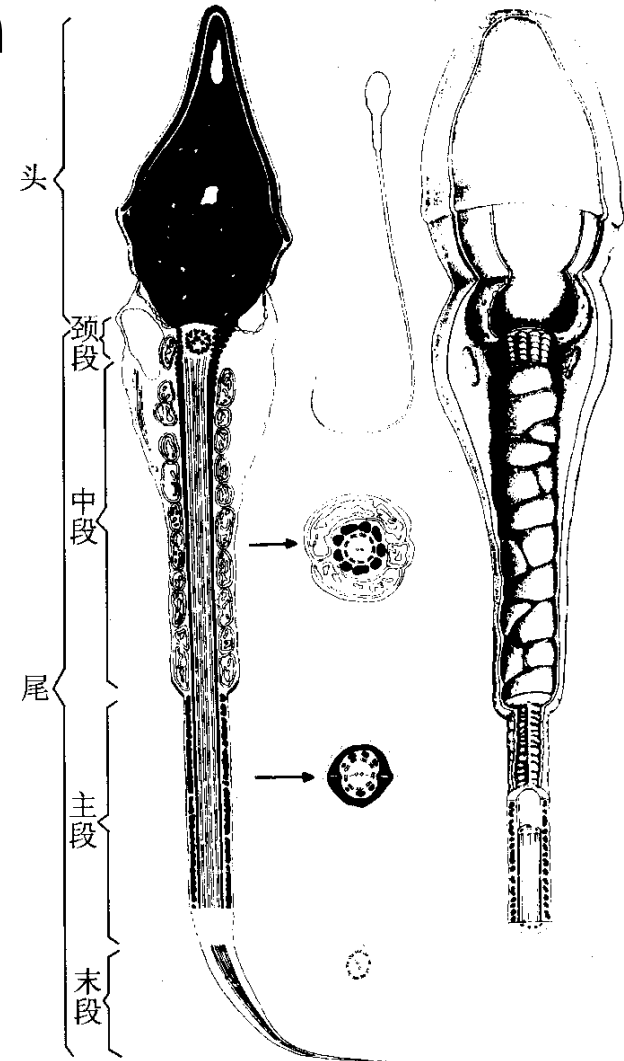
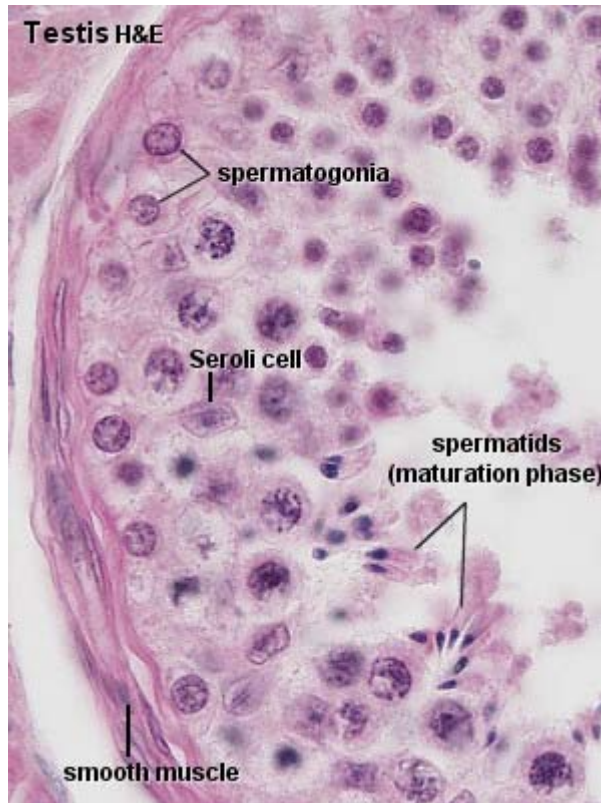


FIGURE 16-5 Sperm Formation Sperm form from

formation, alignment of the mitochondria, and

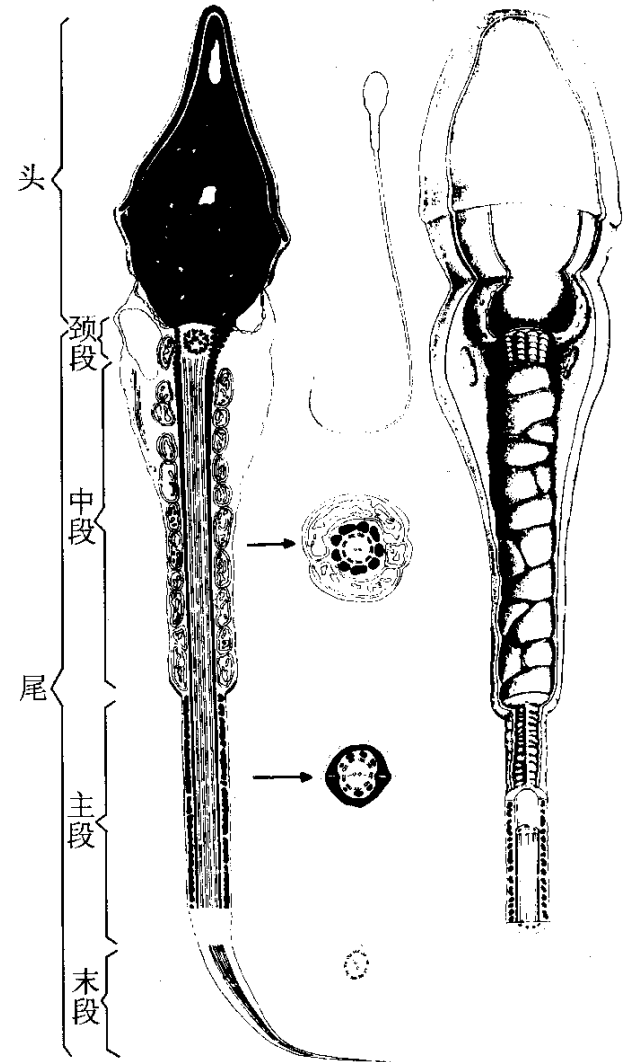
Structure of spermatozoon

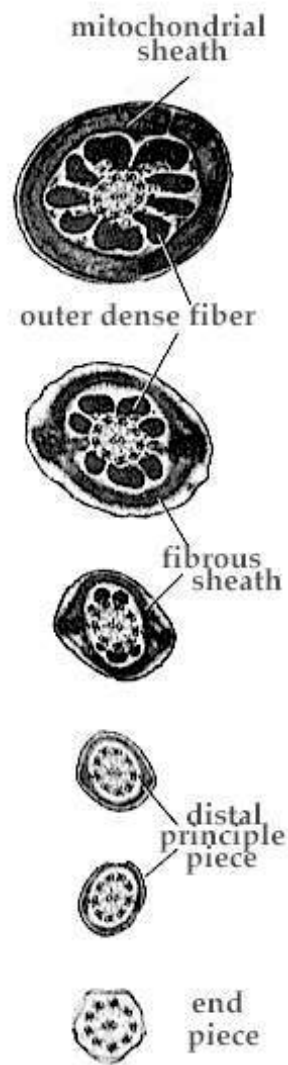
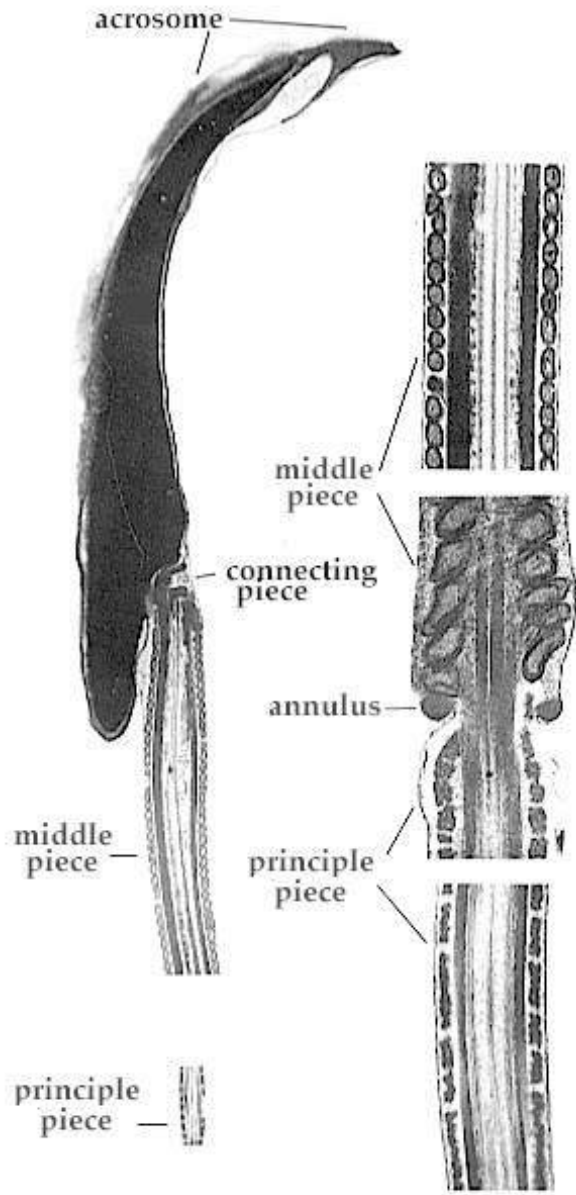
- The head of spermatozoon
Nucleus
Acrosome



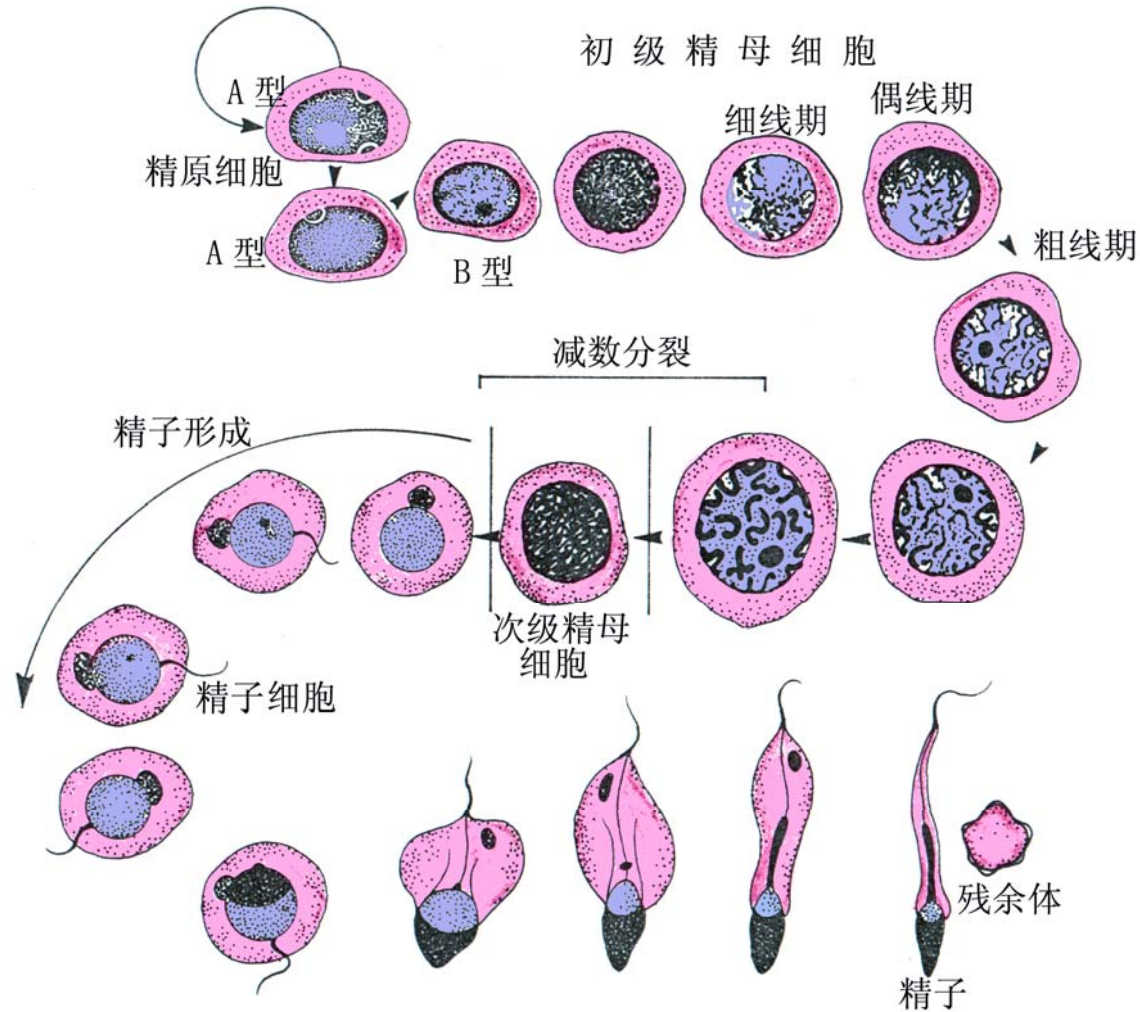
Structure of spermatozoon

- Tail of spermatozoon
 - Neck
 - Middle piece
 - Principal piece
 - End piece



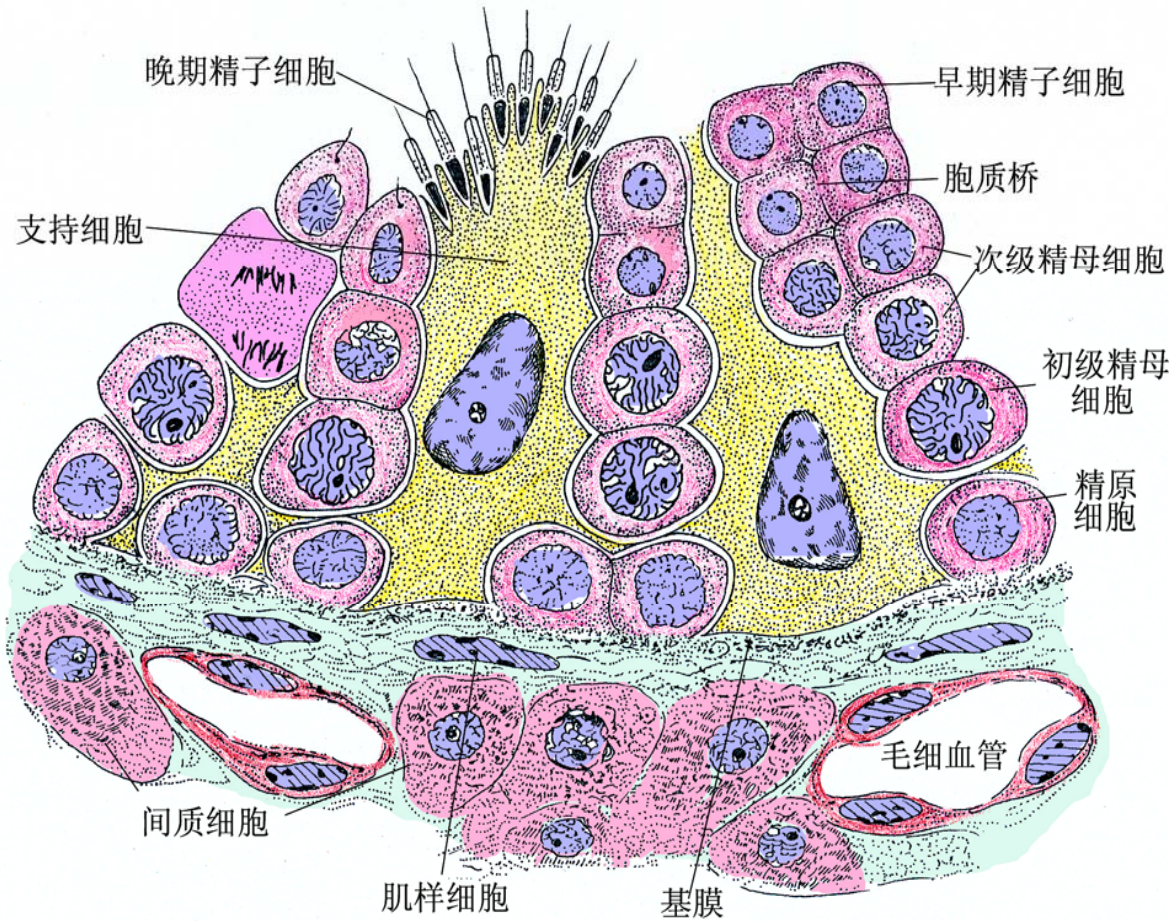
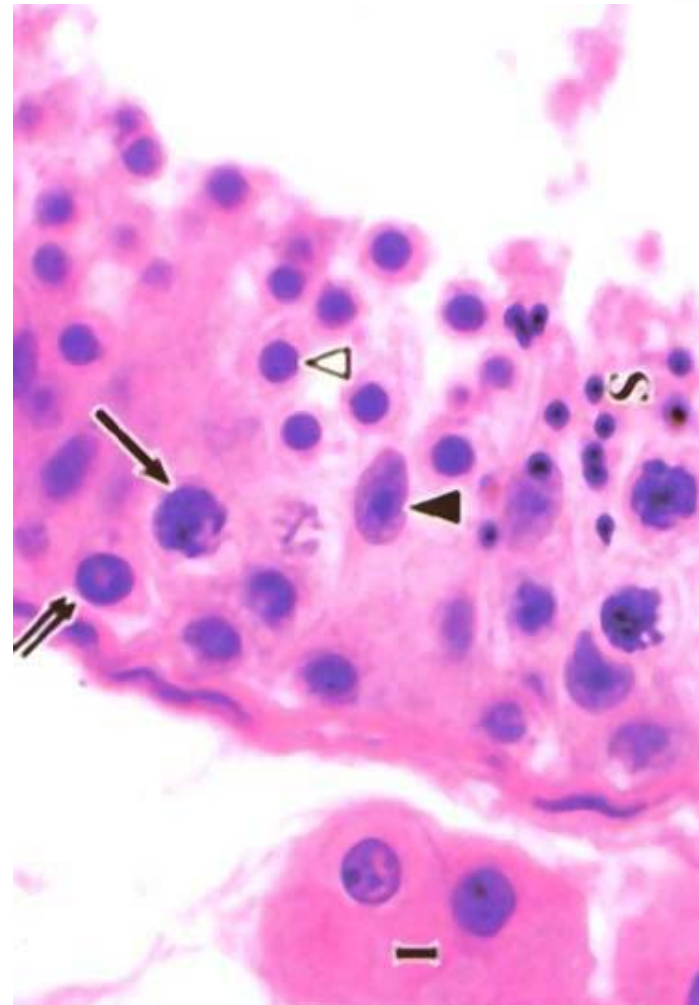


spermatogenesis



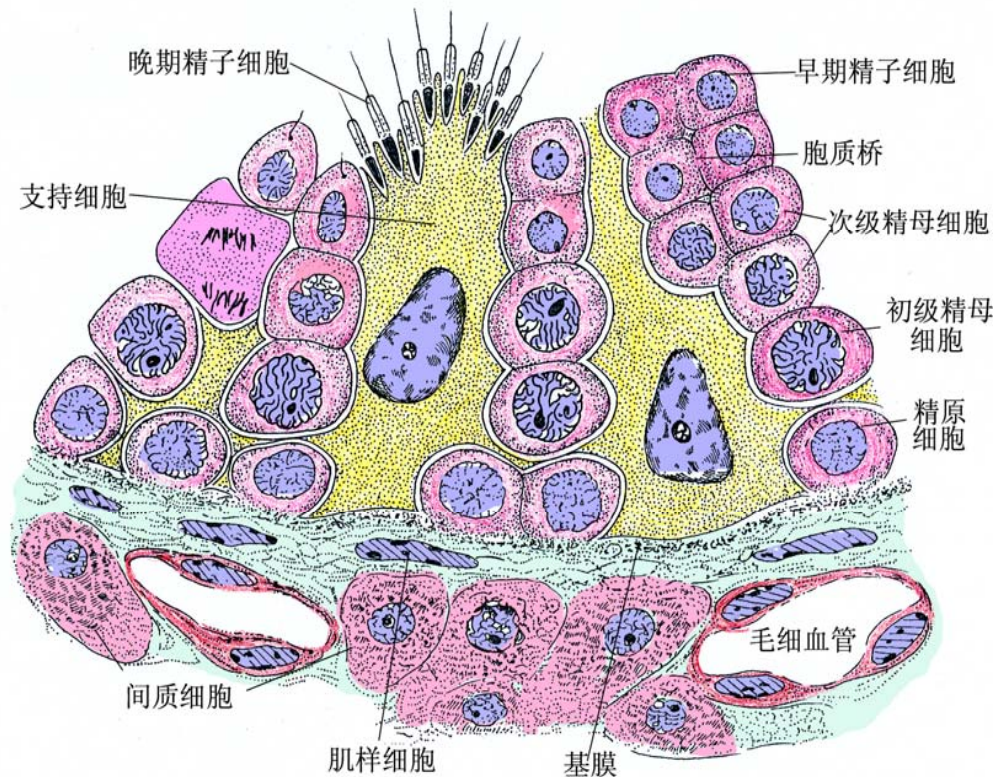
Definition: spermatogonium → spermatozoon

Sustentacular cell



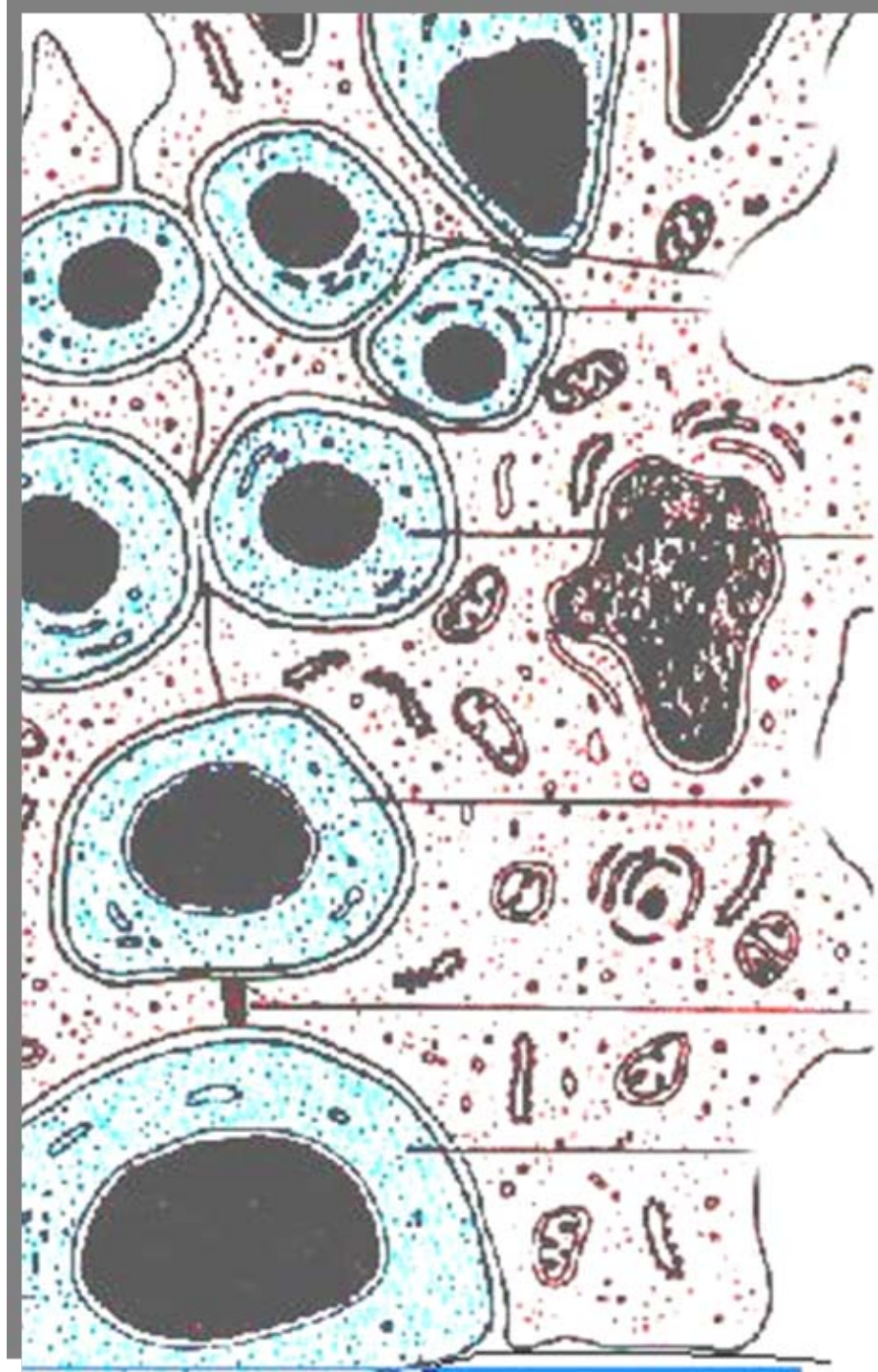
Sustentacular cell

- LM structure
pyramidal cells
large ovoid nuclei with prominent nucleolus



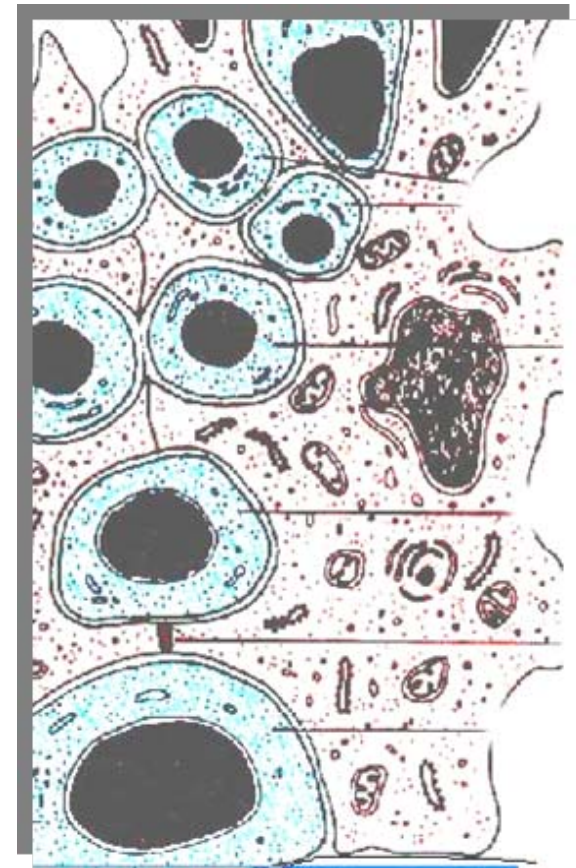
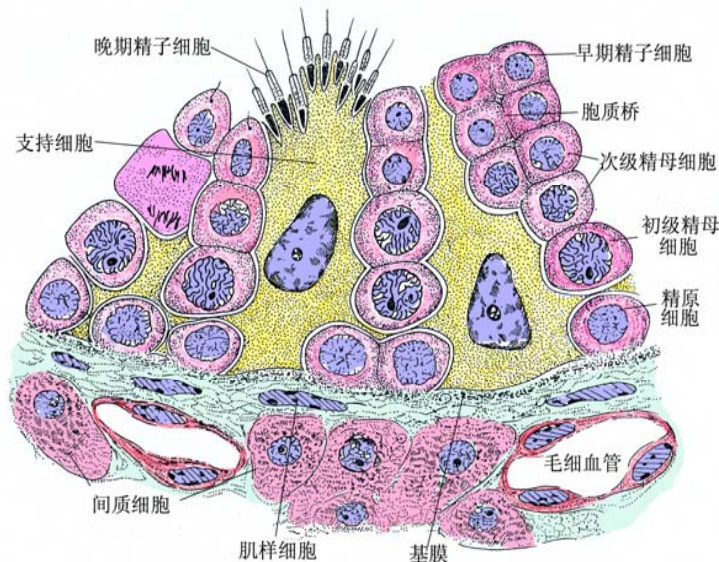
Sustentacular cell

- EM structure
(1) SEM, Golgi complex, mitochondria and ERE
(2) tight junction between Sertoli cells



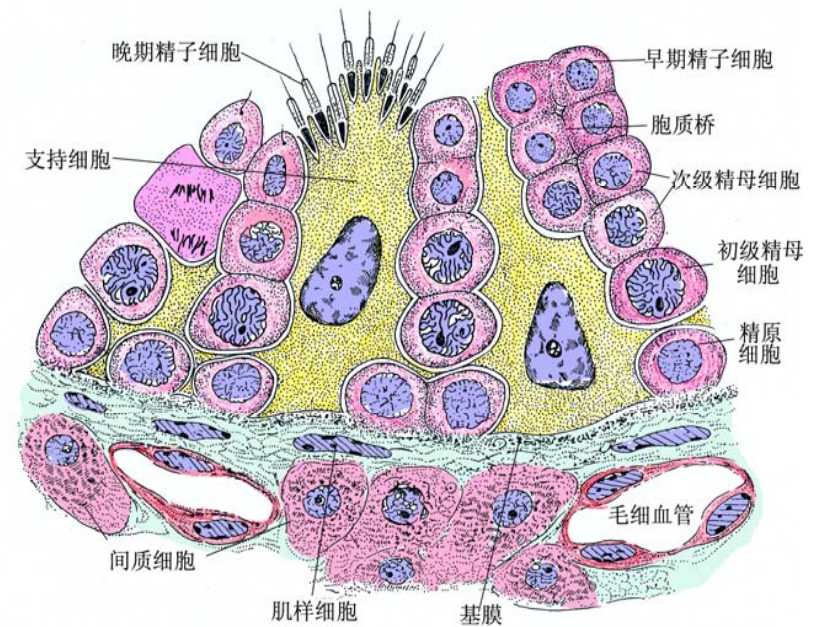
Function of sustentacular cells

- Physical support for the spermatogenic cells
- Phagocytosis of residual bodies
- Nutritional regulation
- Secretion: ABP
- Protection



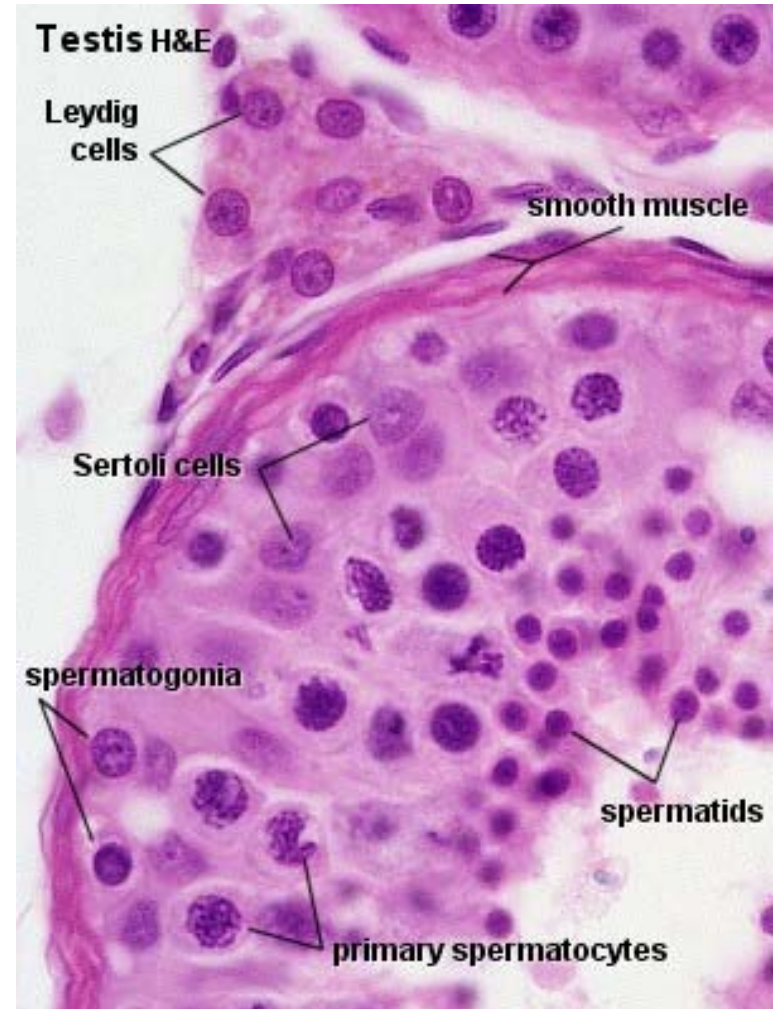
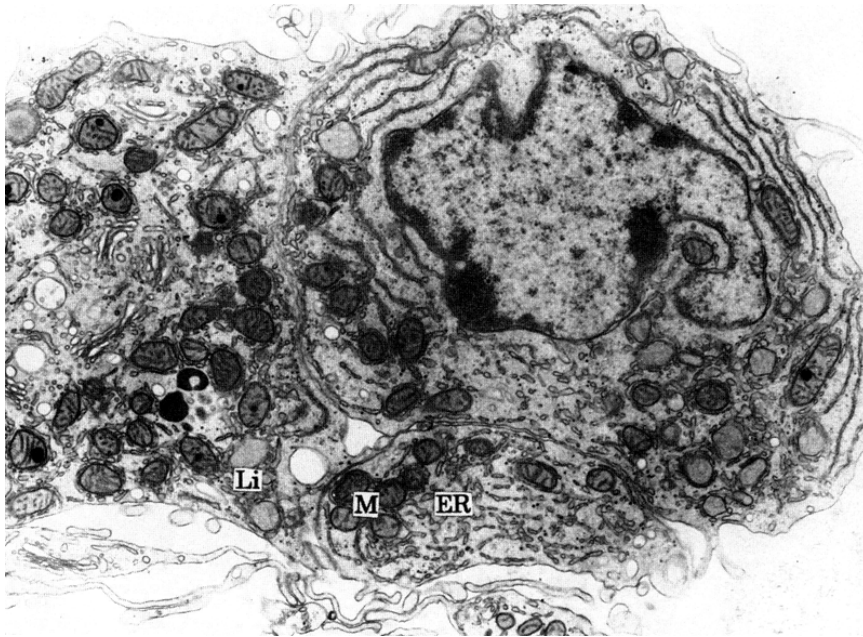
Blood-testis barrier

- Capillary endothelium
- Basement membrane
- Connective tissue
- Basement membrane
- Tight junction



Interstitial tissue

- Testicular interstitial cell (Leydig cell)
- Secrete androgen



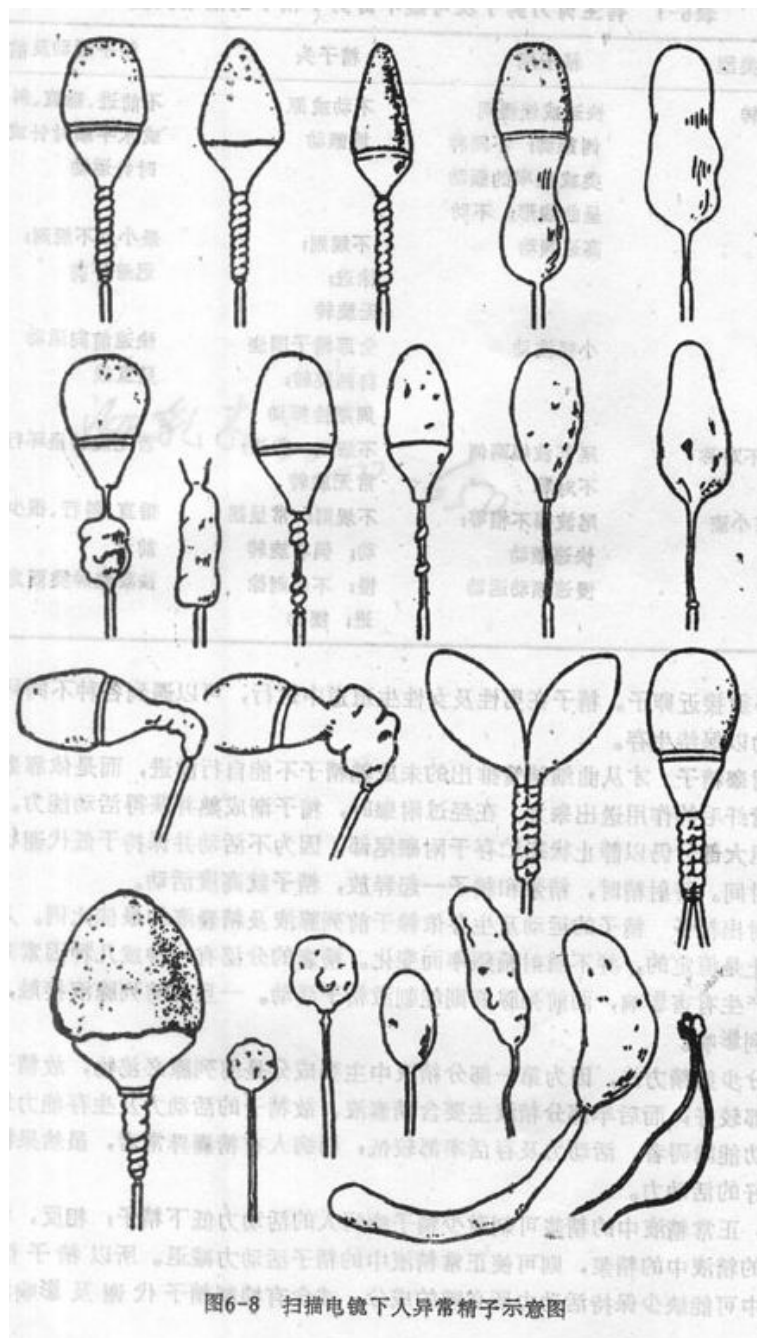


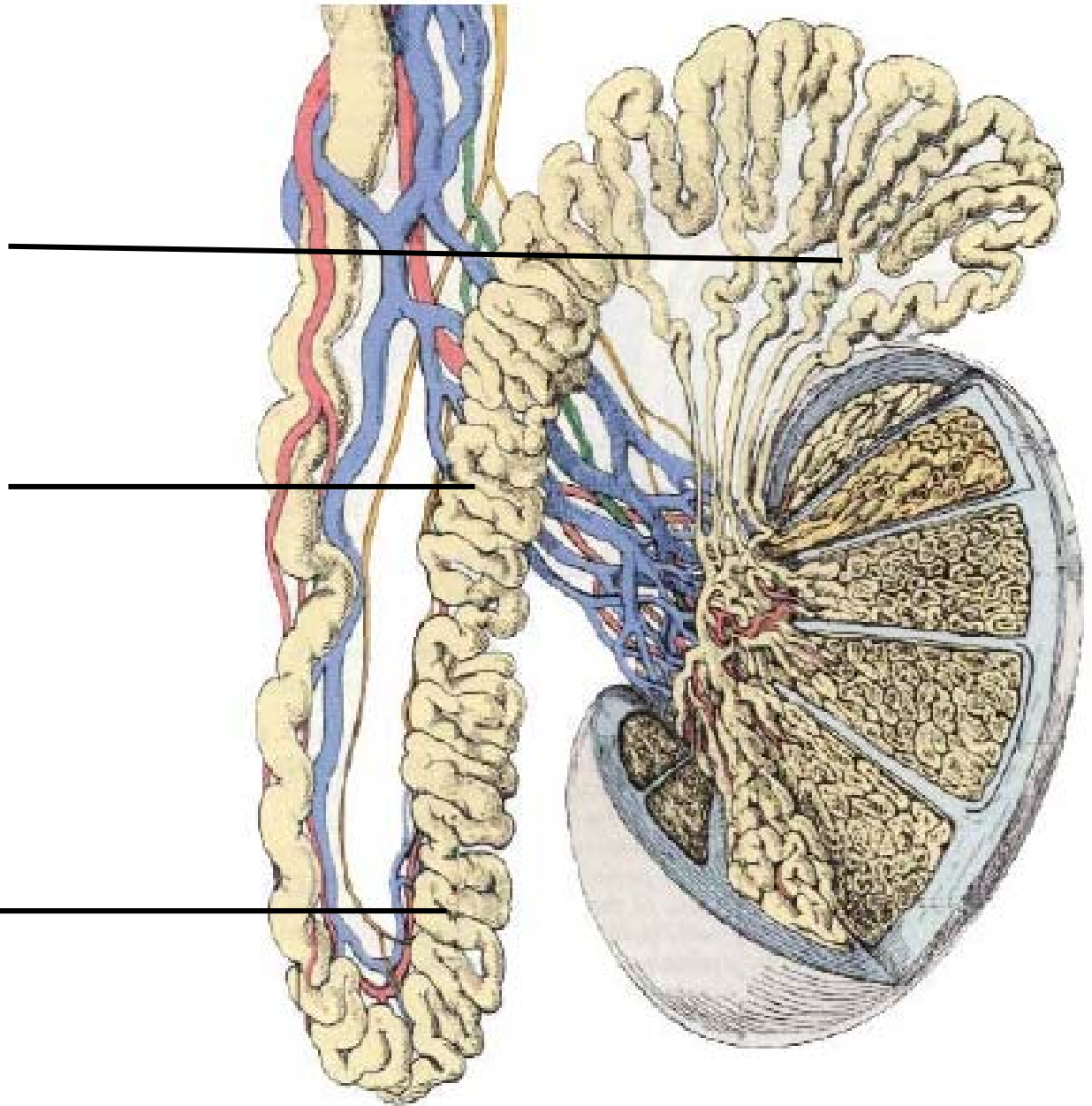
图6-8 扫描电镜下人异常精子示意图

Can move the germ in testis?

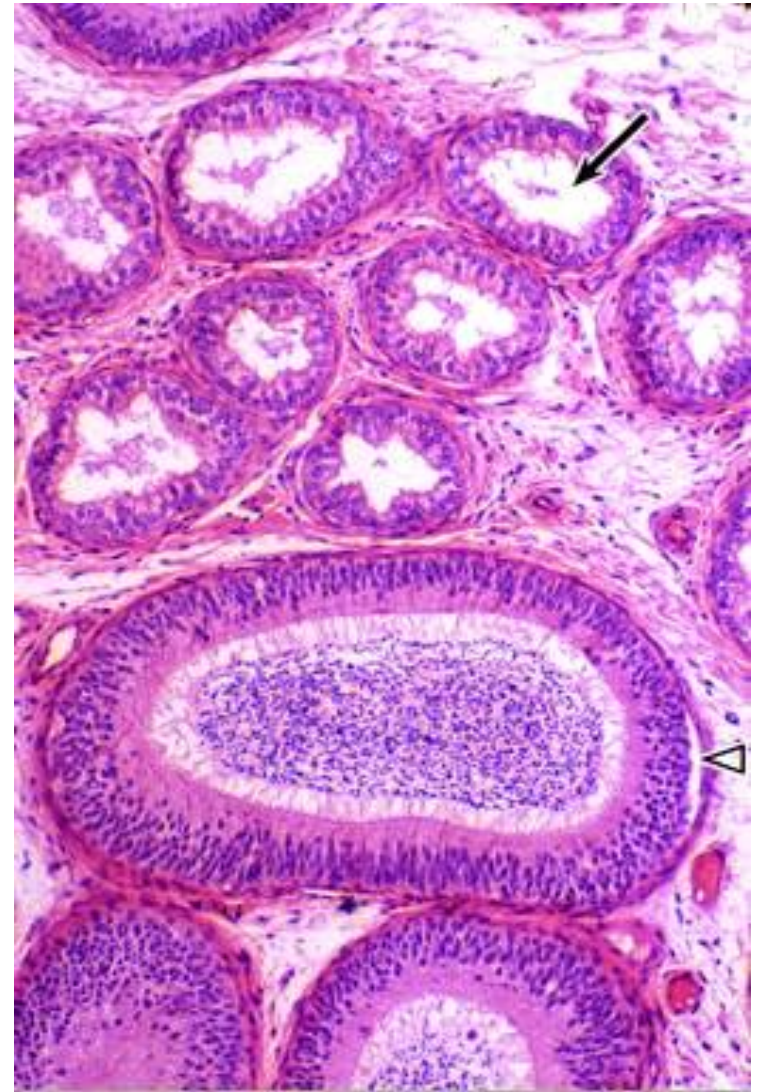
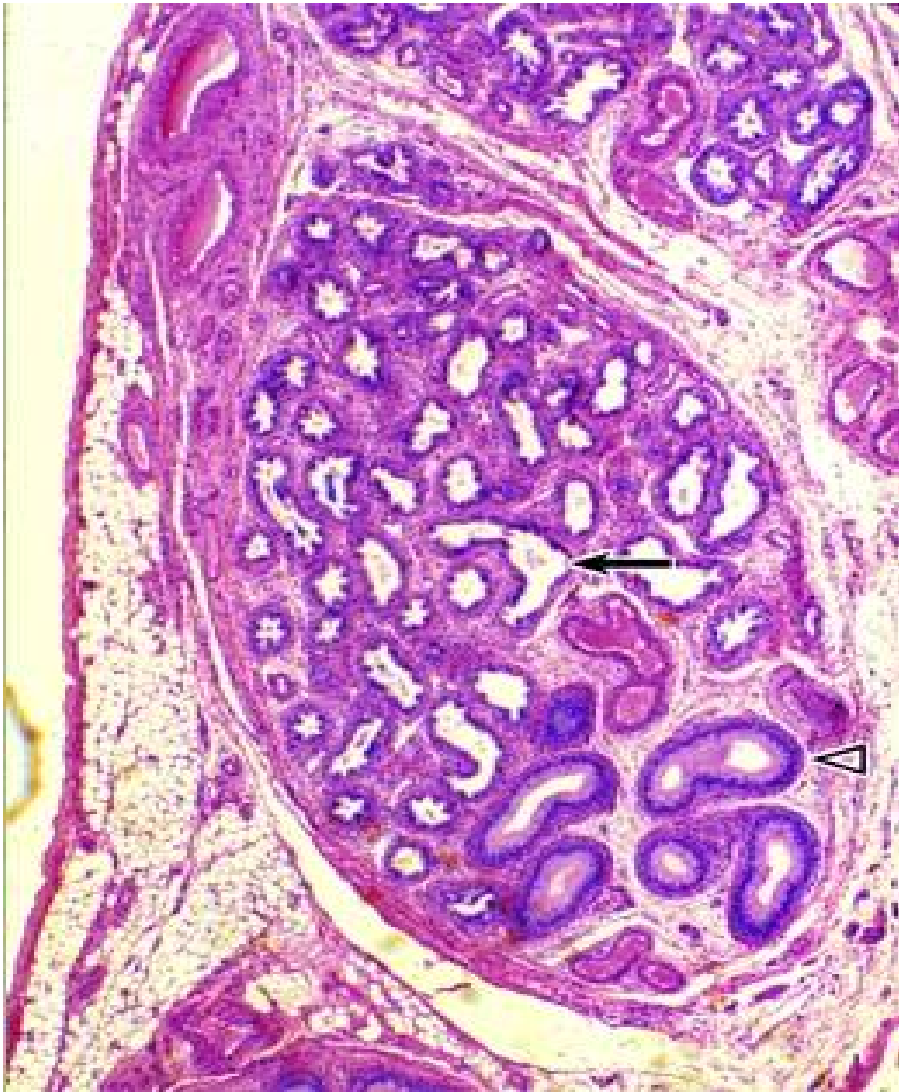
head

body

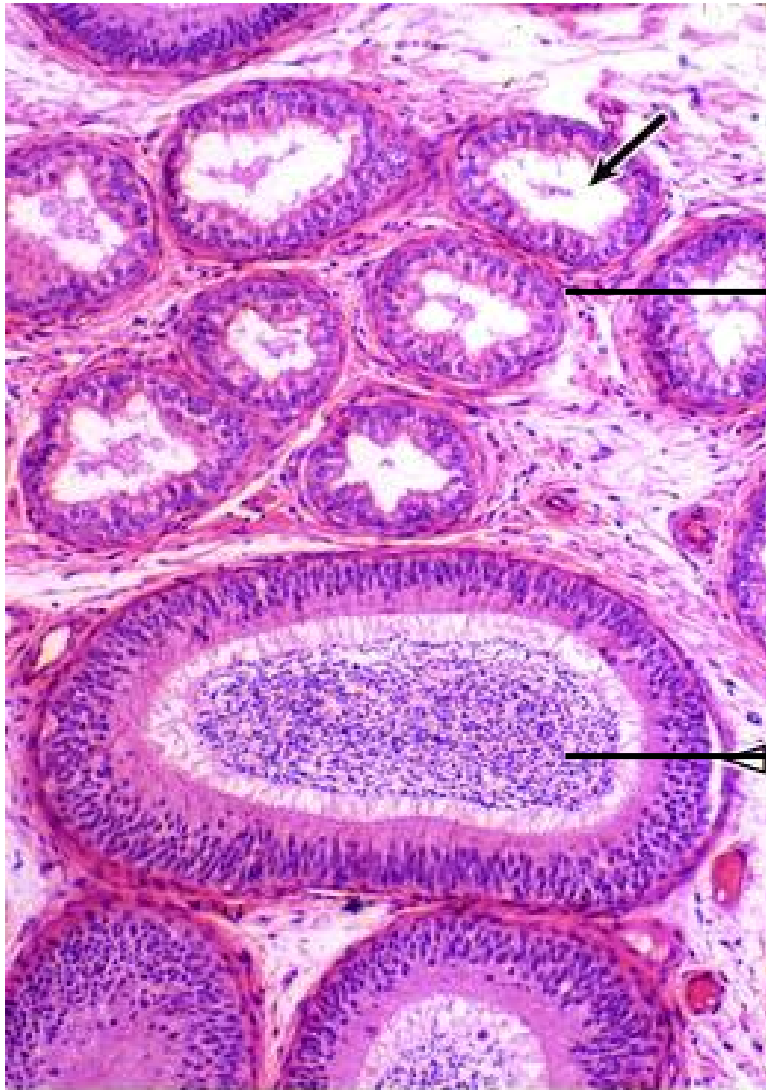
tail



epididymis



epididymis



Dfferent duct

Epididymal duct

Function of epididymis

- Make sperm matured
- Protect sperm in epididymis: blood-epididymis barrier

