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ANATOMY OF MALE REPRODUCTIVE SYSTEM

SYSTEMA GENITALIA

- Further Information : MALE REPRODUCTIVE SYSTEM

The reproductive organs required for the production of offspring.

Male reproductive system

Main article: Male reproductive system

- Internal reproductive organs
- Testes
- Epididymis
- Vas deferens
- Seminal vesicles
- Prostate
- Bulbourethral glands
- External reproductive organs
- Penis
- Scrotum

MALE REPRODUCTIVE SYSTEM

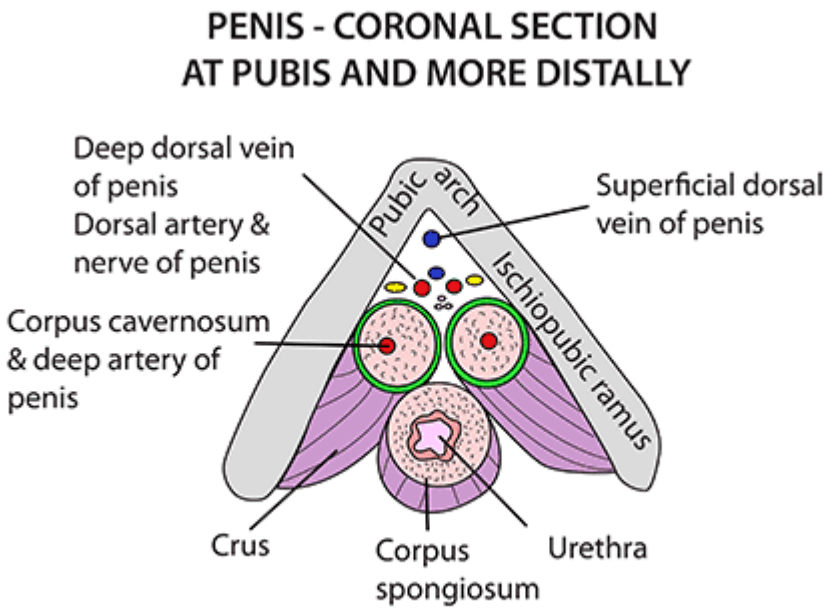
- TESTIS
- EPIDIDYMIS
- SPERMATIC CORD
    - External spermatic fascia
    - Cremaster
    - Cremasteric fascia
    - Internal spermatic fascia
    - (Vestige of processus vaginalis)
- DUCTUS DEFERENS; VAS DEFERENS
- SEMINAL GLAND; SEMINAL VESICLE
    - Adventitia
    - Muscular layer; muscular coat
    - Mucosa; mucous membrane
    - Excretory duct
- Ejaculatory duct
- PROSTRATE
- BULBO-URETHRAL GLAND COWPERI
    - Duct of bulbo-urethral gland
- MALE EXTERNAL GENITALIA
    - PENIS

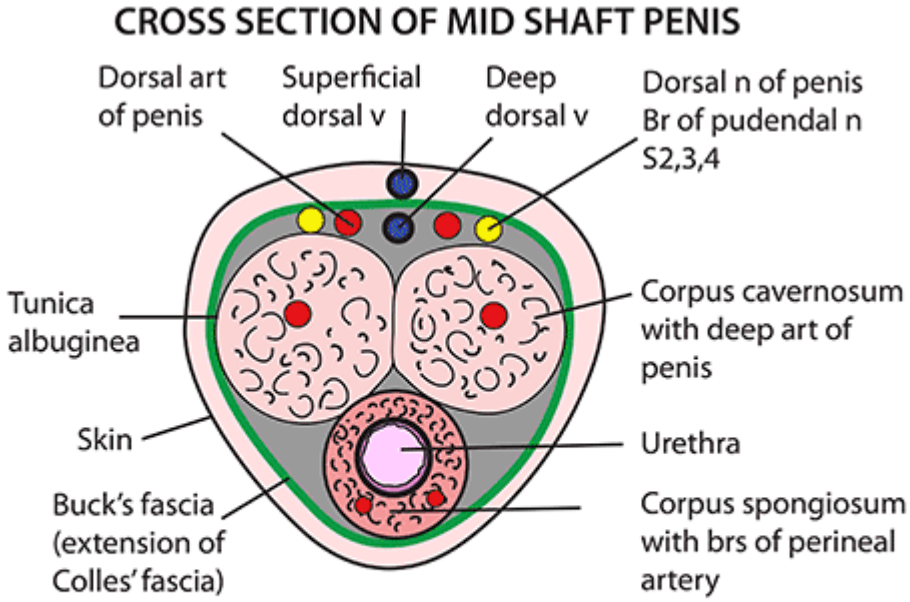
- SCROTUM
  - Raphe of scrotum
  - Dartos fascia; superficial fascia of scrotum
    - Septum of scrotum
    - Dartos muscle

EXTERNAL GENITAL ORGANS

PENIS

ROOT OF PENIS



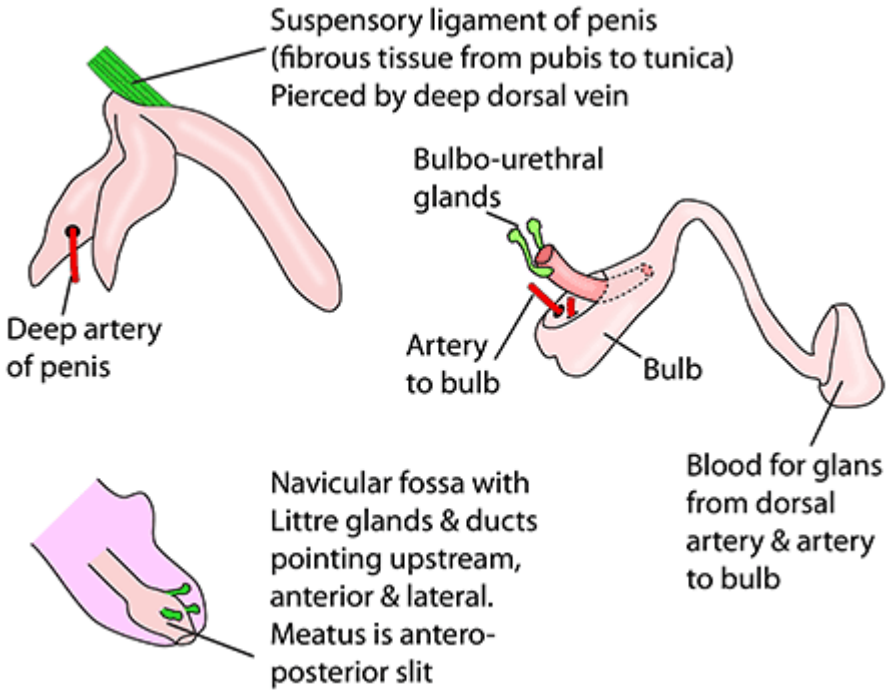


Superficial dorsal vein drains to superficial external pudendal and then great saphenous. Deep dorsal vein drains to vesicoprostatic plexus. Lymph to deep & superficial inguinal nodes

PENIS - CONSTITUENT PARTS & URETHRA

URETHRA

- Prostatic approximately 2.5cm
- Membranous 2cm
- These two together make the posterior urethra
- Bulbous & pendulous make the anterior urethra. Approximately 20cm
- Blood: Artery to bulb to glans & corpus spongiosum
  Deep artery to penis to corpus cavernosum
  Dorsal artery of penis to skin, fascia, glans
  Urethral artery from dorsal artery
- Veins: Superficial & deep dorsal veins of penis
- Lymph: Skin to superficial inguinal nodes. Glans, corpora, urethra to deep inguinal nodes
- Nerves: Posterior scrotal n to skin & glans. Pudendal gives dorsal nerve of penis. Sympathetics for ejaculation, Parasympathetics to corpora for erection.
- Receives: Ejaculatory ducts, bulbourethral glands, urethral glands



BODY OF PENIS

ARTERIAL SUPPLY

VENOUS DRAINAGE

NERVE SUPPLY

SCROTUM

LAYERS OF SCROTUM

BLOOD SUPPLY

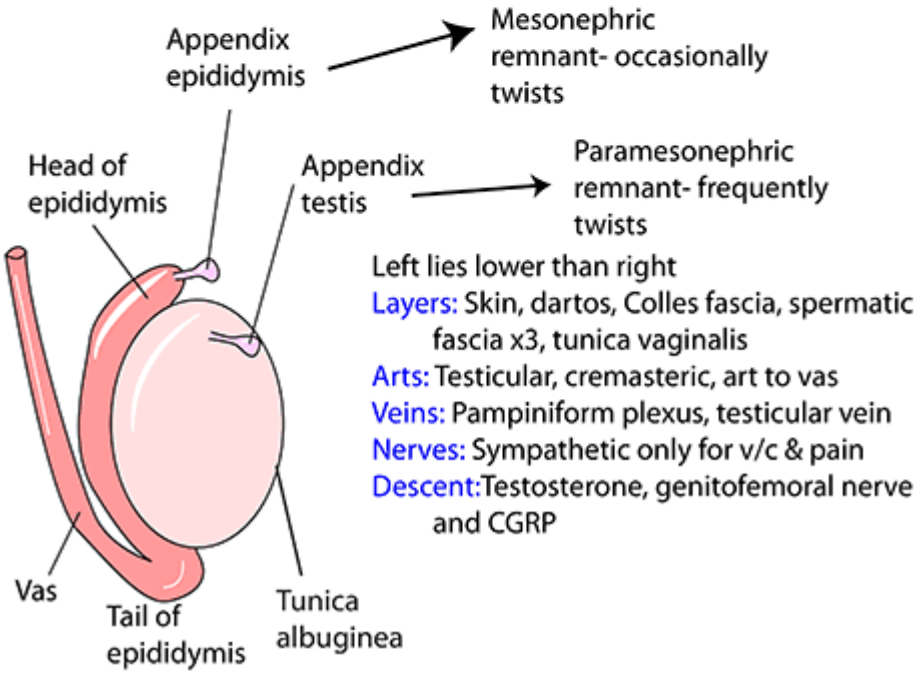
NERVE SUPPLY

TESTIS

SHAPE AND SIZE

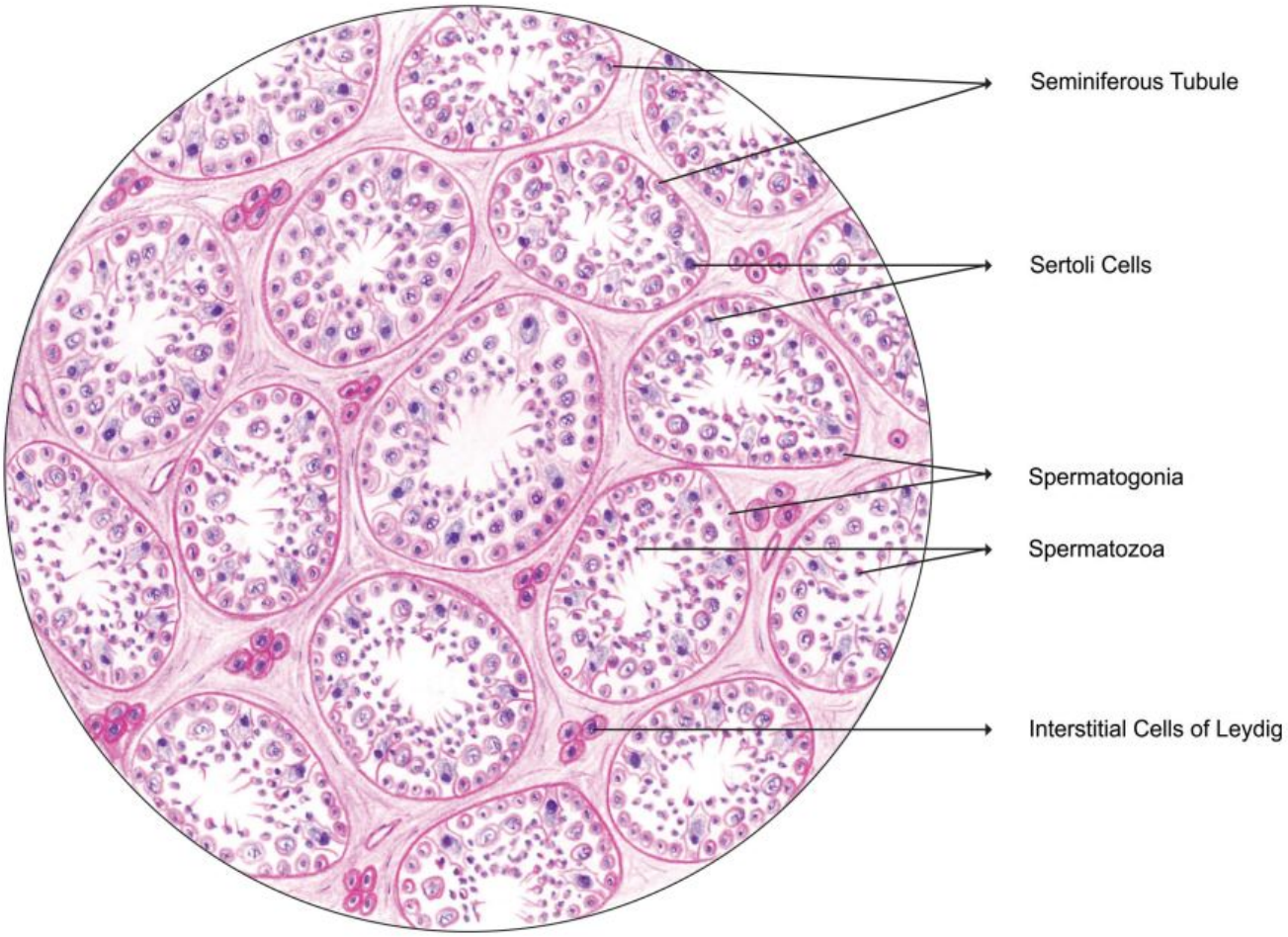
TESTIS

- 400 spaces divided by fibrous septa
- Each contains 2-4 convoluted seminiferous tubules
- Tubules are 60cm long & drain to 15-20 vasa efferentia which drain to the epididymis and then to vas deferens
- Complete cycle of production takes 64-70 days
- Left testis lies slight lower than right
- Coverings: Skin, dartos (with sympathetic supply), Colles fascia, external spermatic fascia, cremasteric fascia, internal spermatic fascia, tunica vaginalis
- Blood supply: Testicular artery, cremasteric/vas artery
- Venous drainage: Pampiniform plexus to testicular vein
- Lymph: Para-aortic nodes
- Nerve: Sympathetics from chain at L2 for vasoconstriction & carrying general visceral afferents for pain to T10 dermatome. NO parasympathetics
- Cells: Interstitial (Leydig) for hormones
  Sertoli for support and Mullerian Inhibiting Substance
  Germ cells for spermatogonia, primary spermatocytes, meiosis, secondary spermatocytes, spermatids, sperm



EXTERNAL FEATURES

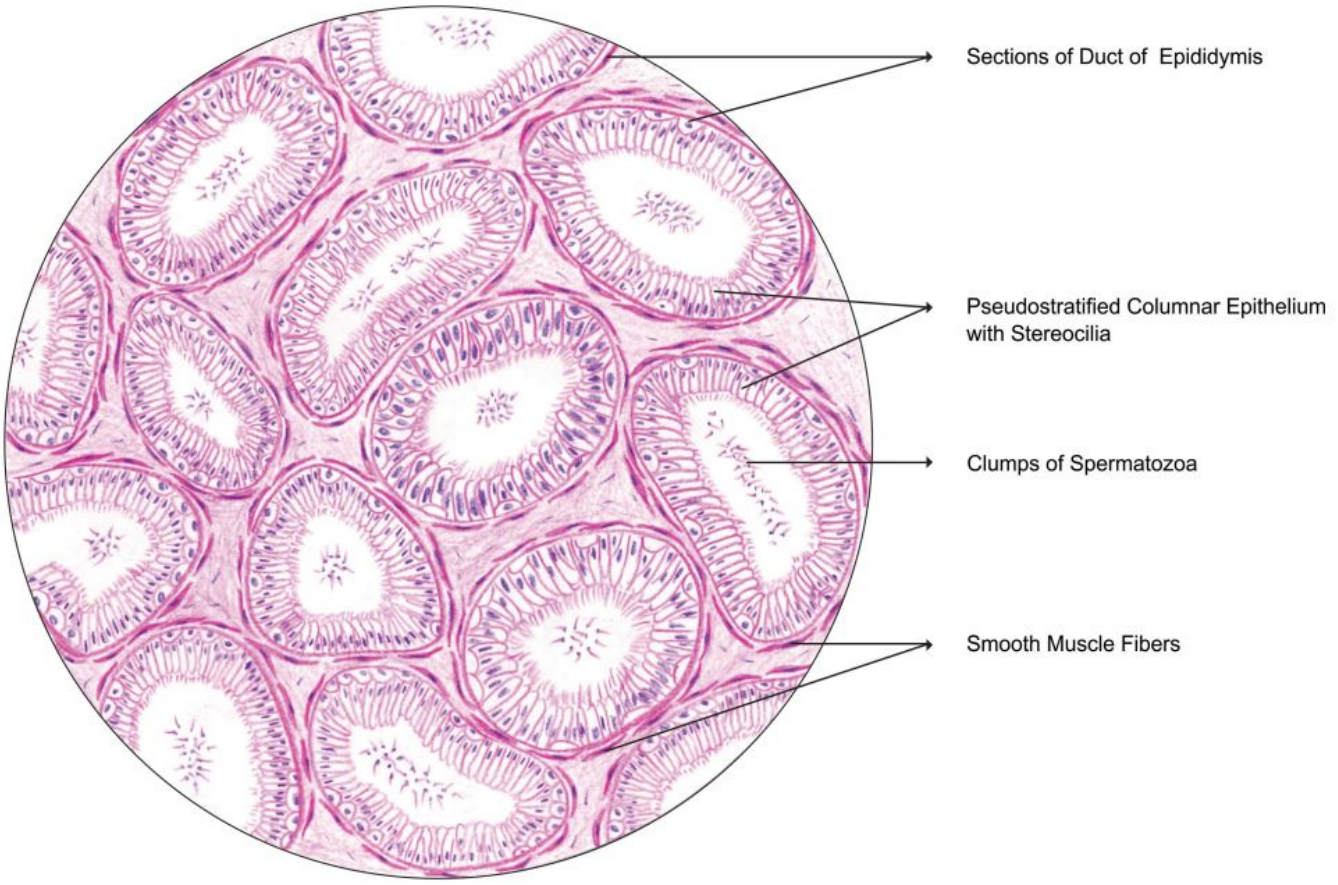
COVERINGS OF TESTIS



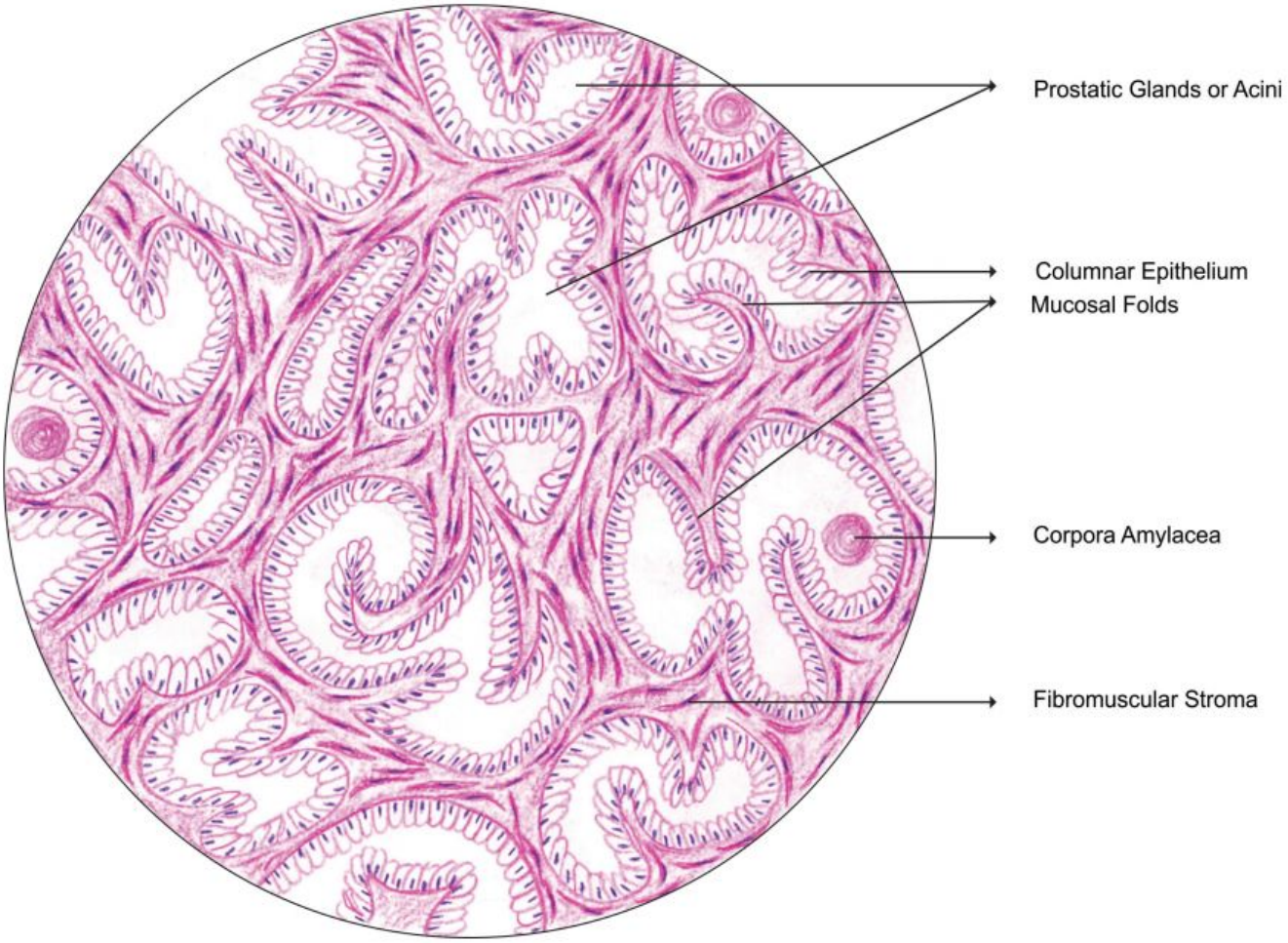
STRUCTURE OF TESTIS

ARTERIAL SUPPLY

EPIDIDYMIS


Sections of Duct of Epididymis
Pseudostratified Columnar Epithelium with Stereocilia
Clumps of Spermatozoa
Smooth Muscle Fibers

PROSTRATE

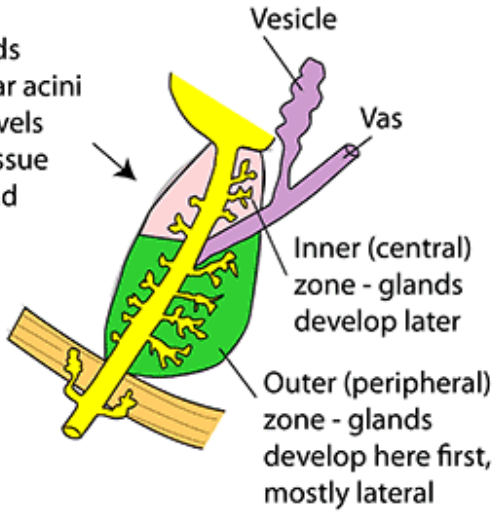

Prostatic Glands or Acini
Columnar Epithelium
Mucosal Folds
Corpora Amylacea
Fibromuscular Stroma

PROSTATE - DEVELOPMENT

Endodermal outpouch of glands from urethral part of the urogenital sinus. Firbromuscular stroma forms from the surrounding mesenchyme. Female equivalent is paraurethral glands.

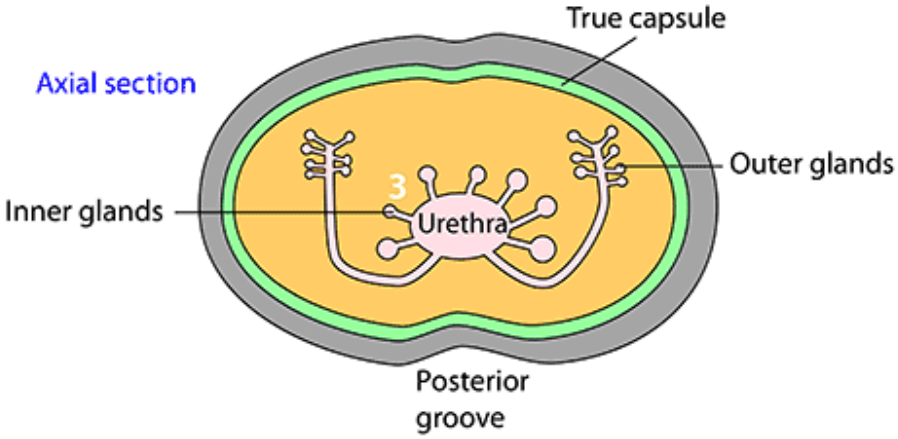
Between 13-15 weeks the cords develop a lumen and glandular acini under the influence of high levels of dihydrotestosterone. The tissue is invaded by blood vessels and autonomic nerves

Bulbo-urethral glands develop in deep perineal pouch by lateral budding from urethra

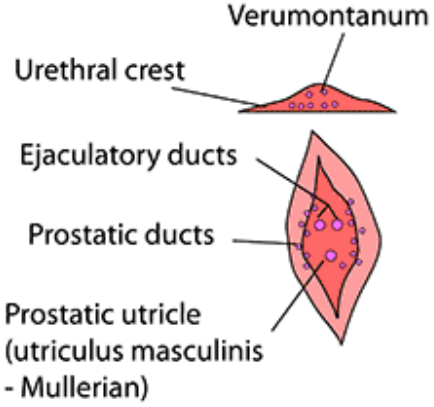


At 16 weeks there is the classical layering of ducts into mucosal (periurethral) opening directly into urethra (1). Plus short ducts from submucosal glands, also in central zone (2). In peripheral zone are main prostatic ducts from para-urethral glands

PROSTATIC DUCTS

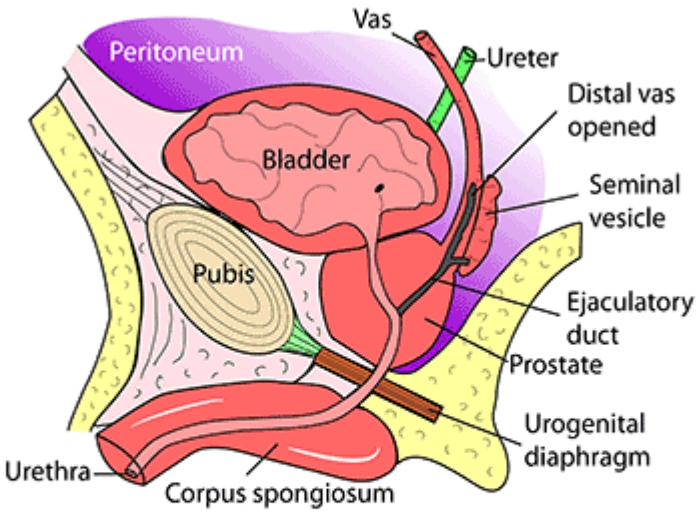


- Prostatic ducts open into urethra as two groups: inner and outer
- True fibrous capsule, but a false "capsule" develops when hypertrophic prostatic tissue compresses the posterior lobe (peripheral zone)



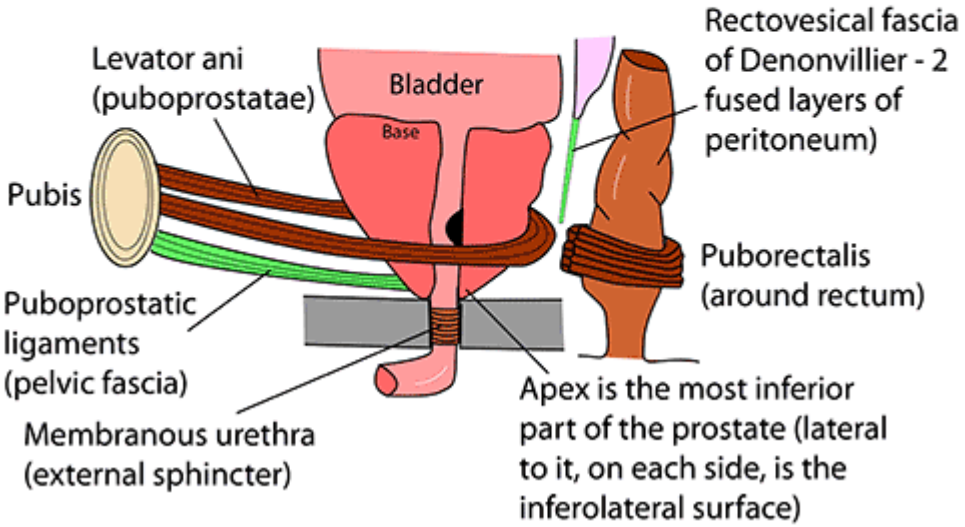
Posterior prostatic urethral wall

PROSTATE



- Pyramidal shape with posterior groove
- Size of chestnut (2 x 3 x 4cm)
- Sits on UG diaphragm
- Intrinsic urethral mechanism around it and urethra runs through it
- Gives nutrients for sperm and is 30% ejaculate volume
- Ejaculatory ducts & prostatic utricle (paramesonephric remnant) open onto verumontanum in floor of prostatic urethra
- True & false capsules
- Veins: Preprostatic plexus - valveless (to vertebral plexuses)
- Arteries: Inferior vesical, middle rectal, internal pudendal
- Nerves: Sympathetic for ejaculation & smooth muscle contraction
  Parasympathetic for erection & secretomotor of acini

PROSTATIC LIGAMENTS & SUPPORTS



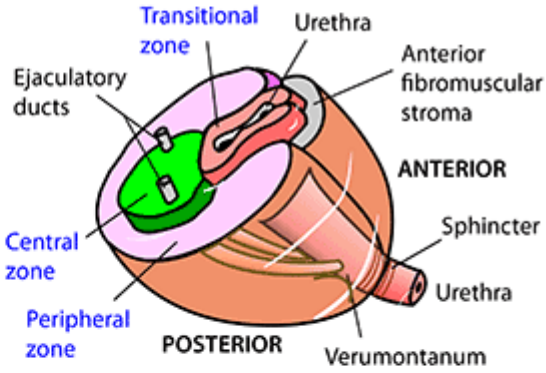
PROSTATE - LOBES

The old surgical view of the prostate consisted of three lobes -

Anterior lobe
Middle lobe
Posterior lobe (lateral extensions of which gave lateral lobes which were only significant if the prostate was hypertrophied)

A more modern zonal view suggests that the lobes are arranged in zones

Central zone: surrounds the ejaculatory ducts all the way to the verumontanum.
Transitional zone: surrounds the urethra. Liable to nodular benign enlargement (stroma & glandular) from 40 yrs onwards. Causes are ageing and circulating androgens
Peripheral zone: surrounds the other two zones. 70% of cancers start here. It is pushed peripherally by benign enlargement and compressed



Dorsal vein of penis draining into the preprostatic venous plexus then the iliac veins

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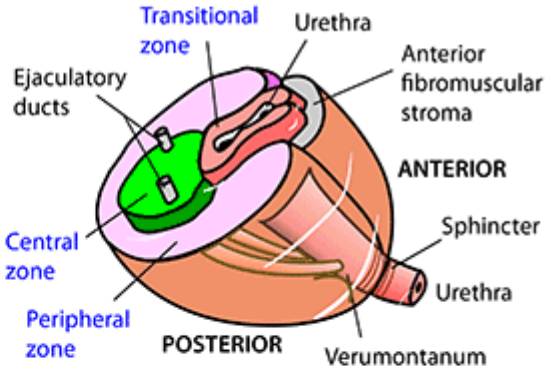

Dorsal vein of penis draining into the preprostatic venous plexus then the iliac veins

SEMINAL VESICLE