

Penis

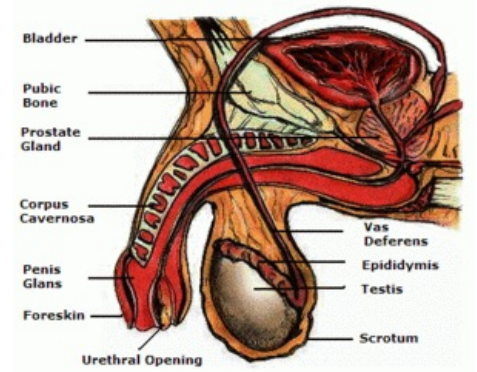
Structure

The penis is composed of 3 cylindrical bodies of erectile cavernous tissue: the paired corpora cavernosa (separated by septum penis) and single corpus spongiosum. Each cavernous body has an outer fibrous capsule, tunica albuginea. Corpus spongiosum contains the spongy urethra.

The root of penis consists of the crura, the bulb, the ischiocavernosus and the bulbospongiosus muscles. It is located in the superficial perineal pouch.

Body of penis

- It is the free, pendulous part.
- Consists of thin skin, connective tissue, blood and lymphatic vessels, fascia, corpora cavernosa, corpus spongiosum with the spongy urethra.
- At the end of the body, glans of penis is located.
- The margin (obliquely shaped) of glans forms the corona of glans of penis.
- A reflection of skin (= prepuce) folds over the glans of penis
- Frenulum of prepuce, is a median fold.
- Suspensory ligament of penis is a condensation of deep fascia that arises from the anterior surface of pubic symphysis. It is attached to the deep fascia of penis, forming a sling, at the junction of root and body.



Penis

Vasculature & Innervation

- **Arterial supply:** by branches of the internal pudendal artery
 - **Dorsal Arteries of penis:** they run between the corpora cavernosa, on each side of deep dorsal vein, supplying the fibrous tissue around corpora and skin of penis.
 - **Deep arteries of penis:** they pierce the crura and run within the corpora cavernosa, thus supplying the erectile tissue.
 - **Artery of bulb of penis:** posterior part of corpus spongiosum + Cowper's glands
 - **Superficial & Deep branches of external pudendal artery:** penile skin
- **Venus drainage:**
 - Venus plexus -> **Deep dorsal vein of penis** -> Prostatic plexus: from the cavernous bodies
 - **Superficial dorsal vein:** from the dartos and skin.
- **Lymphatic drainage:** into superficial inguinal nodes.
- **Innervation:** nerves deriving from S2-S4.
 - Sensory & sympathetic innervation: provided by the dorsal nerve of penis (terminal branch of pudendal nerve), which runs lateral to dorsal artery of penis. Supplies both skin and glans. The sensory endings are more numerous on the glans. Ilioinguinal nerve branches supply skin at the root.
 - Parasympathetic innervation: provided by cavernous nerves that innervate the helicine arteries in the corpora cavernosa (that is why erection is parasympathetically stimulated).

Mechanism of erection

1. Upon erotic stimulation, arteriovenous anastomoses, through which blood normally bypasses the erectile tissue of corpora cavernosa, are closed.
2. Smooth muscle in the fibrous trabeculae and coiled helicine arteries relaxes, due to parasympathetic stimulation. This causes the helicine arteries to straighten, dilate their lumen and allow increased blood to flow in the sinuses of the corpora cavernosa.
3. The bulbospongiosus and ischiocavernosus muscles compress the veins that drain corpora cavernosa, thus impeding the return of blood outside the penis.
4. As a result, all three erectile bodies are engorged with blood at venous pressure causing them to become enlarged and rigid, thus causing an erection.

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Bibliography

- MOORE, Keith L – DALLEY, Arthur F. *Clinically Oriented Anatomy*. 5. edition. Lippincott Williams & Wilkins, 2005. ISBN 0781736390.