

# Male Reproductive System

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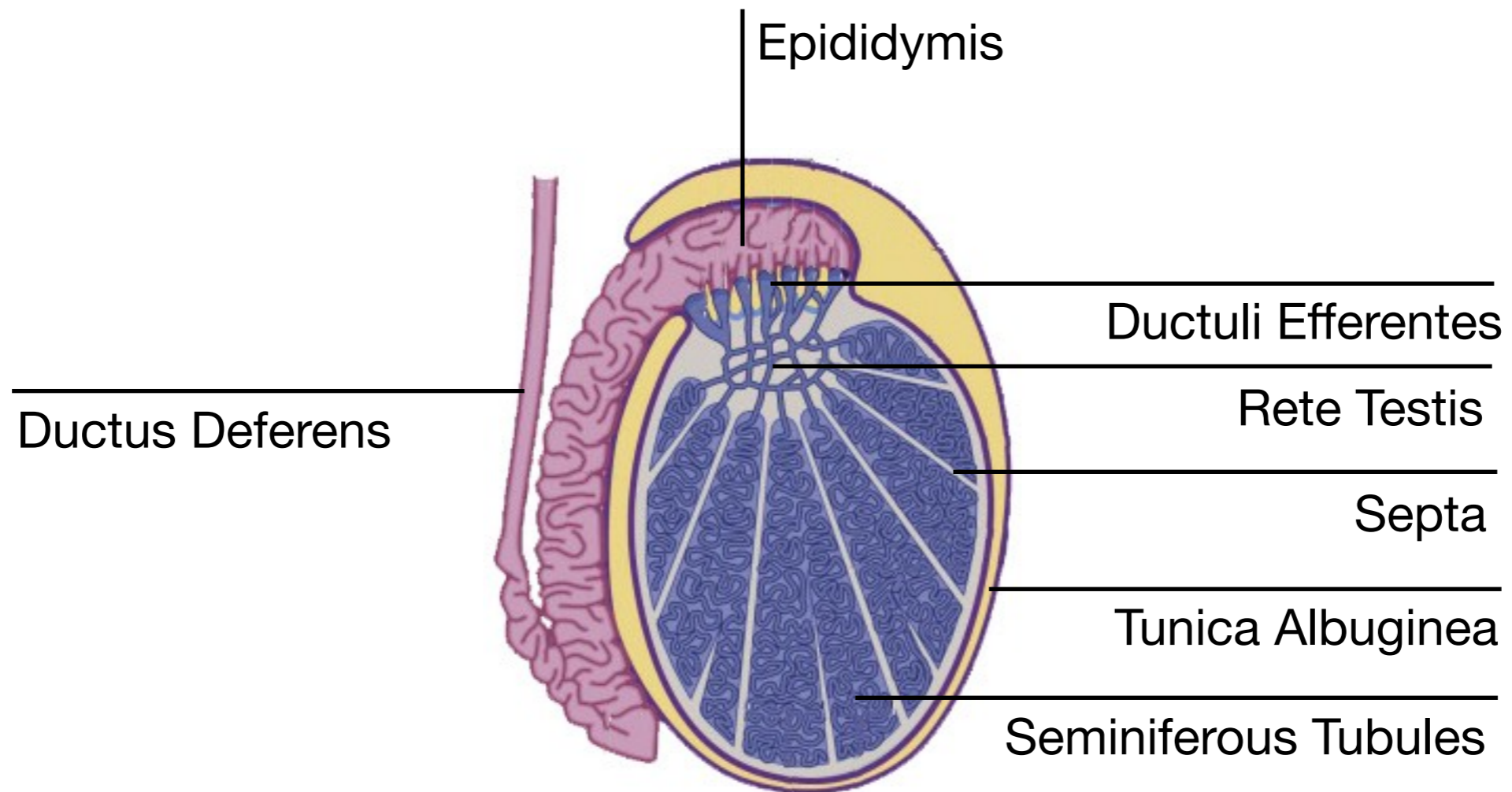
# What we'll talk about...

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- Structural features in the testis that support sperm development
- Hormones that drive sperm development
- Structural features of male reproductive tract and accessory glands

The testis is the site of sperm development.

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The testis contains seminiferous tubules which generate sperm.



# Development of Sperm

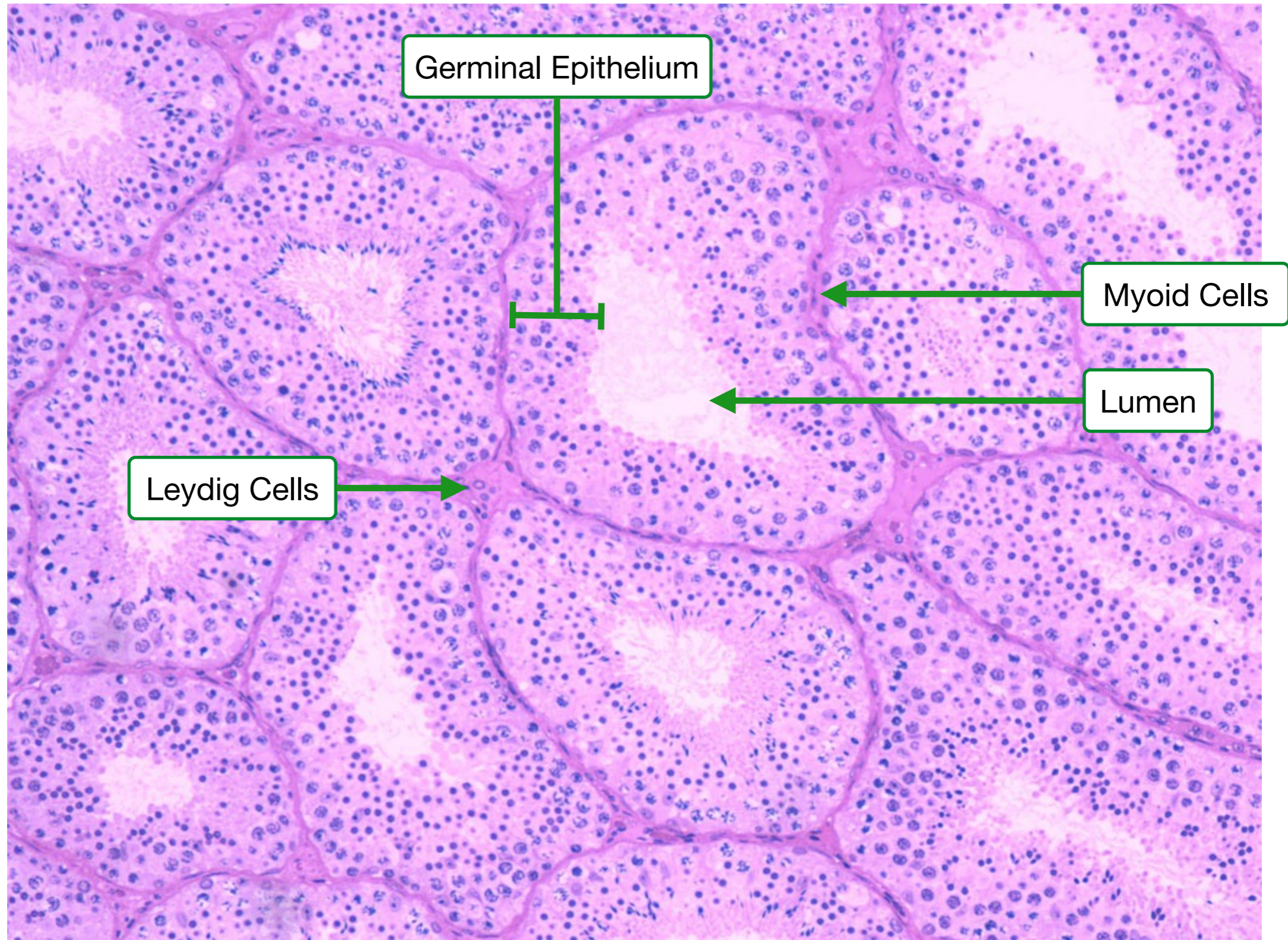
Development of sperm is divided into spermatogenesis and spermiogenesis.

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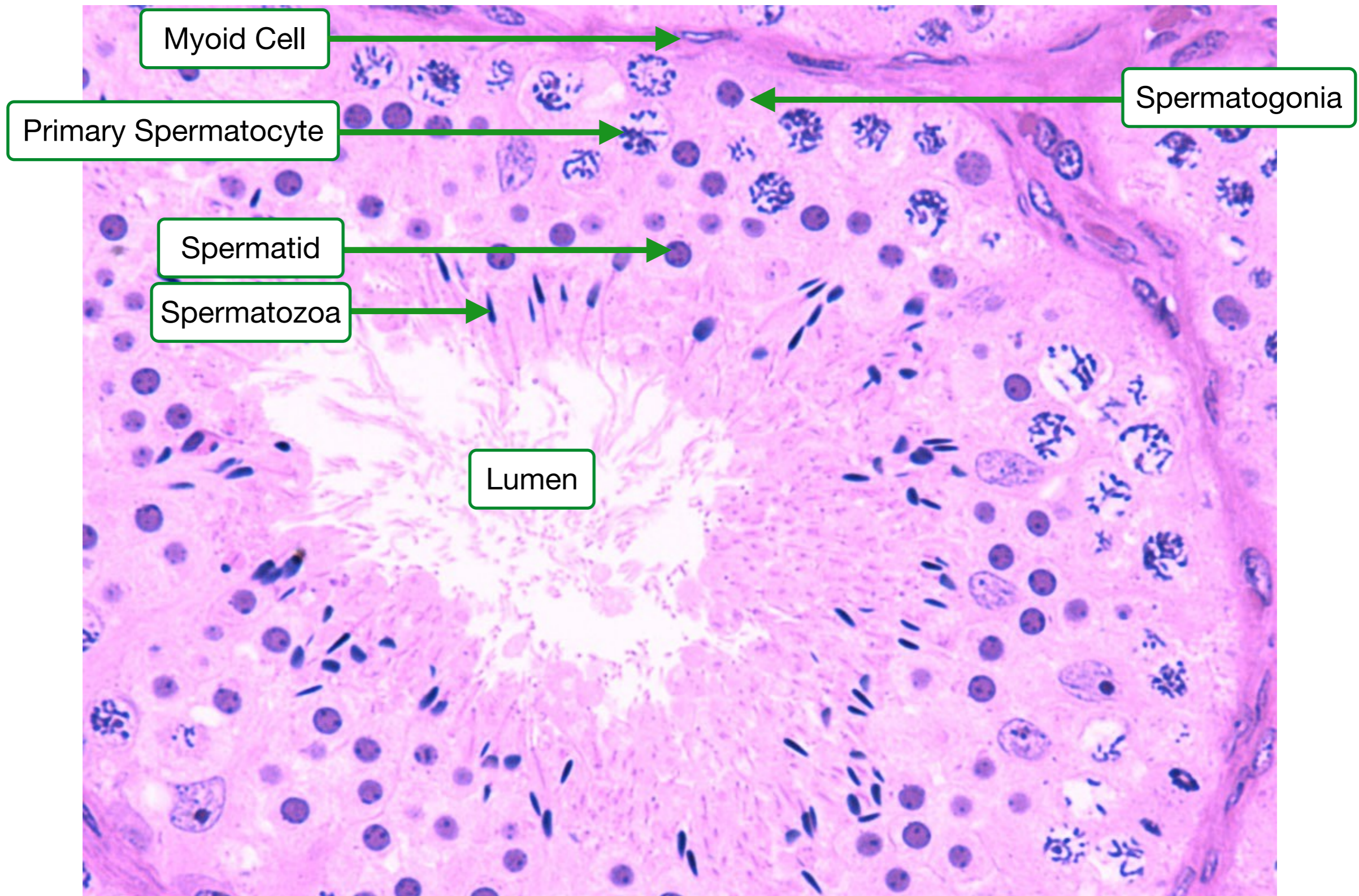
- Spermatogenesis: spermatogonium to spermatid
- Spermiogenesis: spermatid to spermatozoa
  - Acrosome
  - Flagellum

The germinal epithelium of a seminiferous tubule is the site of sperm production.

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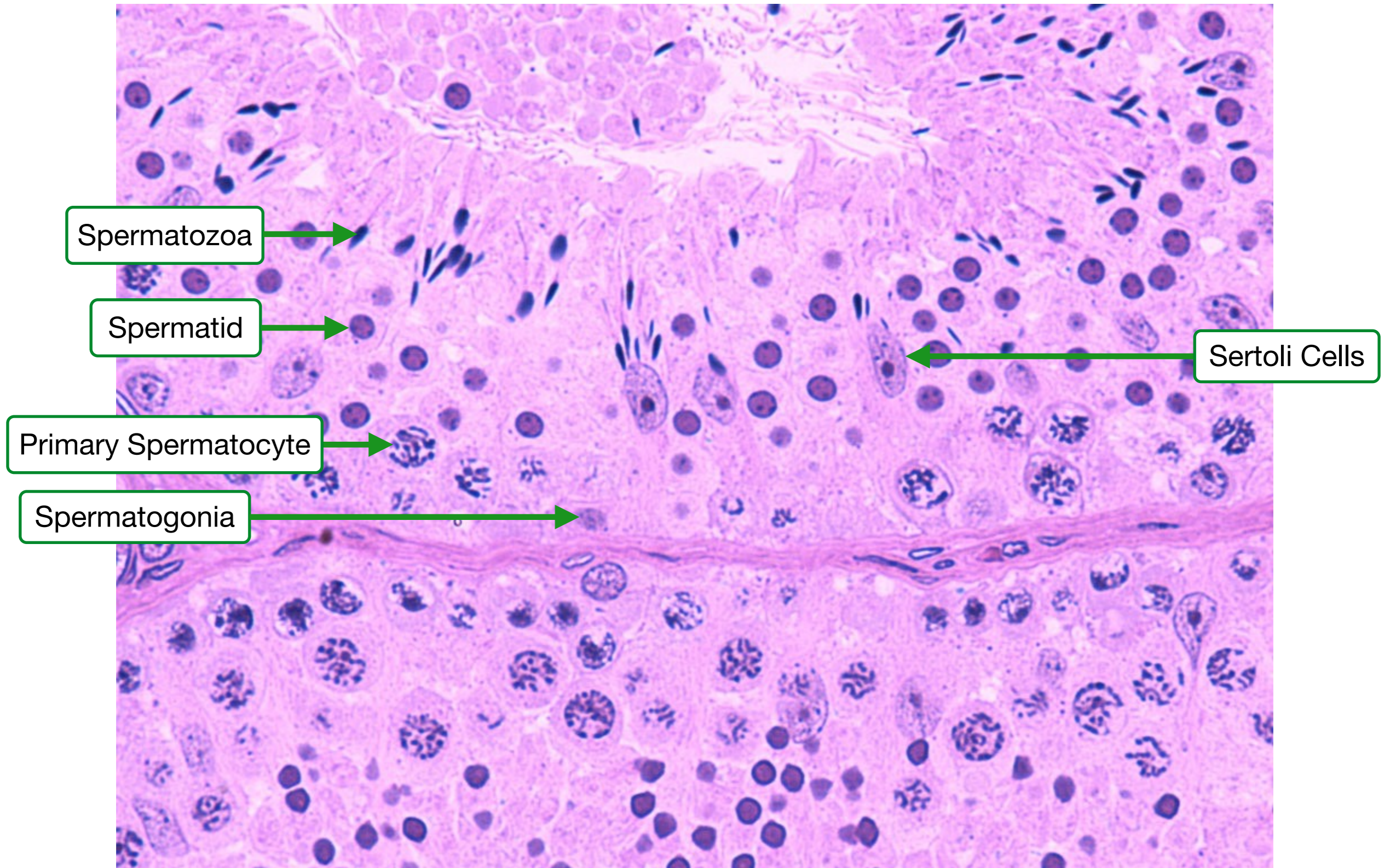


Sperm development proceeds from basal side of the epithelium toward the lumen.

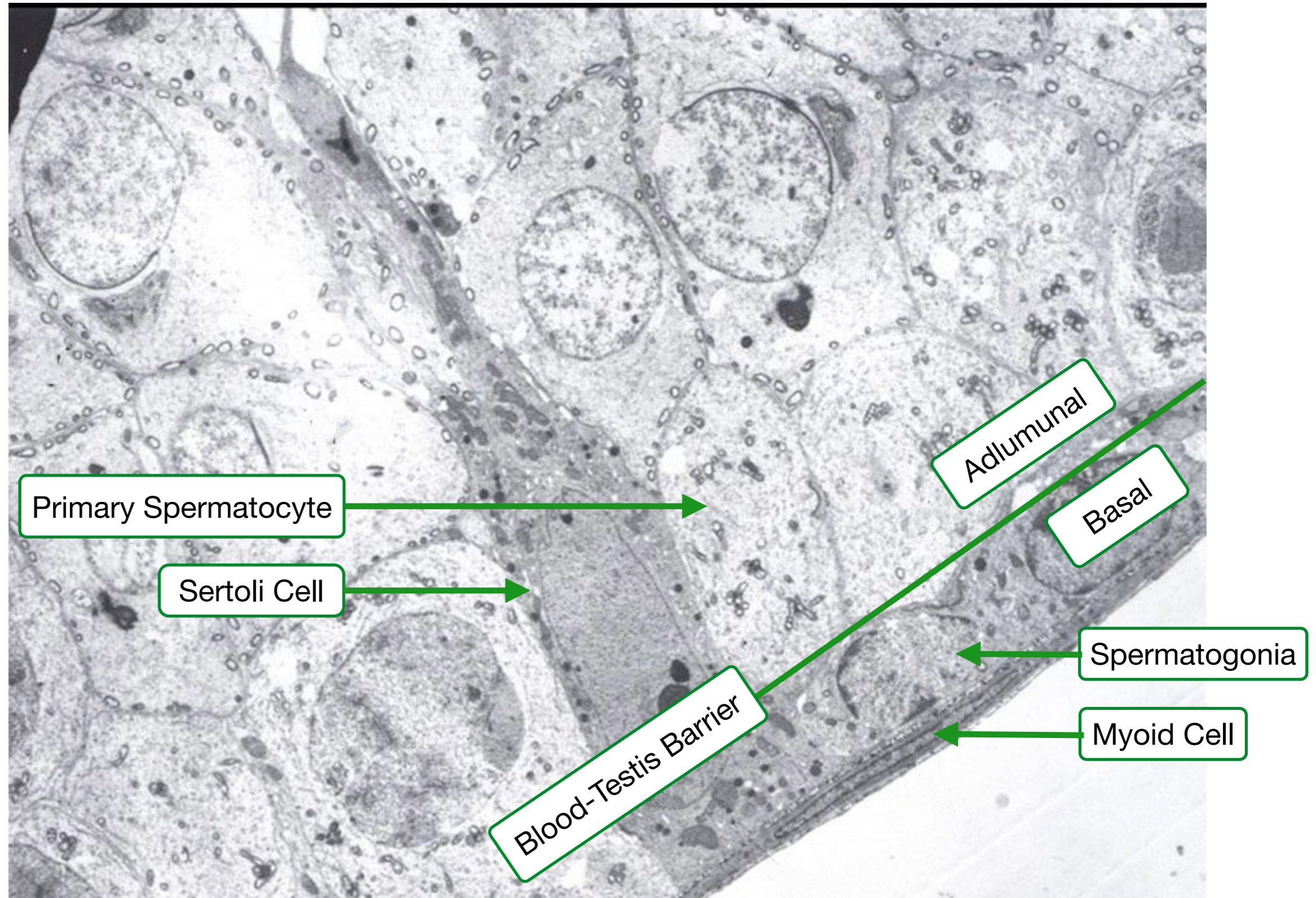




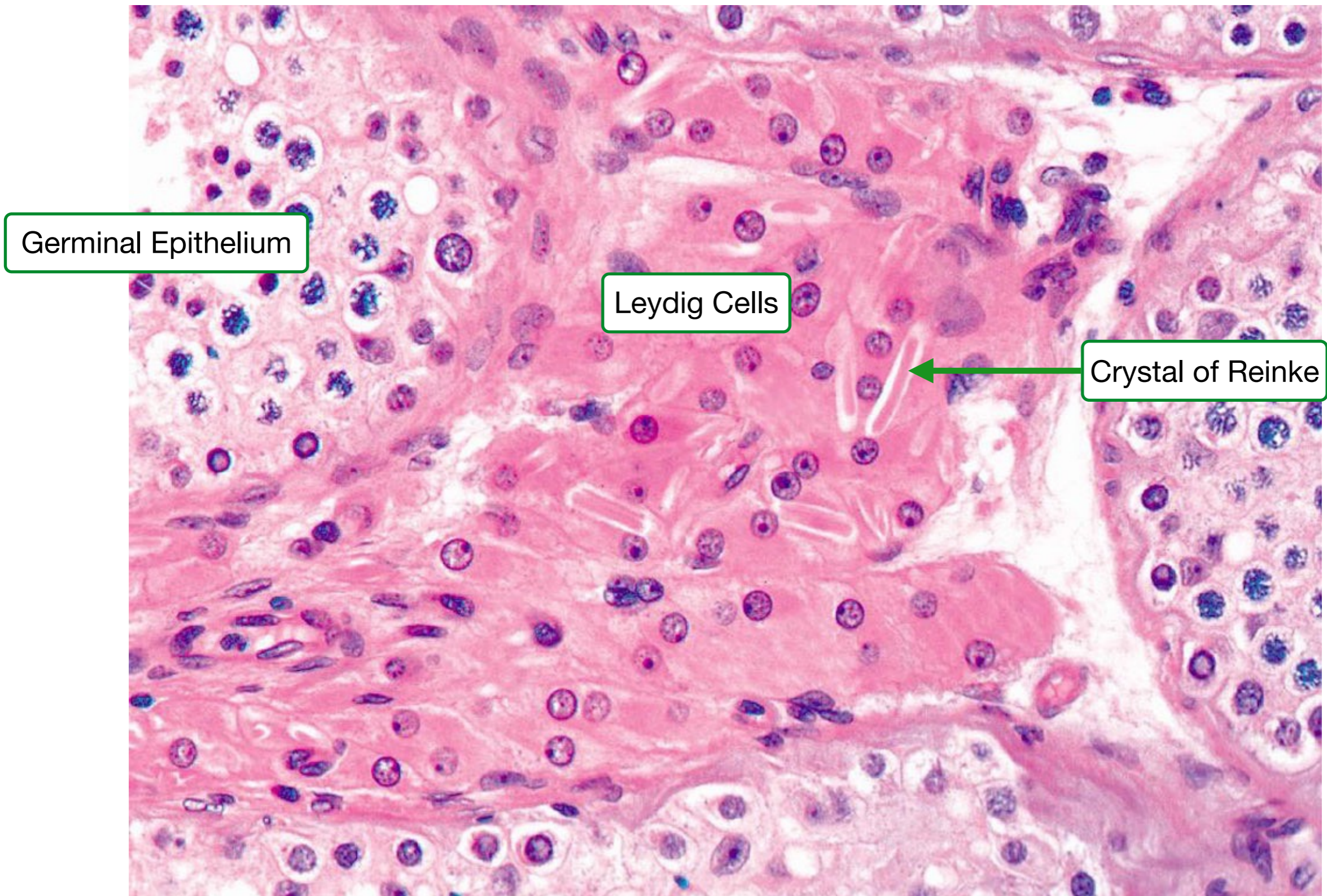
Sertoli cells form an epithelium to support the development of sperm.



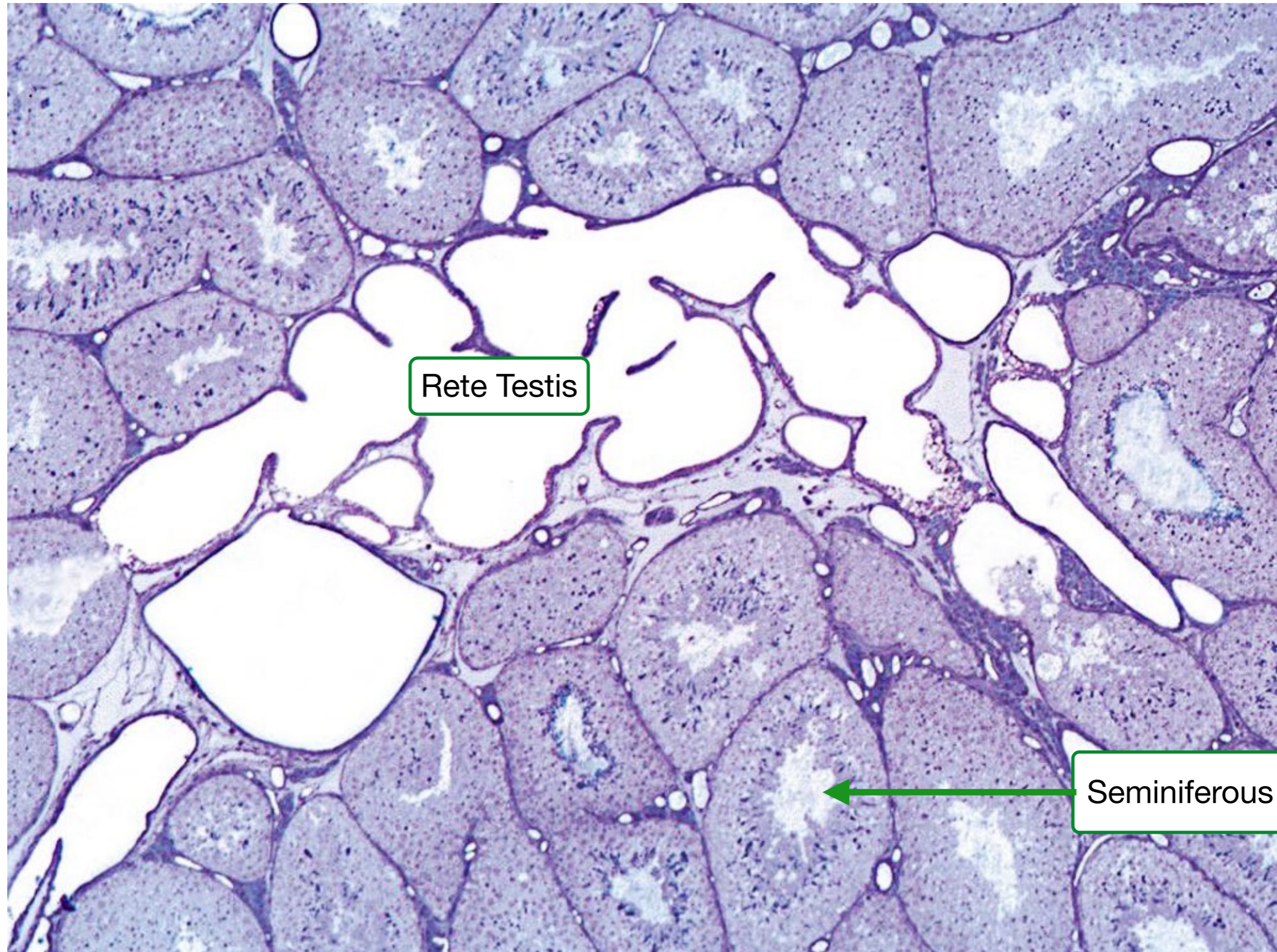
The tight junctions between Sertoli cells generates two separate compartments.



Leydig cells synthesize testosterone and are stimulated by LH.



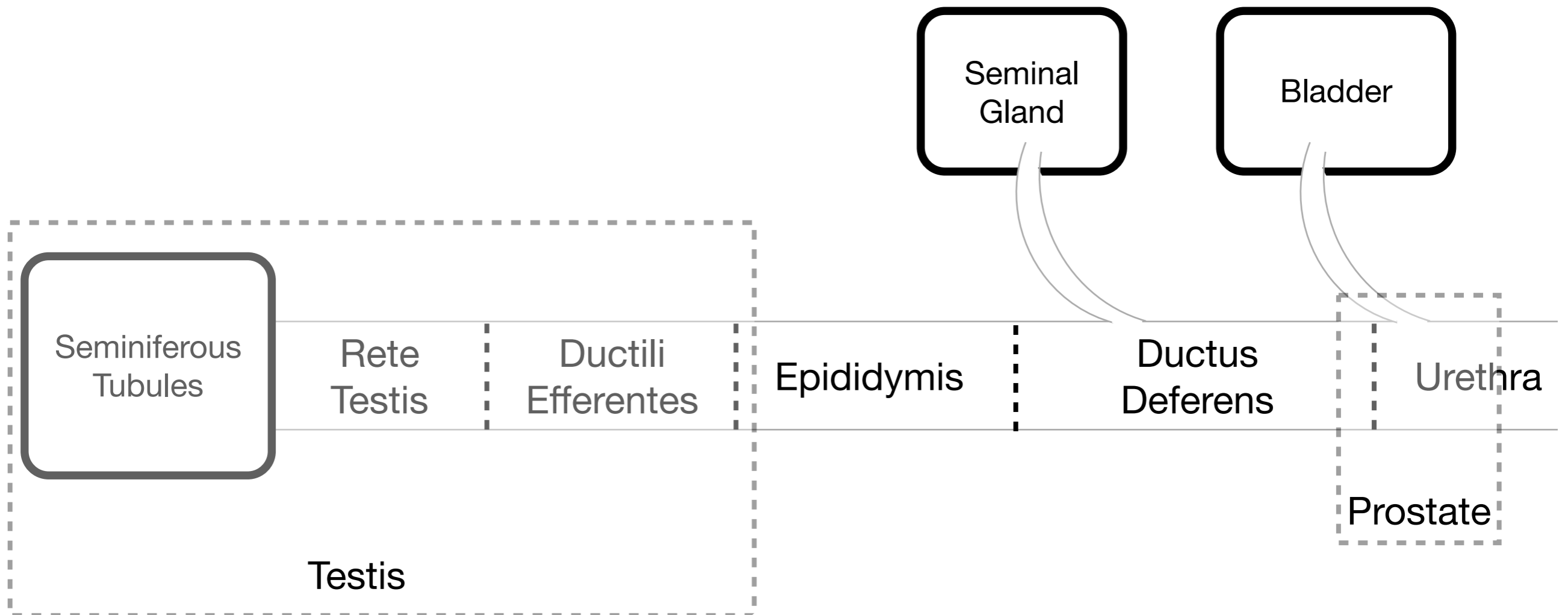
Sperm from seminiferous tubules collects in the rete testis.



# Male Reproductive Tract

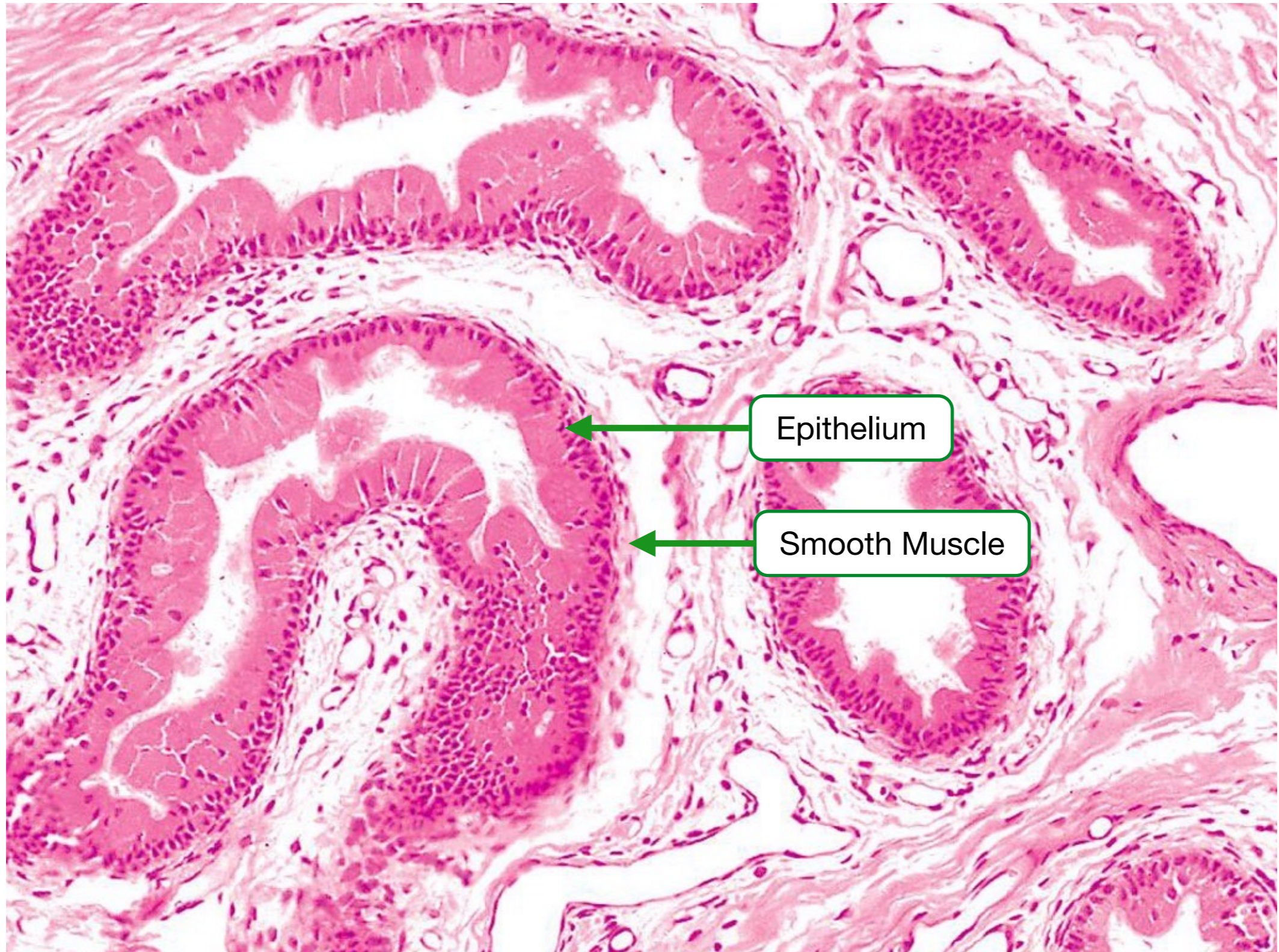
The male reproductive tract comprises several segments with different structures and functions.

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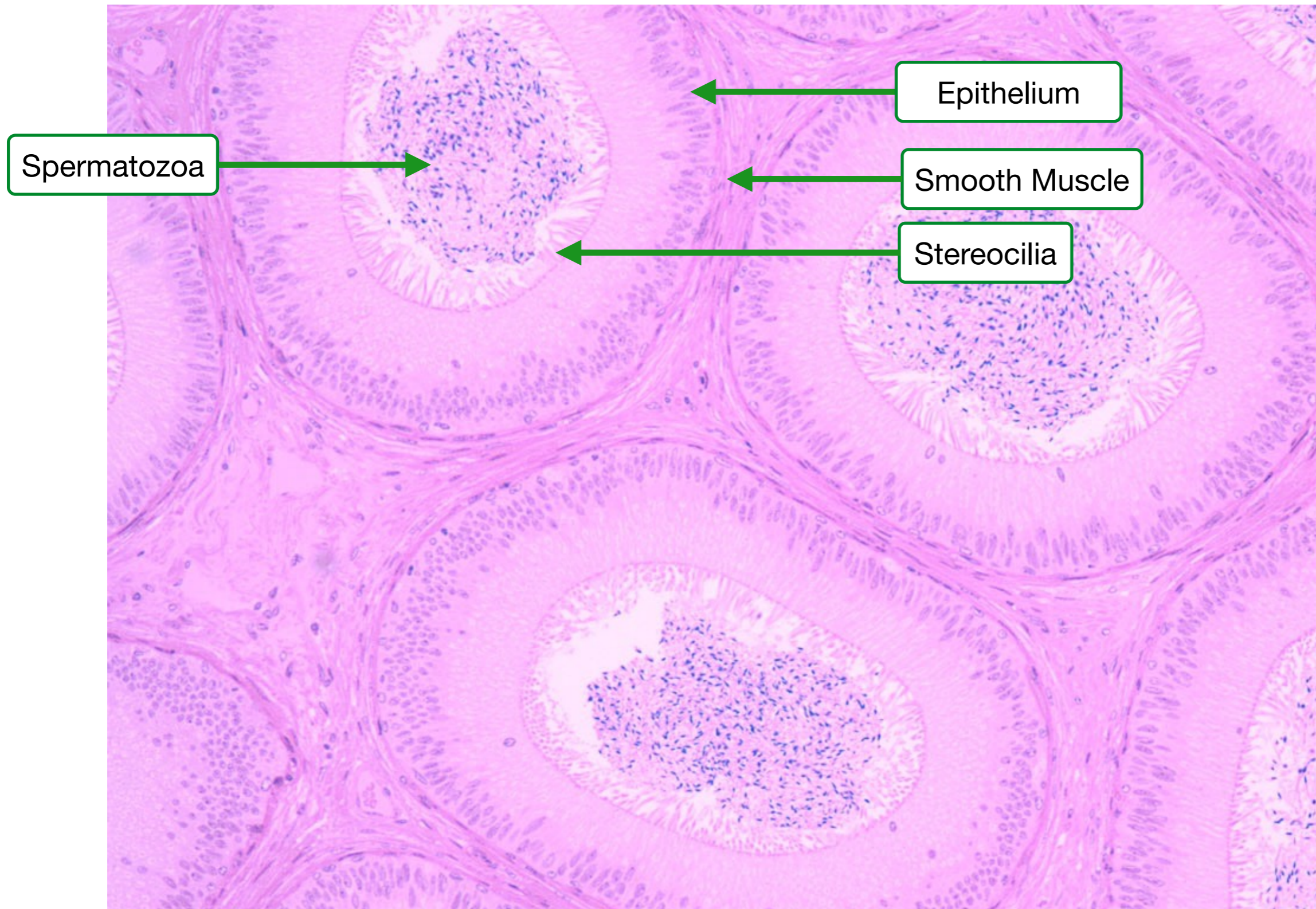
Ductuli efferentes absorbs fluid and propels non-motile spermatozoa from rete testis to epididymis.

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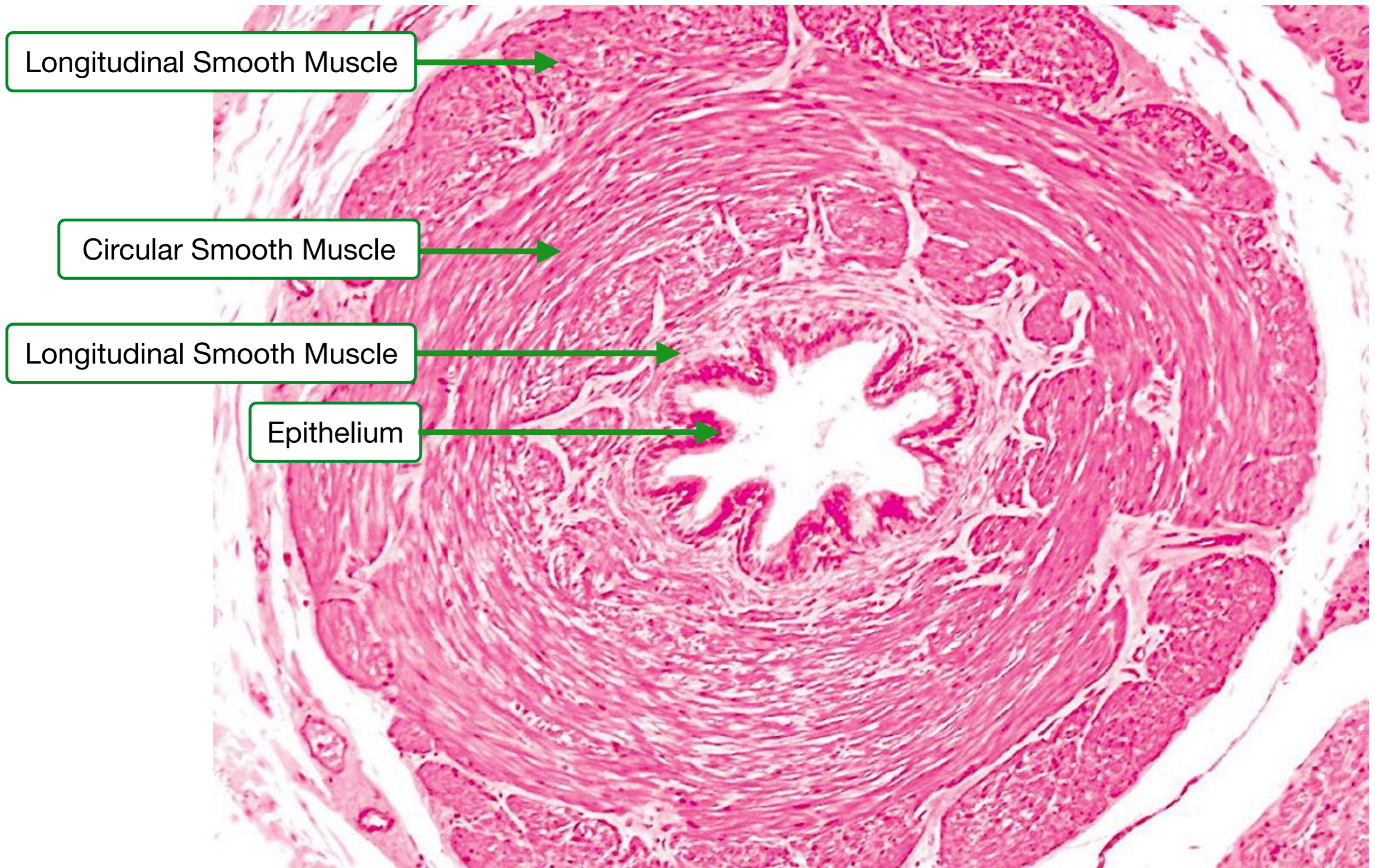
The epididymis is a highly coiled tube where spermatozoa gain motility.

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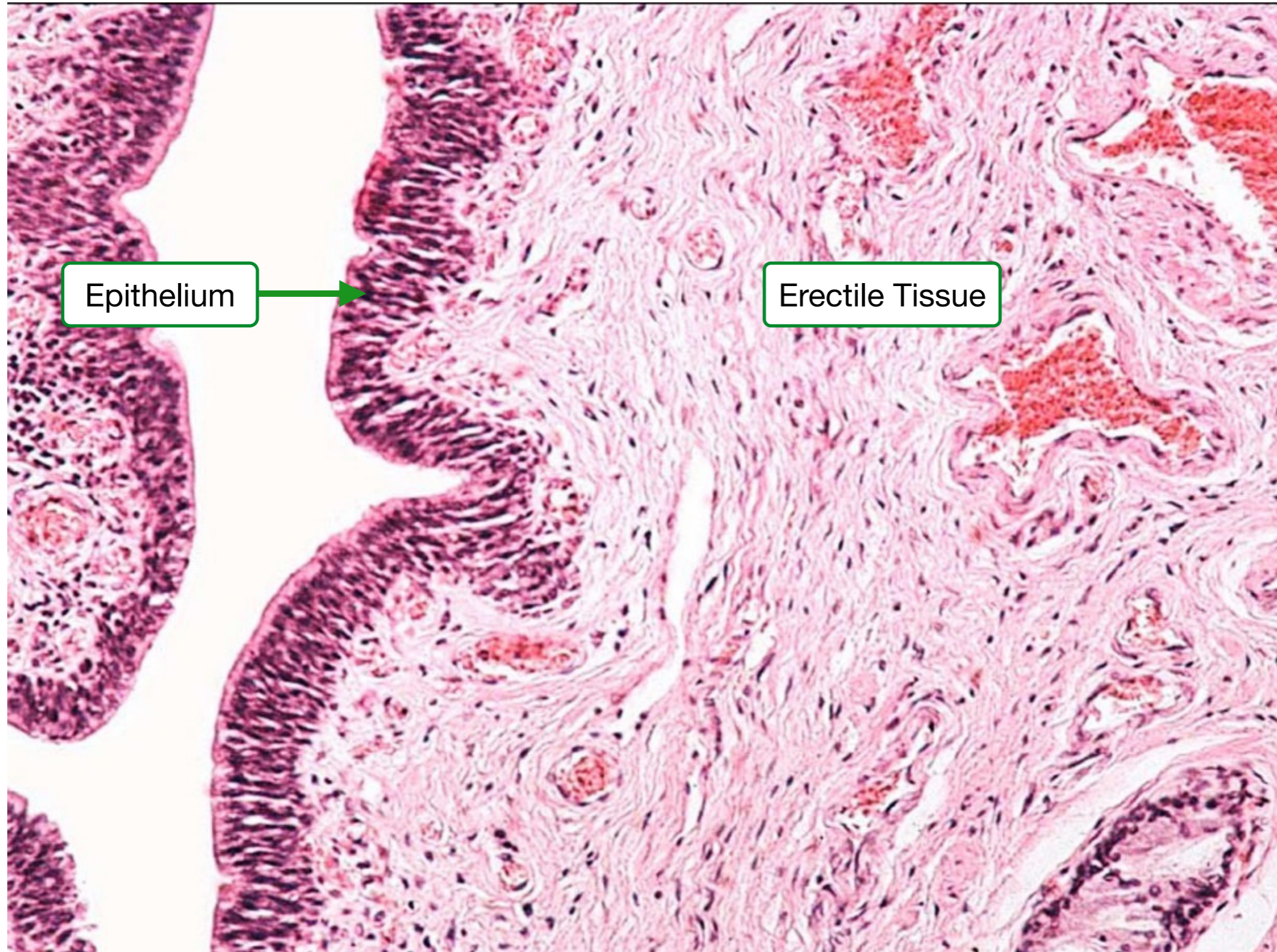




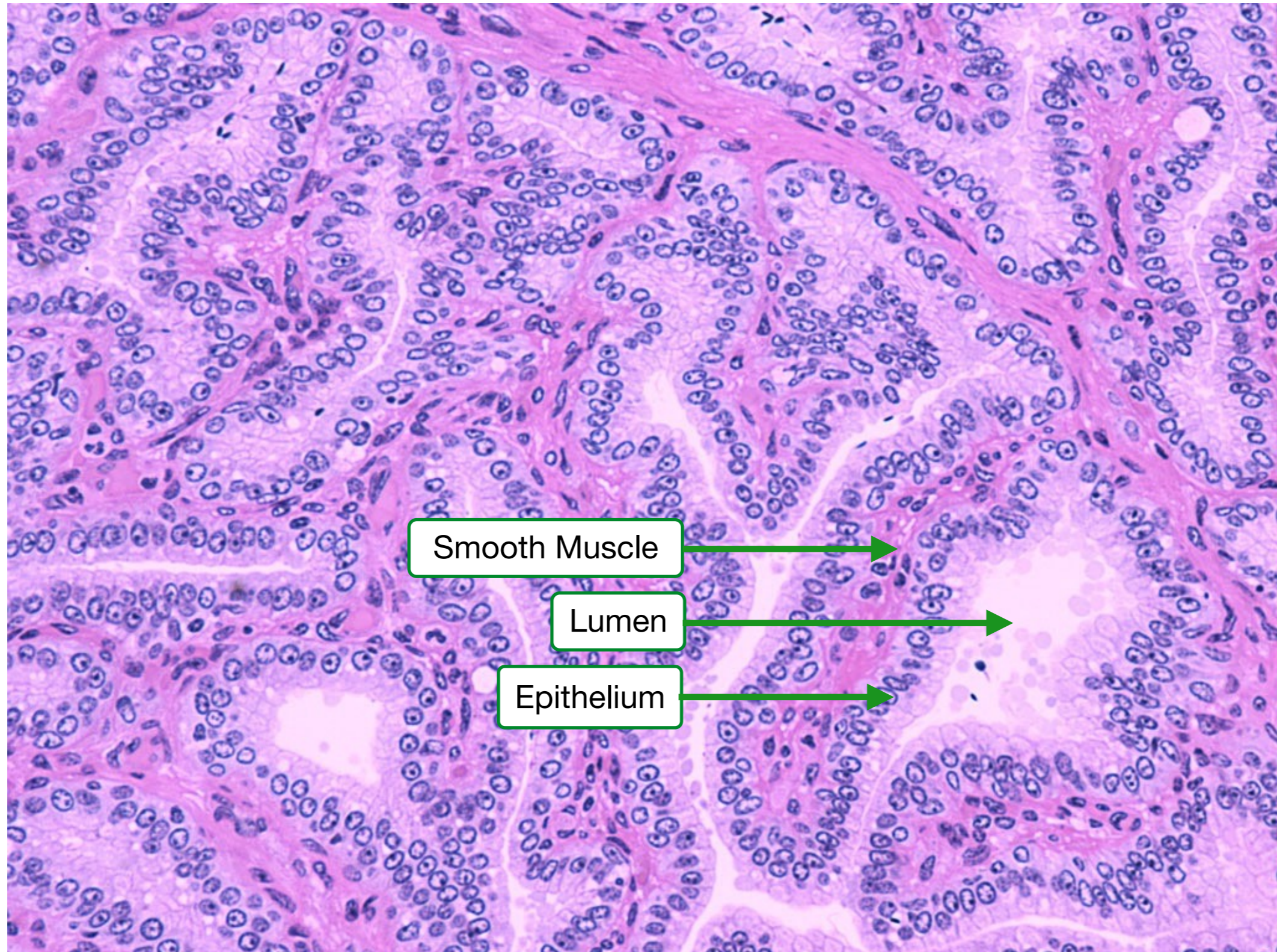
The ductus deferens is a muscular tube whose peristaltic contractions eject sperm.



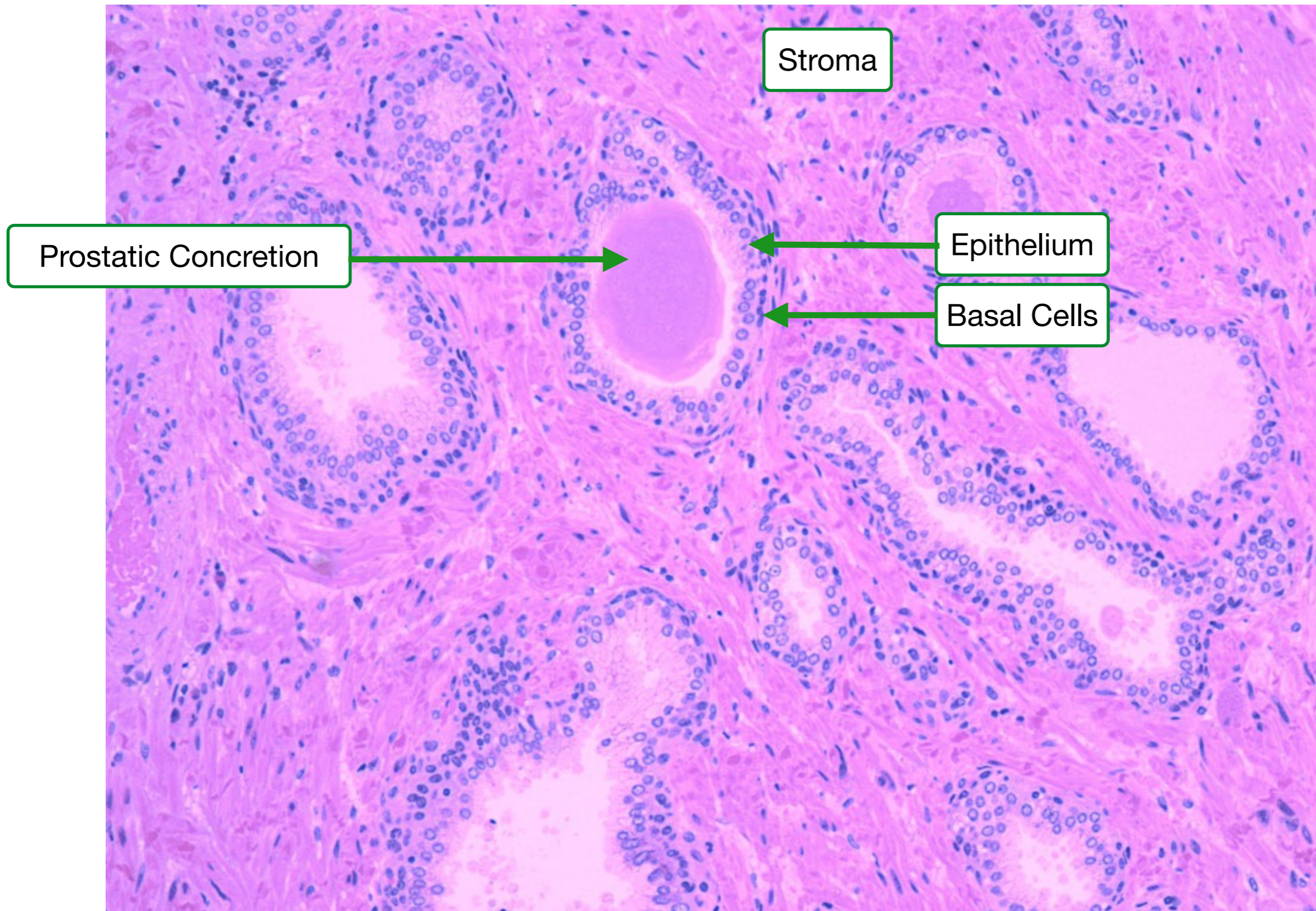
The urethra is lined by a pseudostratified, columnar epithelium and contains erectile tissue in the penis.



Seminal vesicles secrete fluid rich in fructose which is expelled during ejaculation.



The prostate secretes fluid that prevents coagulation of semen.



# Take home messages...

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- Testes contain a germinal epithelium for sperm development that is separated into basal and adluminal compartments
- Sertoli cells support sperm development and respond to FSH
- Leydig cells secrete testosterone and respond to LH
- The segments of the male reproductive tract support sperm maturation and metabolism and semen fluidity.