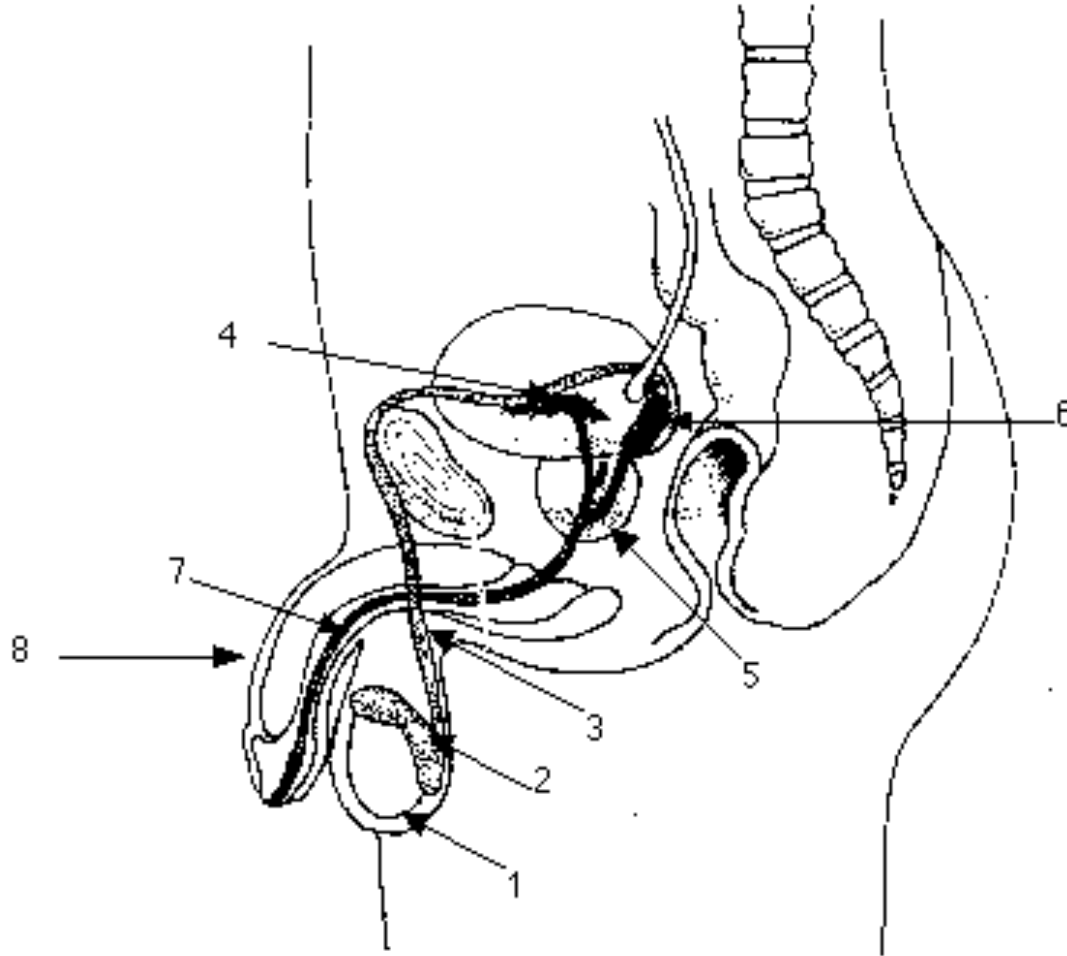


# Male Reproductive Structures

## I. Overview

### A. Main functions:

1. Produce a **haploid** male gamete (**sperm**)
2. **Deposit** sperm in the female so **fertilization** may occur



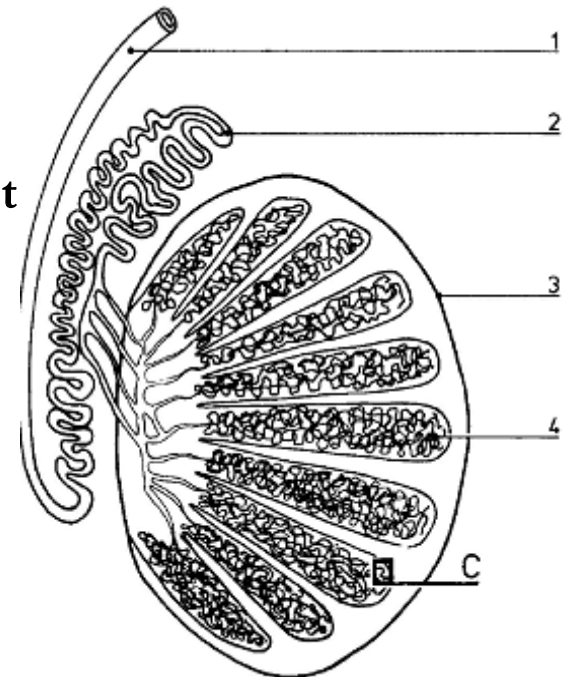
## A. **Scrotum**

1. **Muscular** pouch that holds the **testes** outside of the body cavity
2. **Spermatogenesis** occurs optimally a few degrees **less** than internal **body** temperature
3. Muscular scrotum aids in **temperature control** for the testes
  - a. At **high** temperatures, testes will be **lowered** by the scrotum relaxing to cool by increased **air** circulation and increased **sweat** production which will cool the scrotum through evaporation



## B. Testes (1)

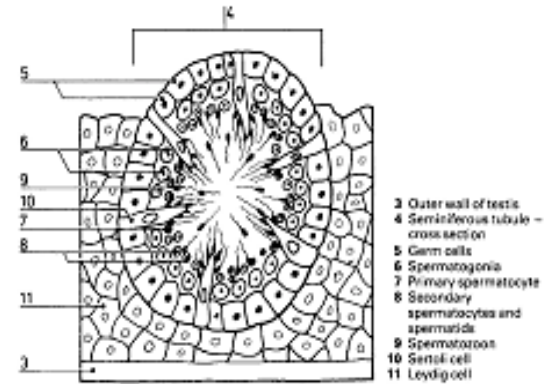
1. **Pair** of organs that develop from gonads within abdomen of fetus
  - a. Descend through a canal into **scrotal sacs** during the last **2** months of fetal development
2. Located **outside** the abdominal cavity in the **scrotum**
3. Contains sections called **lobules**
  - a. Each has **many** coiled **SEMINIFEROUS TUBULES**
  - b. Total length of **250** meters
4. **SPERMATOGENESIS** is development of sperm
  - a. Involves meiosis
  - b. Produce about **300 million** sperm per day
  - c. Starts at **puberty** and stops at **death**
  - d. New sperm are **constantly** being produced in males
  - e. Takes about **9** or **10** weeks



- f. Occurs inside the **seminiferous tubules**
- g. **SERTOLI CELLS**, inside the seminiferous tubules **nourish** the developing sperm cells and **regulate** the cells that **generate** sperm cells

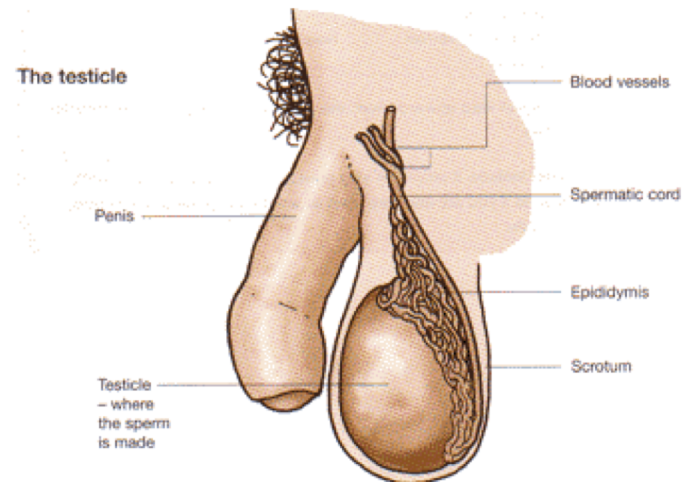
5. **INTERSTITIAL CELLS** lie in the area of the **testis** between the **seminiferous tubules**

- a. Produce male sex hormones
  - i. **Testosterone**
  - ii. **Androgens**



C. **Epididymis (2)**

- 1. Area where seminiferous tubules join to a highly **convoluted** tube lying on **top** of and down the side of the **testis**
- 2. Area where sperm **mature**



D. **Vas Deferens (3)**

1. Sperm **stored** here
2. Long tube from **epididymis** to **urethra**

E. **Seminal Vesicles (6)**

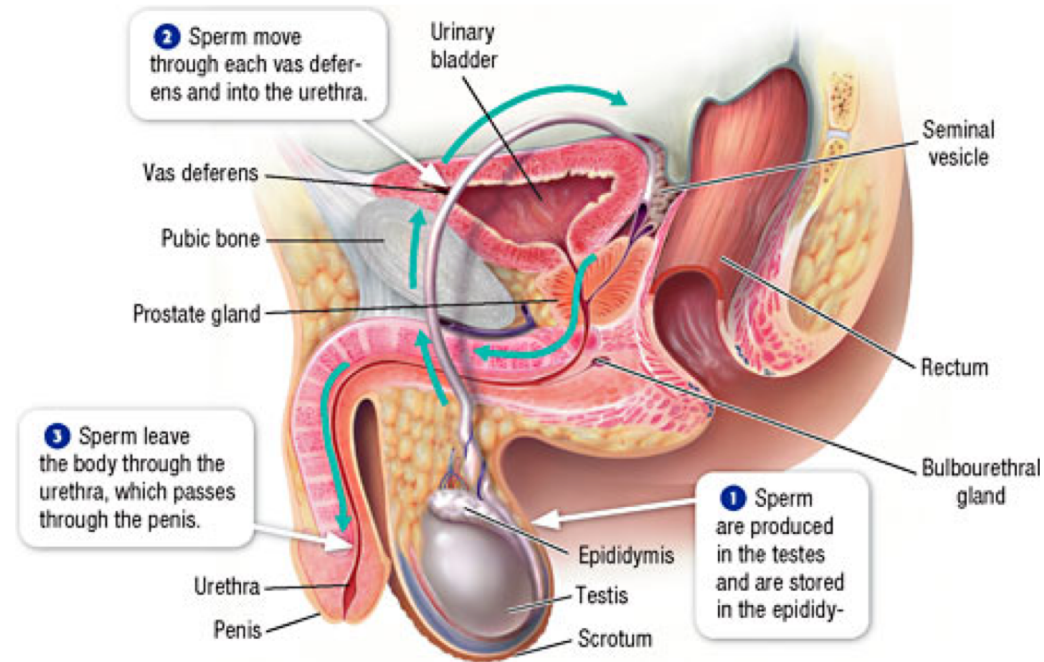
1. **2** small glands
2. Joins **vas deferens** at the base of the **bladder**
3. Makes **most** of the **seminal fluid**
  - a. High in **fructose** which is a **nutrient** for sperm
  - b. **Prostaglandins** which is a hormone that causes **contractions** of the **vagina** to help move **sperm**

F. **Prostate Gland (5)**

1. **Donut** shaped gland that surround the **urethra** at the union of the vas deferens and the urethra
2. Makes **1/3** of the **seminal fluid**
  - a. **Alkaline** secretions that aids sperm **motility** and **survival** because it helps to **neutralize** the **acidic** environment in the **vagina**
3. Prostate gland **enlargement** is common in **older** men
4. It can constrict the **urethra** and makes **urination** difficult
5. **Prostate cancer** is 3<sup>rd</sup> largest cancer killer of men

## G. **Bulbourethral Glands/Cowper's glands**

1. **2** small glands
2. Located **below** the **prostate**
3. Makes a **small** part of the **seminal fluid**
  - a. Secretes **mucus** that **lubricates** and readies the **urethra** prior to ejaculation
  - b. Secretes **alkaline** fluid to **neutralize urine** in urethra



## H. **Urethra** (7)

1. **Functions:**
  - a. Exit for the **urine**
  - b. Exit for **semen**
  - c. **Cannot** do both at the same time
2. **Semen** is expelled out of urethra by rhythmic muscular contractions → **male orgasm**

I.

## Penis (8)

### Ted Talk Penis Anatomy

1. A **cylindrical**-shaped organ that hangs in front of **scrotum**
2. Spongy tissue inside shaft of penis is **flaccid** (soft) with **normal** blood flow in the penis
3. **ERECTION** occurs from **increased** blood flow filling spongy tissue
4. Penis needs to be **erect** and **hard** to allow **semen** to be deposited in the vagina near the **cervix**
5. **IMPOTENCY** is failure to become erect



## I. Path of Sperm

- A. **Testes**
- B. **Epididymis**
- C. **Ductus (vas) deferens**
- D. **Prostate Gland**
- E. **Urethra**



## II. Process of Ejaculation

- A. **EJACULATION** is a process in which **semen** is forced from the **penis**
- B. **Sexual** arousal can cause an **erection**
  1. Penile **artery** will dilate and there will be **more** blood entering the **spongy** tissue of the penis
  2. Penile **vein** will be forced **shut** and the blood entering the penis will **engorge** the tissue causing an **erection** and allowing **insertion** of the penis into the female's **vagina**
  3. Average length of **flaccid** (relaxed state) penis is about **8 cm**
  4. Average length of **erect** penis is about **13 cm**