

Outcome 1

Class 1 – The Male Reproductive System

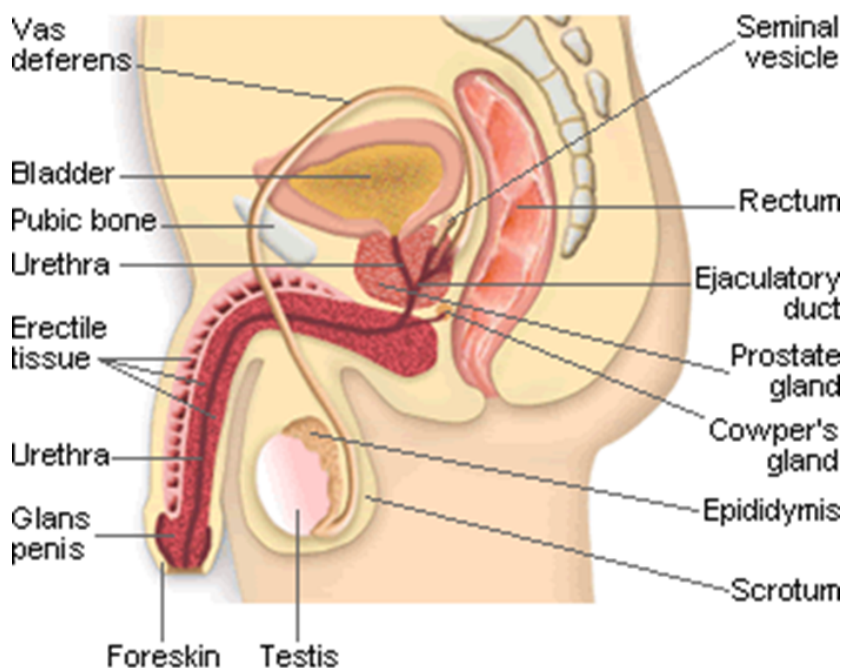
Notes

<https://www.youtube.com/watch?v=i93q0tKWX6g>

Intro – Sexual Reproduction...What, Why, How?

Parts of the Male Reproductive System:

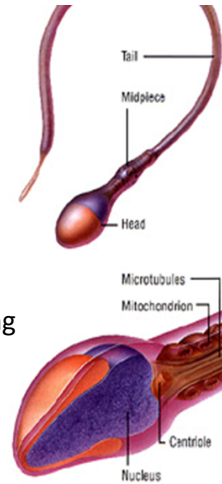
- **Scrotum** – contains testes
- **Testes** – produces sperm and testosterone
- **Epididymis** – site of sperm maturation
- **Vas Deferens** (singular) – carries sperm to urethra
 - Vasa deferentia (plural)
- **Seminal Vesicle** – add fluid to ejaculate which contains fructose and prostaglandins
- **Prostate Gland** – adds buffering fluids to ejaculate that protects sperm from acidic vaginal environment
- **Cowpers Gland** – secretes mucous rich fluid to the semen
 - ↳ pre-coital lubrication, neutralizes male urethra
- **Urethra** – carries urine from bladder out of body or carries semen (sperm and fluids) out of body
 - Sphincter muscles let only urine or semen in the urethra at one time
- **Penis** – a reproductive organ and additionally serves as the external organ of urination
 - Penis bone is found in many mammals, but not humans



Structure of Sperm and Sperm Production:

The Head

- This has two important features.
 - **Acrosome** contains enzymes
 - released when the sperm reaches an egg.
 - enzymes digest the outer membrane of the egg, allowing penetration of the sperm.
 - The **nucleus** contains a single set of chromosomes (23)



The Middle Section (midpiece)

- immediately behind the head
- contains numerous **mitochondria**.
 - use sugars in the semen to generate ATP in order to provide the energy for movement of the tail.

The Tail

- provides sperm momentum

Sperm Production (Spermatogenesis)

- Testes are filled with twisting tubes called **seminiferous tubules**
- Lined with sperm producing cells called **spermatogonia**
- Divide into **spermatocytes** which contain 23 chromosomes through the process of **meiosis**
- Spermatocytes differentiate into **spermatids** (immature sperm cells)
- **Sertoli** cells nourish and help the development of the sperm cells
- Then move to the **epididymis** to mature

