

Human Reproduction



Reproduction Intro

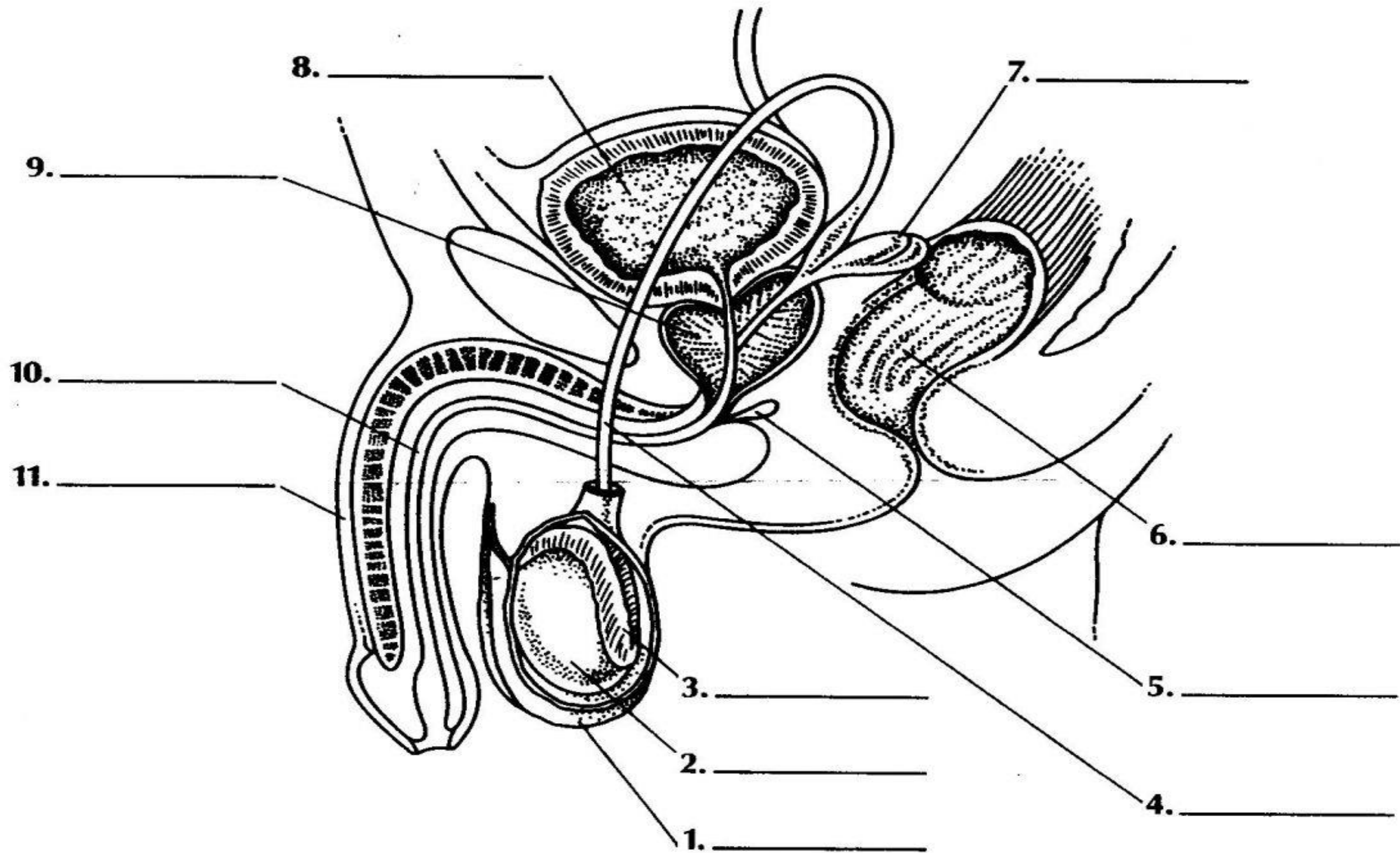
- The production of new individuals begins with **sperm** from a male and an **oocyte** (egg) from a female.
- Sperm and egg are **gametes** (sex cells). They mix genetic contributions from past generations.
- The male and female systems contain paired structures called **gonads**, where the sperm and oocytes are manufactured.



The Male

- The male reproductive system performs 2 major functions:
 - Production of sperm
 - Deposition of sperm within the female reproductive tract

[Sperm: 15 crazy things you should know](#)



Structures – follows #s on diagram

1. Scrotum- external sac containing the testes, keeps sperm temperature 1-3 degrees cooler than normal body temp.
2. Testes- male gonads which produce sperm and testosterone. Contain seminiferous tubules where sperm are created.
3. Epididymis- where sperm matures and is stored.
4. Vas deferens- tube that carries sperm from the epididymis to the urethra.

5. Cowper's gland- Secretes an alkaline mucus that coats the urethra before sperm are released.
6. Rectum- storage of feces (no reproductive function)
7. Seminal vesicle- secrete fructose (a sugar that supplies sperm with energy).
8. Bladder- stores urine (no reproductive function)
9. Prostate gland- produces a thin, milky, alkaline fluid that activates the sperm to swim.

10. Urethra- tube that leads to the outside of the body through the penis (both reproductive & excretory function)

11. Penis- deposits semen in the female reproductive tract

*Glands (#5,7, & 9) secrete seminal fluid

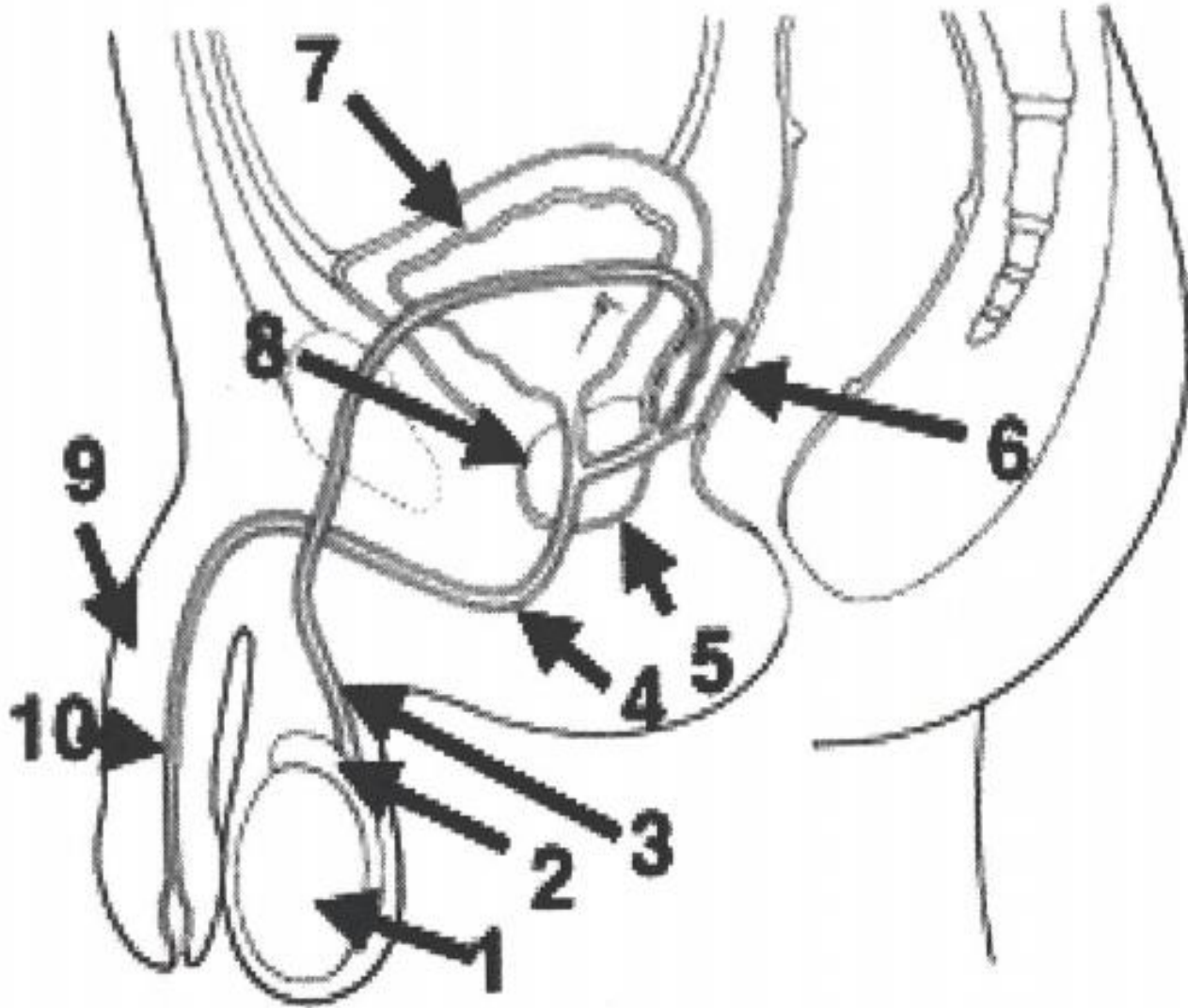
Seminal fluid + Sperm = Semen

–provides nutrients and a fluid medium for sperm to swim.

MICHAEL
PHILPS



Label each of the numbered structures of the male reproductive system. Some numbers may be pointing to the same structure.

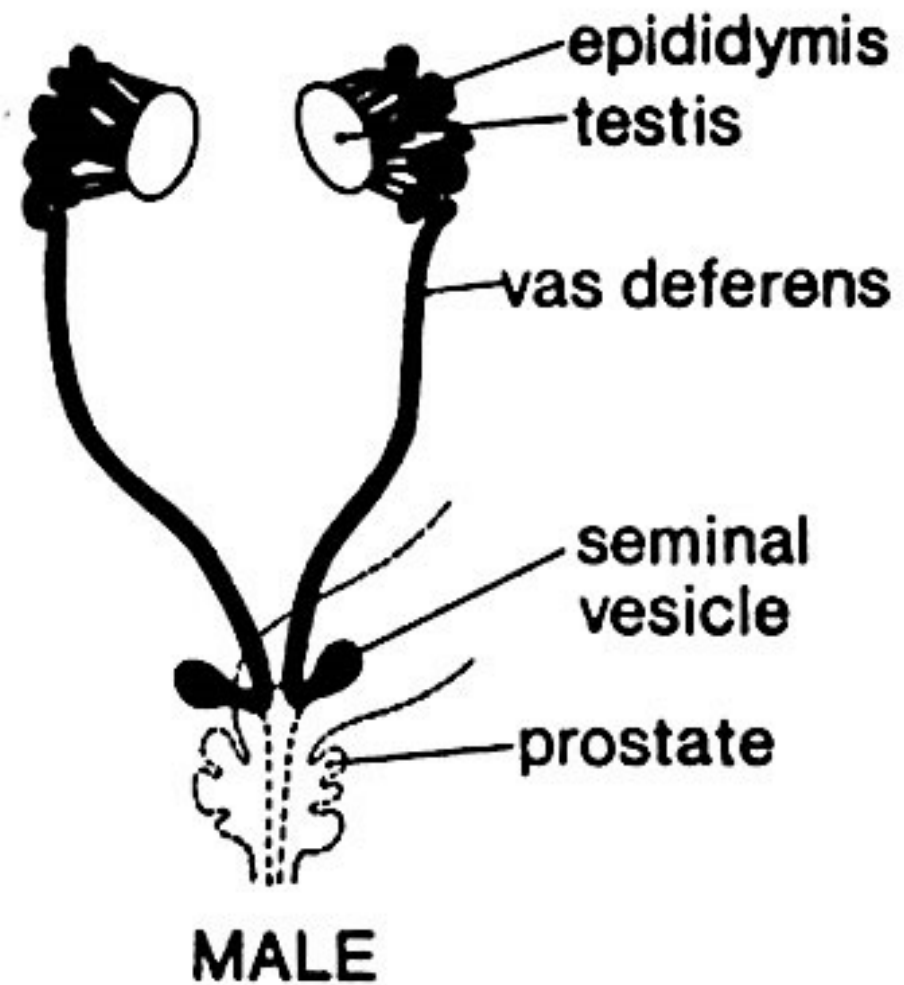
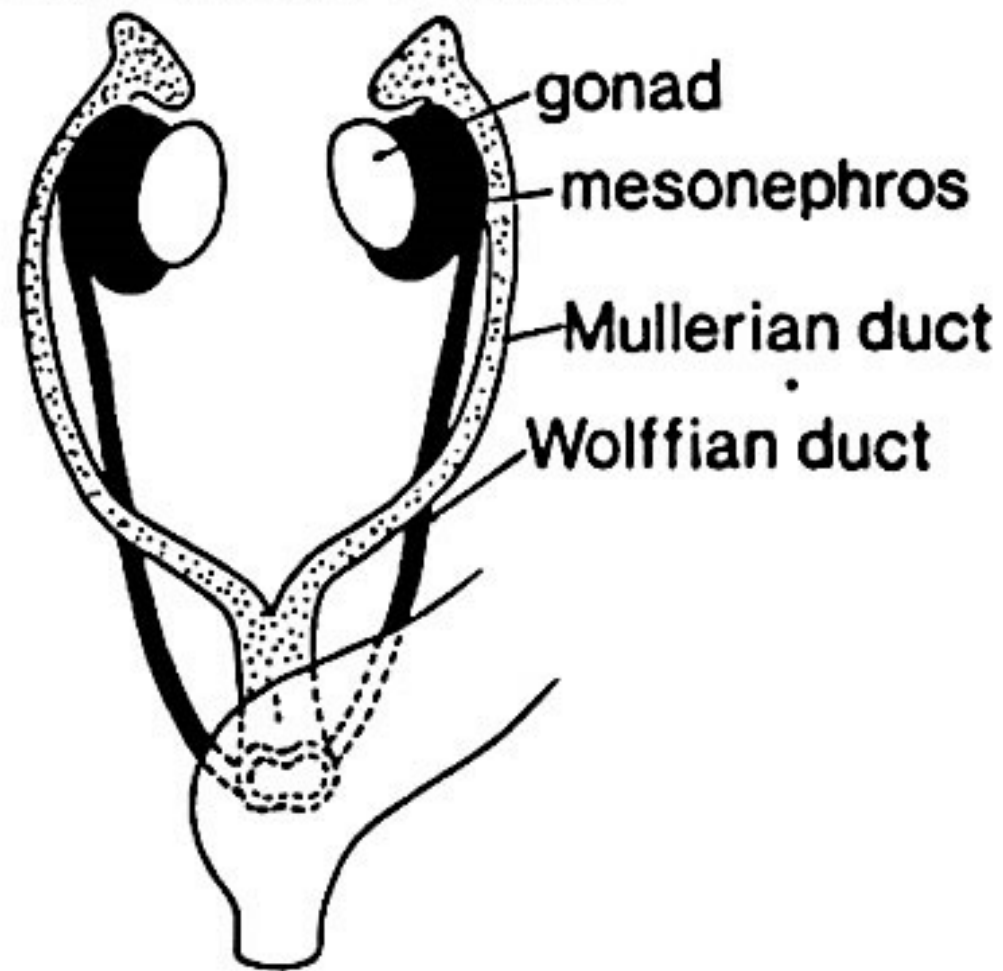


1. testes
2. epididymis
3. vas deferens
4. cowper's gland / urethra
5. prostate
6. seminal vesicles
7. urinary bladder
8. prostate
9. penis
10. urethra

Early Sexual Development in Males

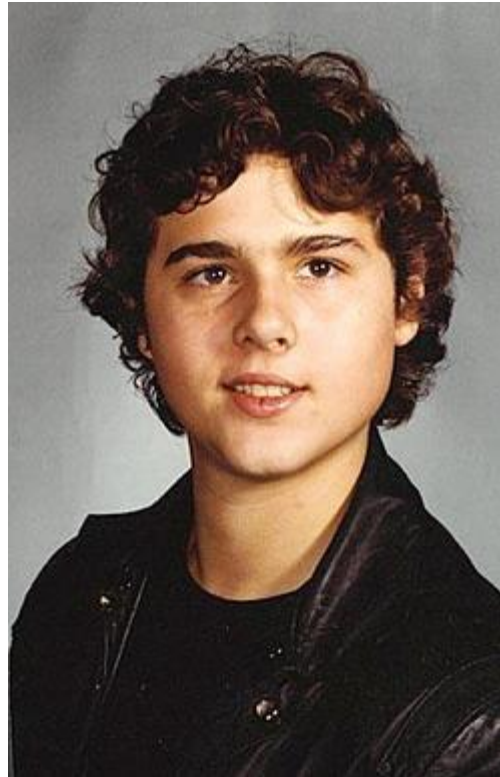
- Sexes look alike until the 9th week of prenatal development.
- During week 5, embryos develop unspecialized gonads near 2 sets of ducts.
- In males, **Wolffian** ducts persist and male sexual structures develop.
 - This occurs in the 6th week due to the Y chromosome.
 - The SRY gene on the Y chromosome activates hormones that steer development along a male route.

INDIFFERENT STAGE



Case Study: David Reimer

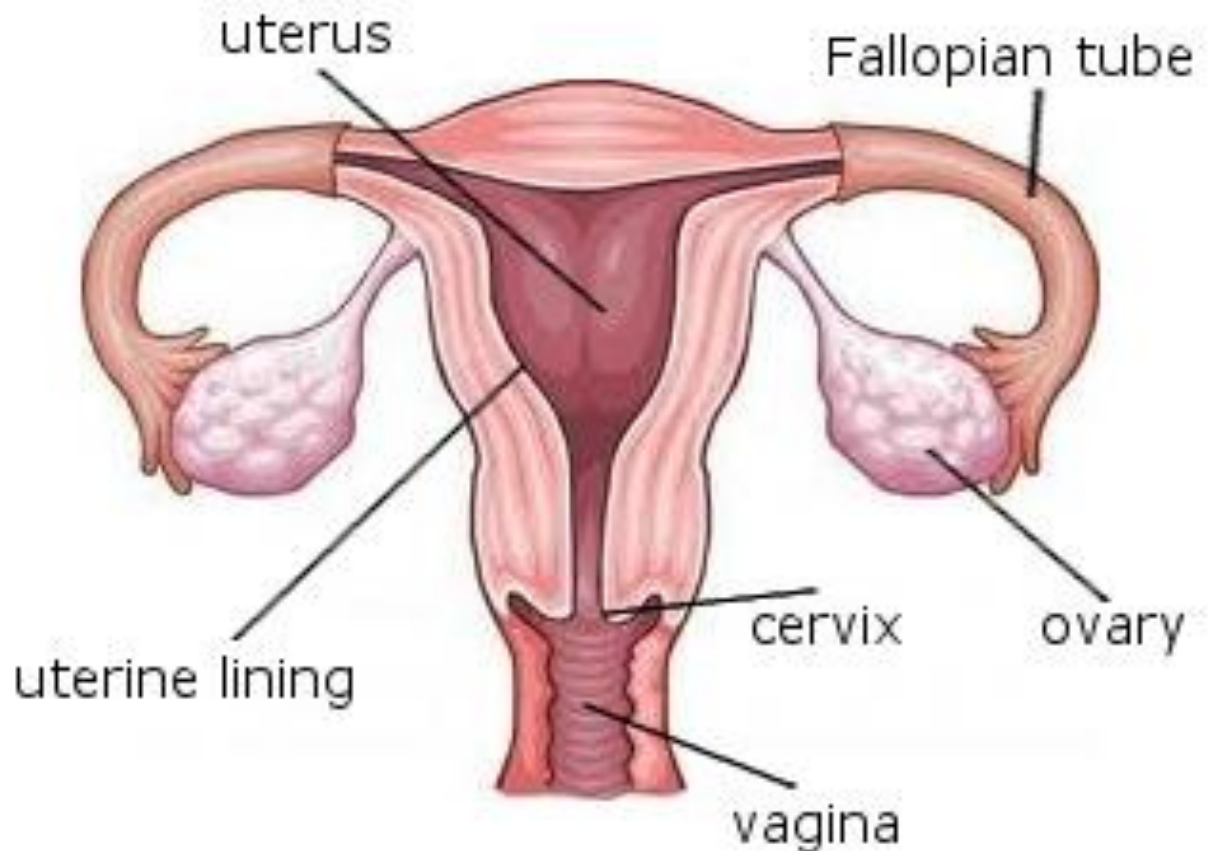
- [BBC Documentary - Dr. Money and the boy with no penis](#)

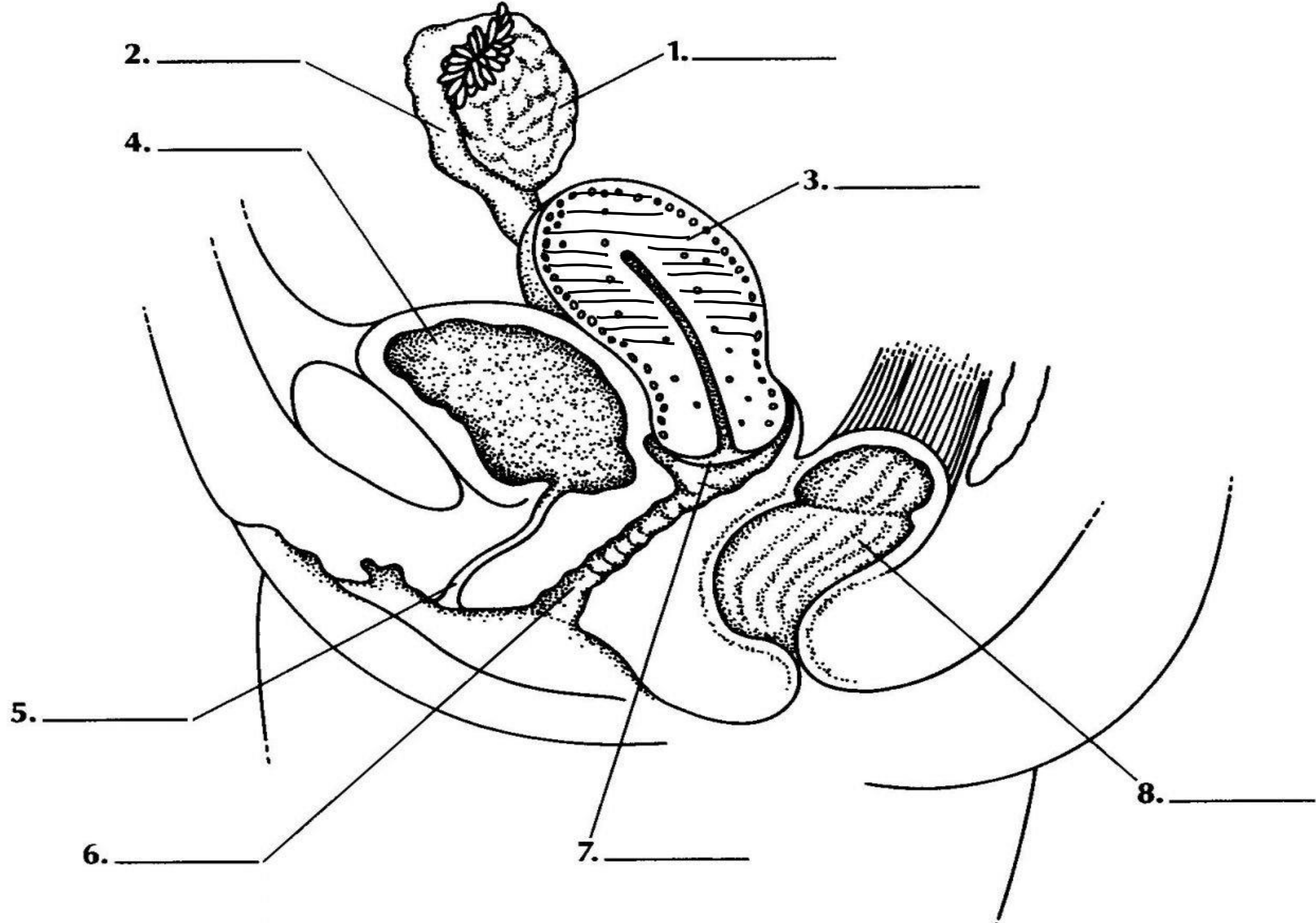


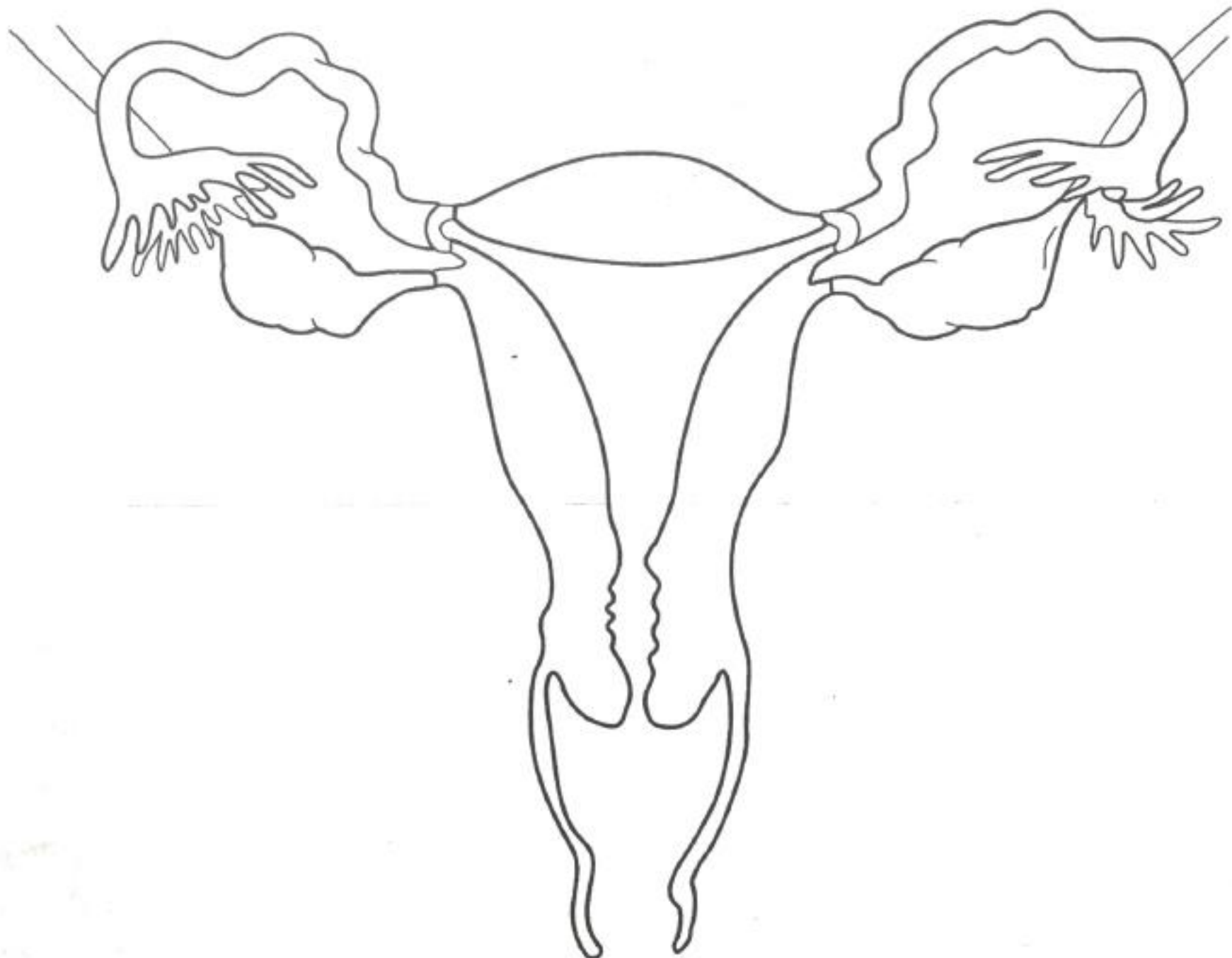
The Female Reproductive System

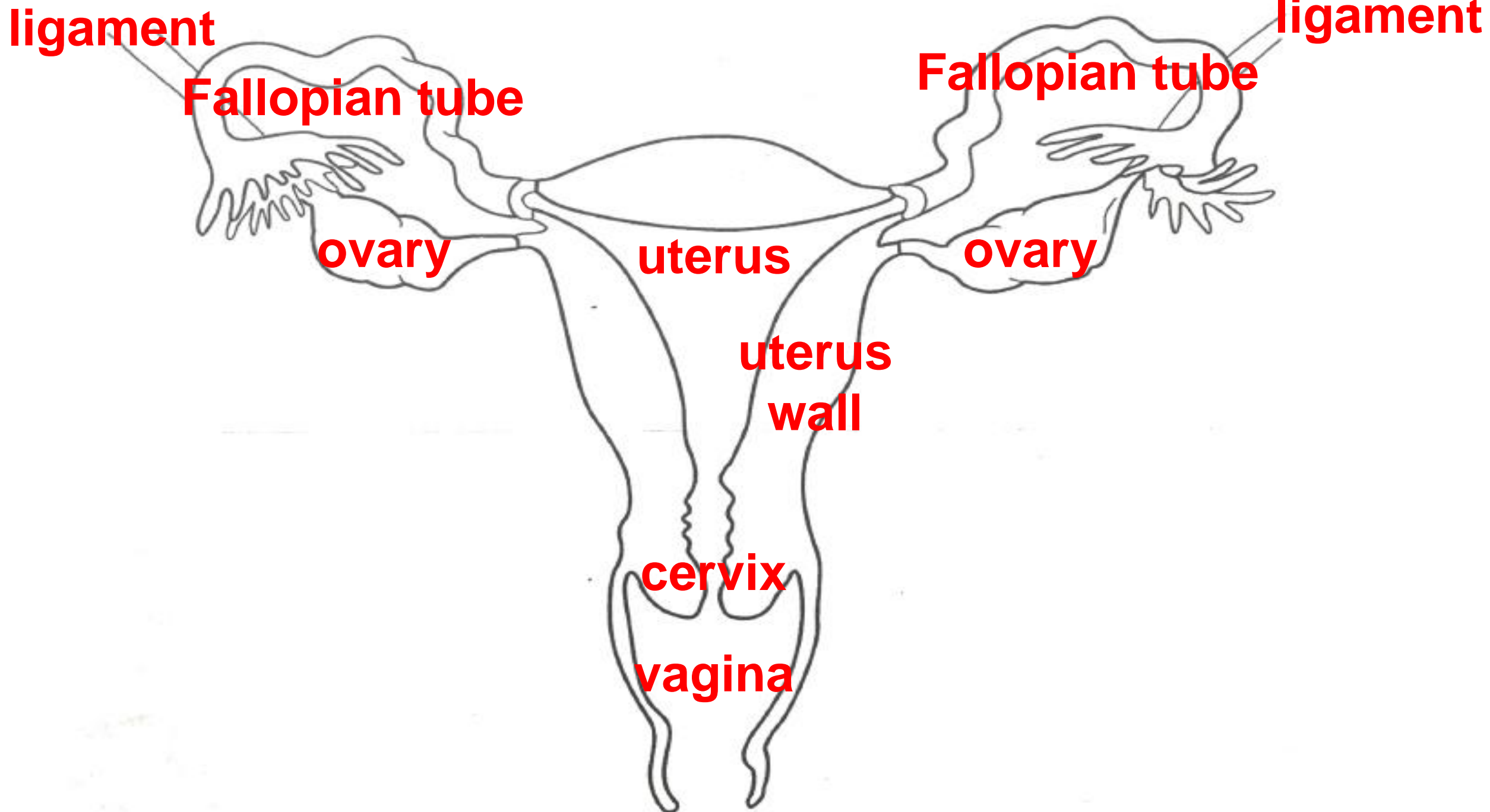
Primary Functions:

- 1- production of oocytes (egg cells)
- 2- internal fertilization
- 3- internal development of embryo/fetus









ligament

Fallopian tube

ovary

uterus

**uterus
wall**

cervix

vagina

Fallopian tube

ovary

ligament

Female Structures – follows #s on diagram

1. Ovary- female gonad, produces oocytes (eggs cells) and female sex hormones estrogen and progesterone
2. Fallopian tubes (oviducts)- tubes through which the egg passes through after being released from the ovary
*Fertilization takes place here
3. Uterus- organ where the fertilized egg (embryo) implants and develops during pregnancy in the female body
4. Bladder- stores urine (no reproductive function)

5. Urethra- tube through which urine leaves the body (no reproductive function in females)
6. Vagina- muscular tube, leads to the uterus from the outside of the body
 - receives sperm during intercourse
 - serves as birth canal during childbirth
7. Cervix- narrow neck at base of the uterus where it meets the vagina; dilates (widens) during childbirth
8. Rectum- stores feces (no reproductive function)

Egg Development

Follicle - cluster of cells surrounding an oocyte (egg cell) in the ovary; helps egg mature before it is released

Egg Release - Ovulation

- mature follicle ruptures and releases its egg into the fallopian tube where it can be fertilized
- occurs approximately once every 28 days

Fertilization – joining of gametes (sperm & egg) to form a zygote; occurs in the upper portion of the fallopian tube