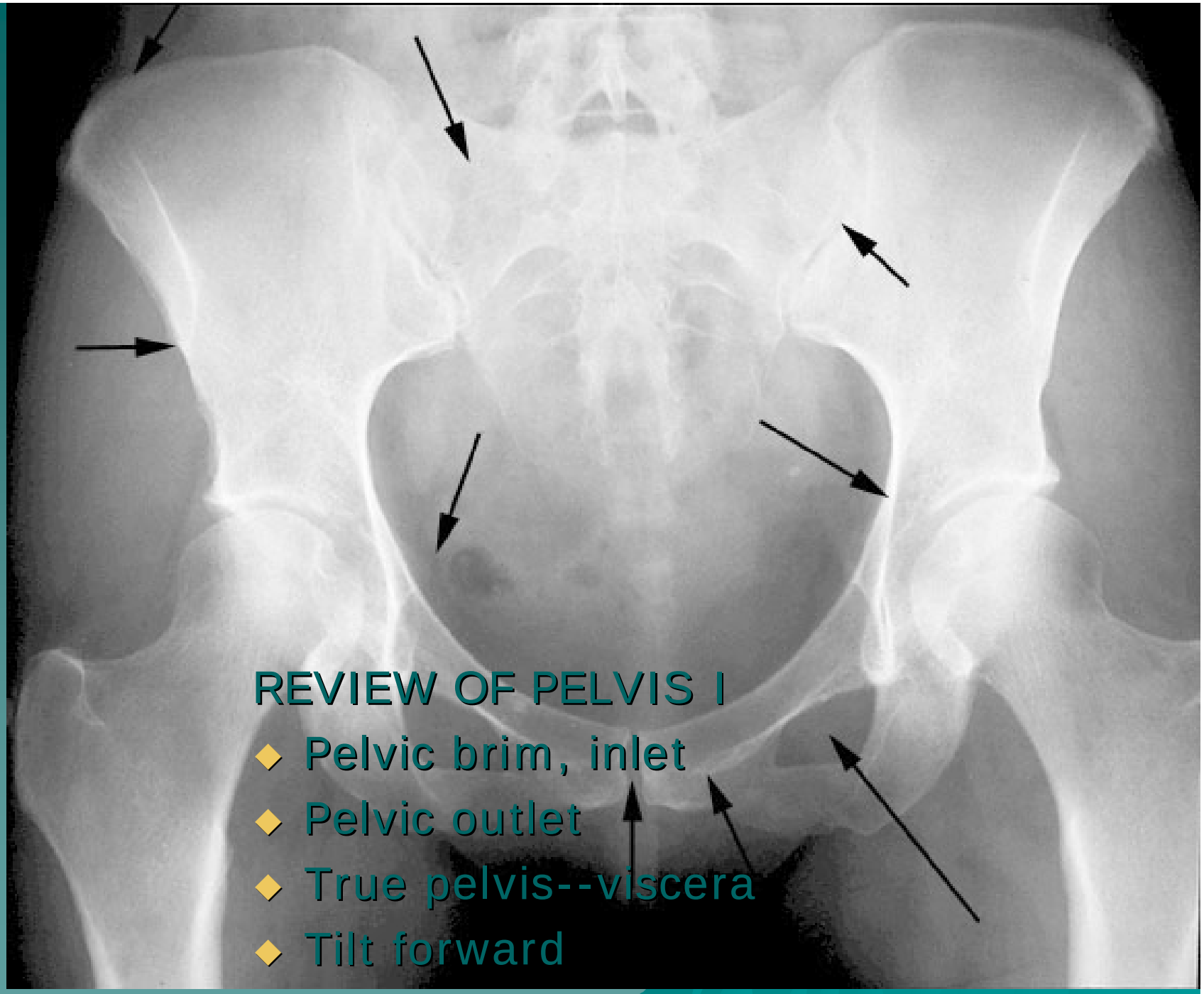
PELVIS II: FUNCTION TABOOS (THE VISCERA)

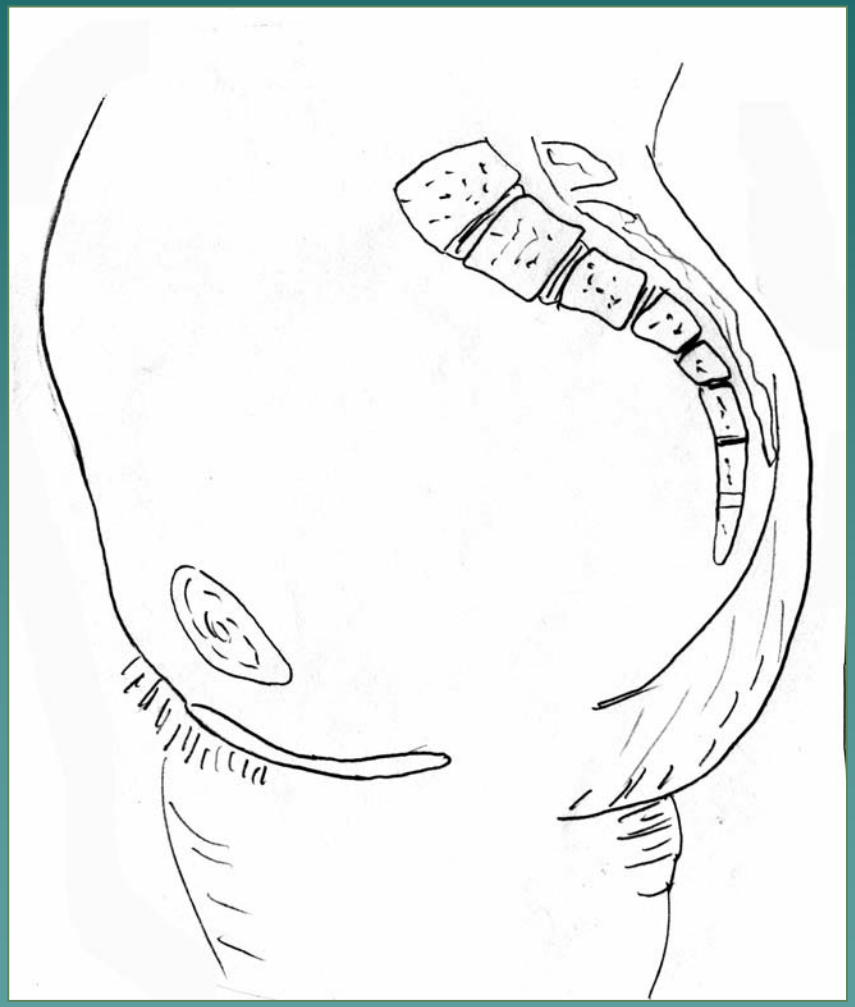
- Defecation
- Urination
- Ejaculation
- Conception

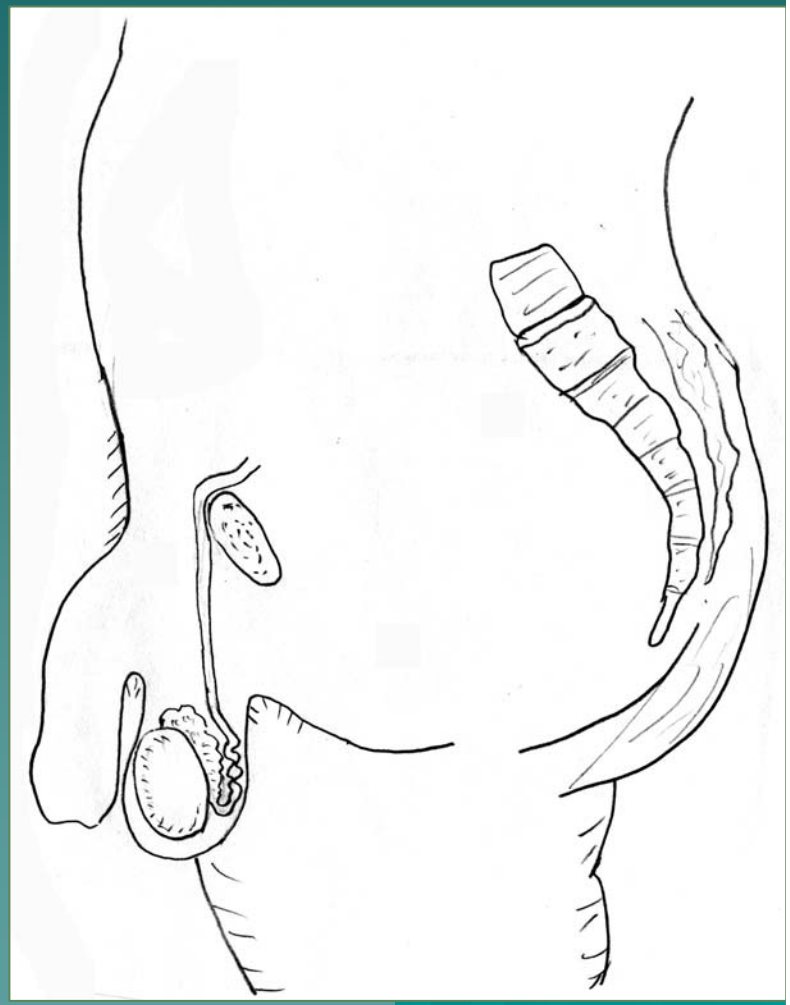


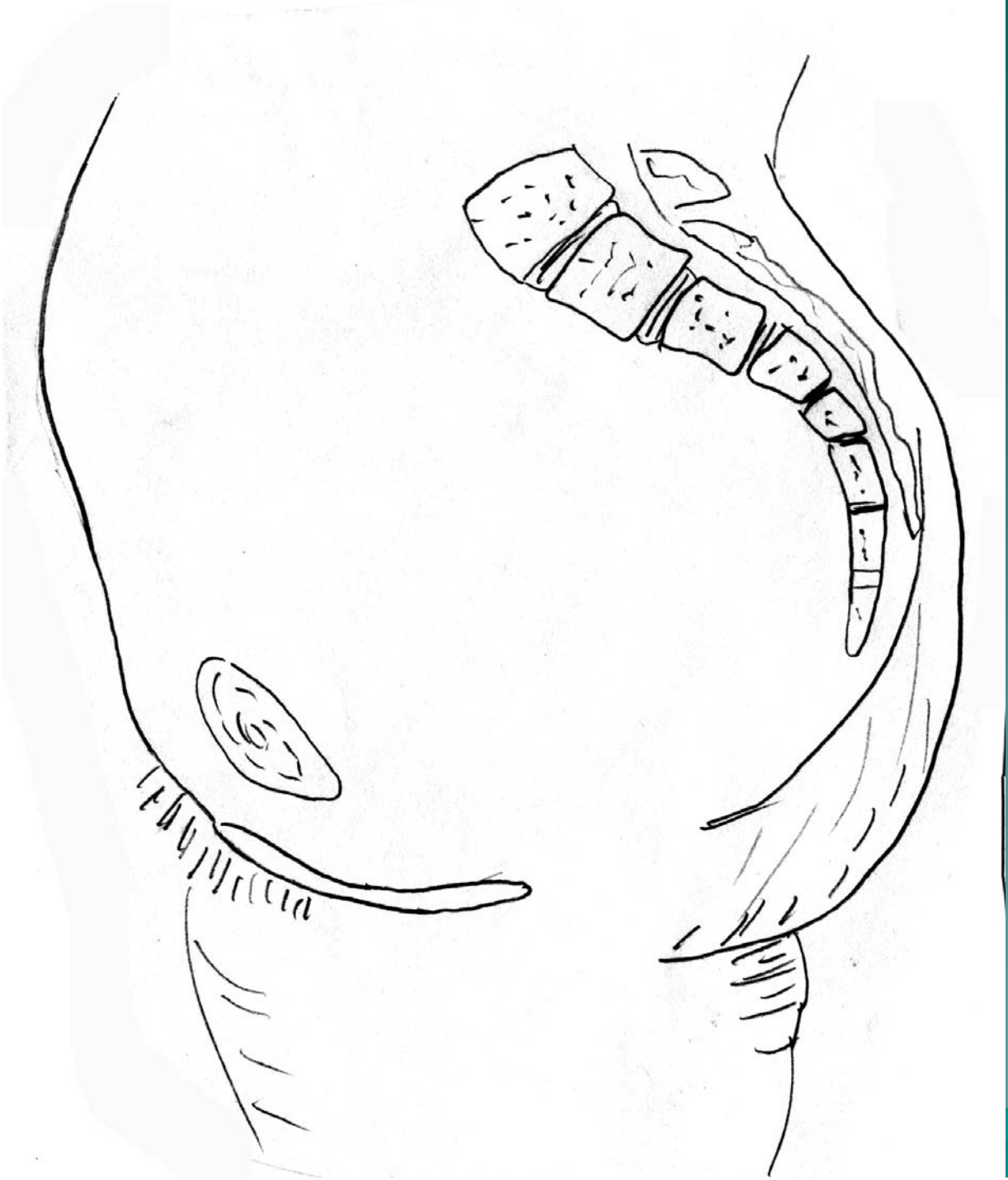
REVIEW OF PELVIS I

- Pelvic brim, inlet
- Pelvic outlet
- True pelvis--viscera
- Tilt forward

Mid-sagital views--how the pelvic viscera work



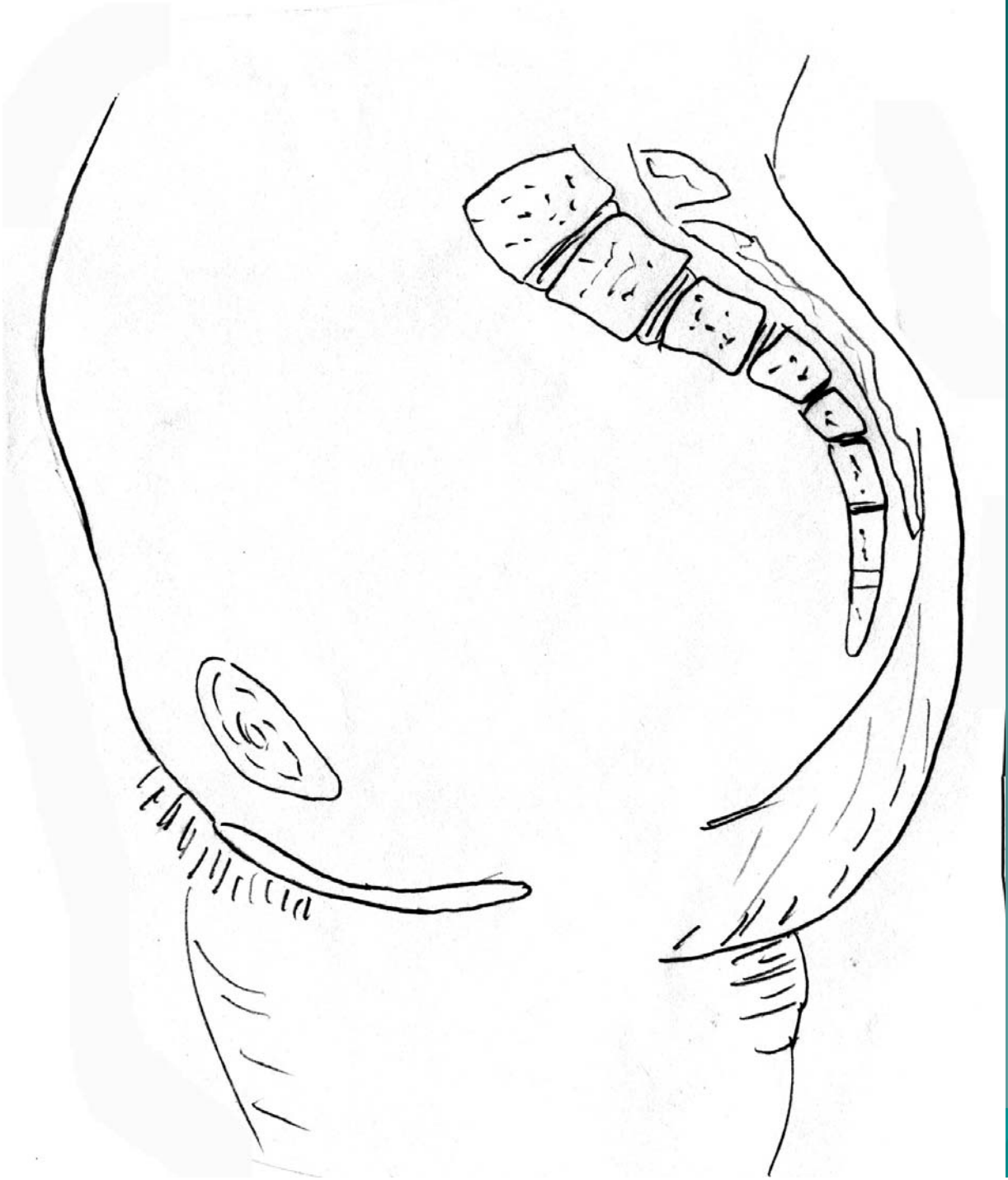




De

STRUCTURES

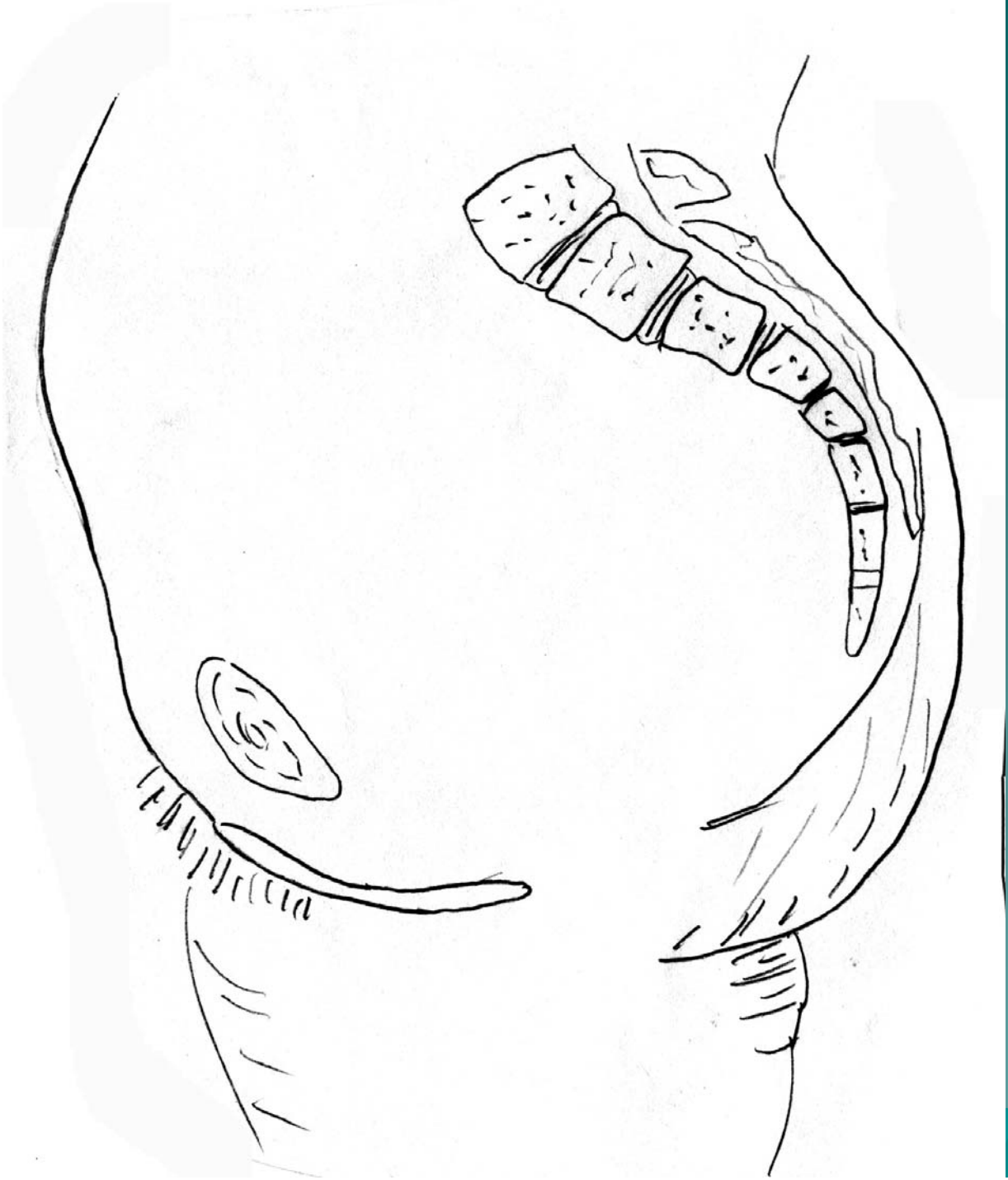
- Rectum
- Internal anal sphincter
- External anal sphincter



De

FUNCTON

- Internal sphincter smooth muscle-- tonic tension relaxes
- External sphincter skeletal muscle-- conscious relaxation
- Lower abdominal wall contracts pressurizing celom forcing feces out from rectum, sigmoid colon, descending



U

STRUCTURES

- Bladder
- Urethra

(from kidney lecture)

- Kidneys
- Ureters

FUNCTION

- Stretch receptors in bladder signal desire to urinate
- Smooth muscle of bladder wall contracts and internal sphincter of urethra relaxes
- Abdominal muscles contract to pressurize celom and force urine out

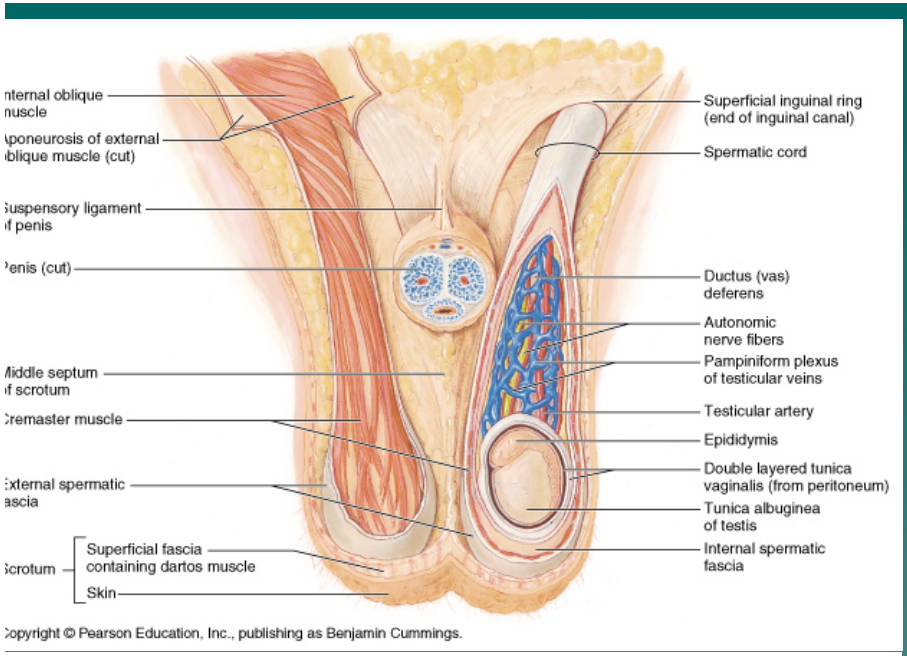
Ejaculation

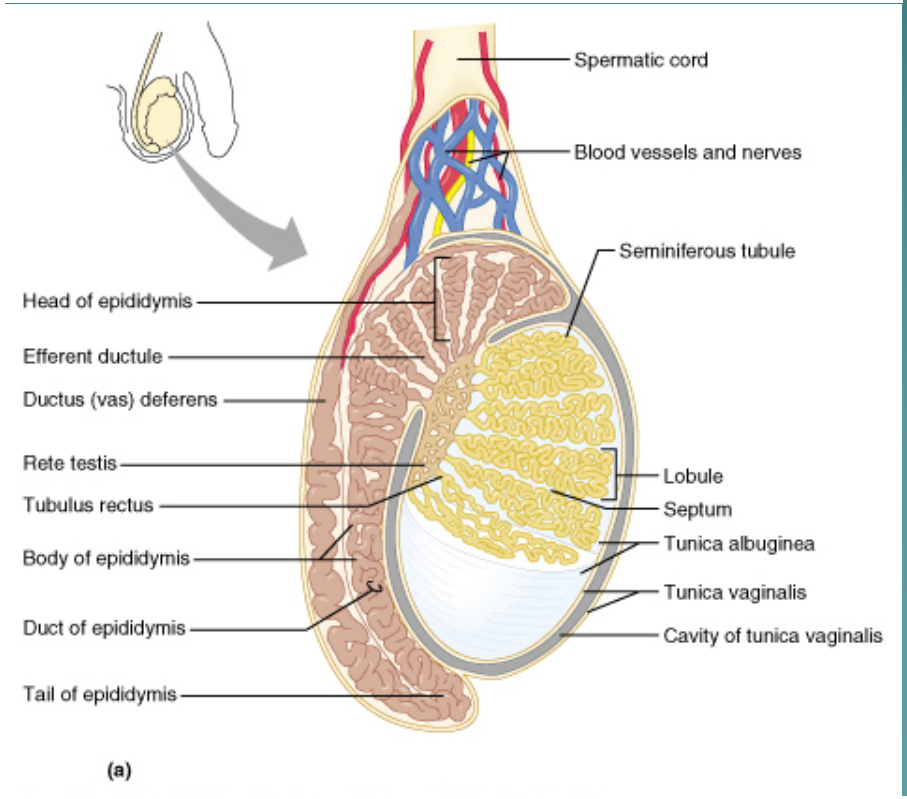
STRUCTURES

- Testes
- Vas (ductus) deferens
- Seminal glands (vesicles)
- Prostate
- Urethra
- Corpus spongiosum
- Bulbospongiosum m.

FUNCTION

- Sperm mature and collect in epididymis
- Move through vas deferens by peristalsis of smooth muscle of wall of vas
- Seminal vesicles, prostrate contribute to semen
- Internal urethral sphinchter (at bladder wall) prevents sperm backflow into bladder
- Contractions of urethra move semen to penis
- Bulbospongiosus m. (around urethra in penis) contracts to expel semen



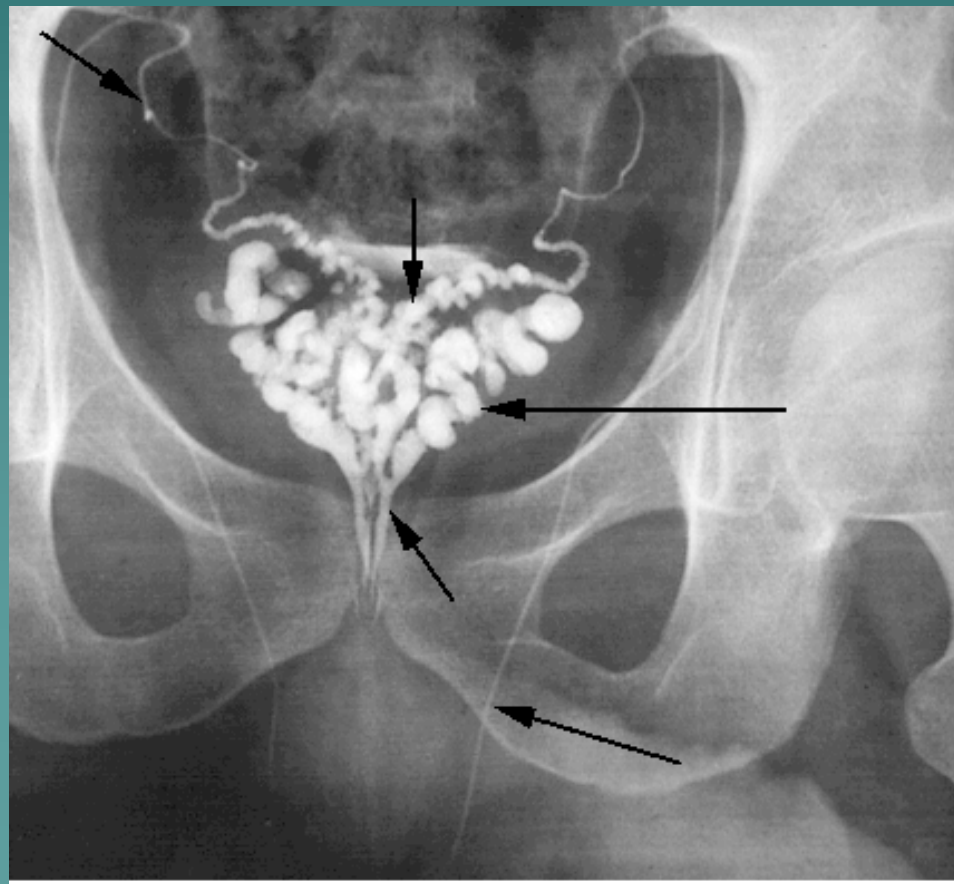


- Epididymis
  - Contains efferent ductules: tube from rete testis to duct of epididymis
  - gain ability to swim here
  - smooth muscle layer = ejaculation
  - epithelial layer lined w/stereocilia
    - resorb excess testicular fluid
    - transfer nutrients to sperm in lumen
- Vas Deferens
  - tube from duct of epididymis to ejaculatory duct

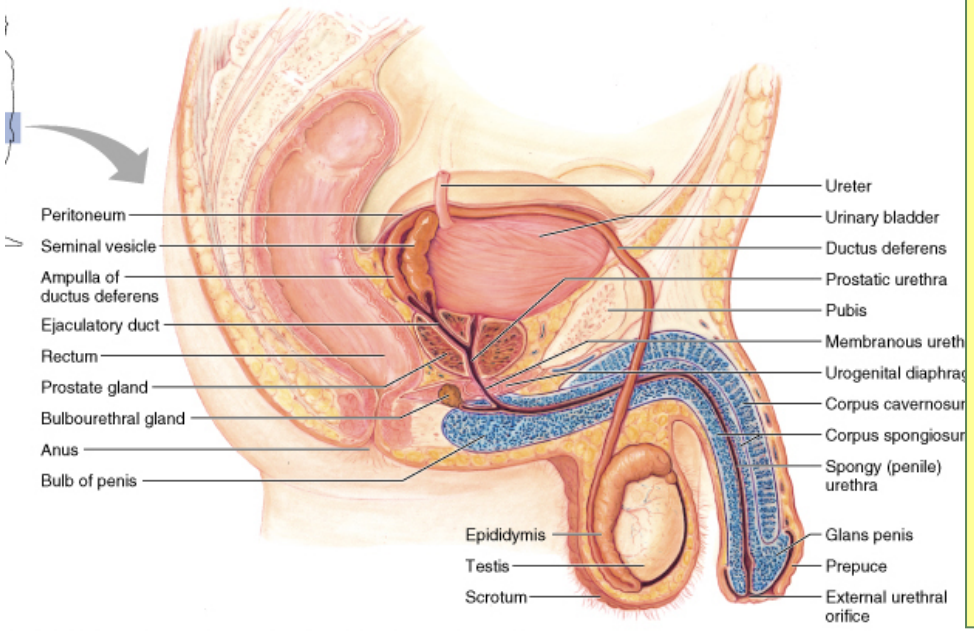
Route of sperm is convoluted--testicles to spermatic cord (vas deferens) through inguinal canal around to join urethra at inferior bladder

SPERMATIC CORD

- Collective name for structures associated with the scrotum
- Passes through inguinal canal
- Includes
  - Vas Deferens
  - Testicular Arteries + Veins
  - Cremaster Muscle + fibers
  - Nerves



Accesory glands for semen



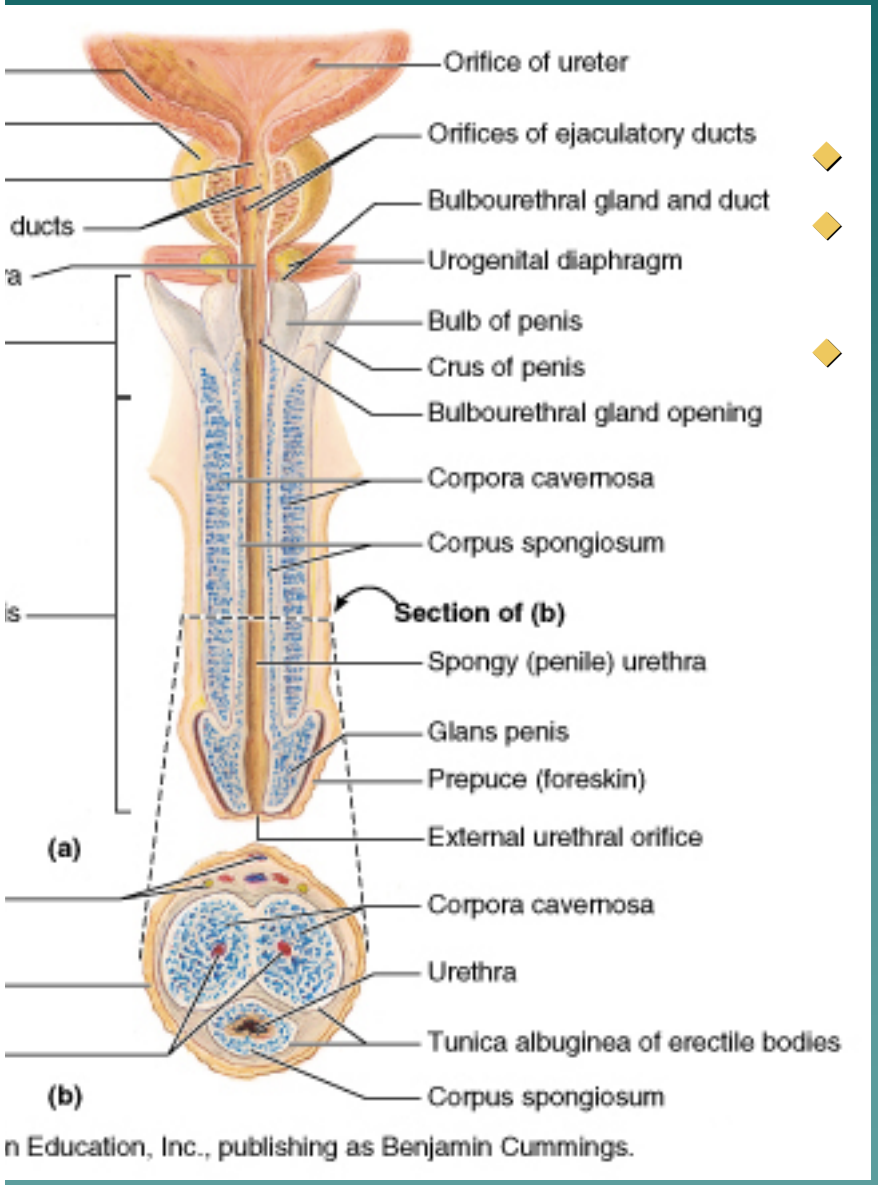
SEMINAL VESICLES (PAIRED)

- posterior surface of bladder
- contracts during ejaculation
- empties into vas deferens
- Functions
  - nourish sperm
  - stimulate uterine contractions
  - suppress immune response
  - enhance sperm motility
  - clot ejaculated sperm once in vagina, then liquefy to allow swim

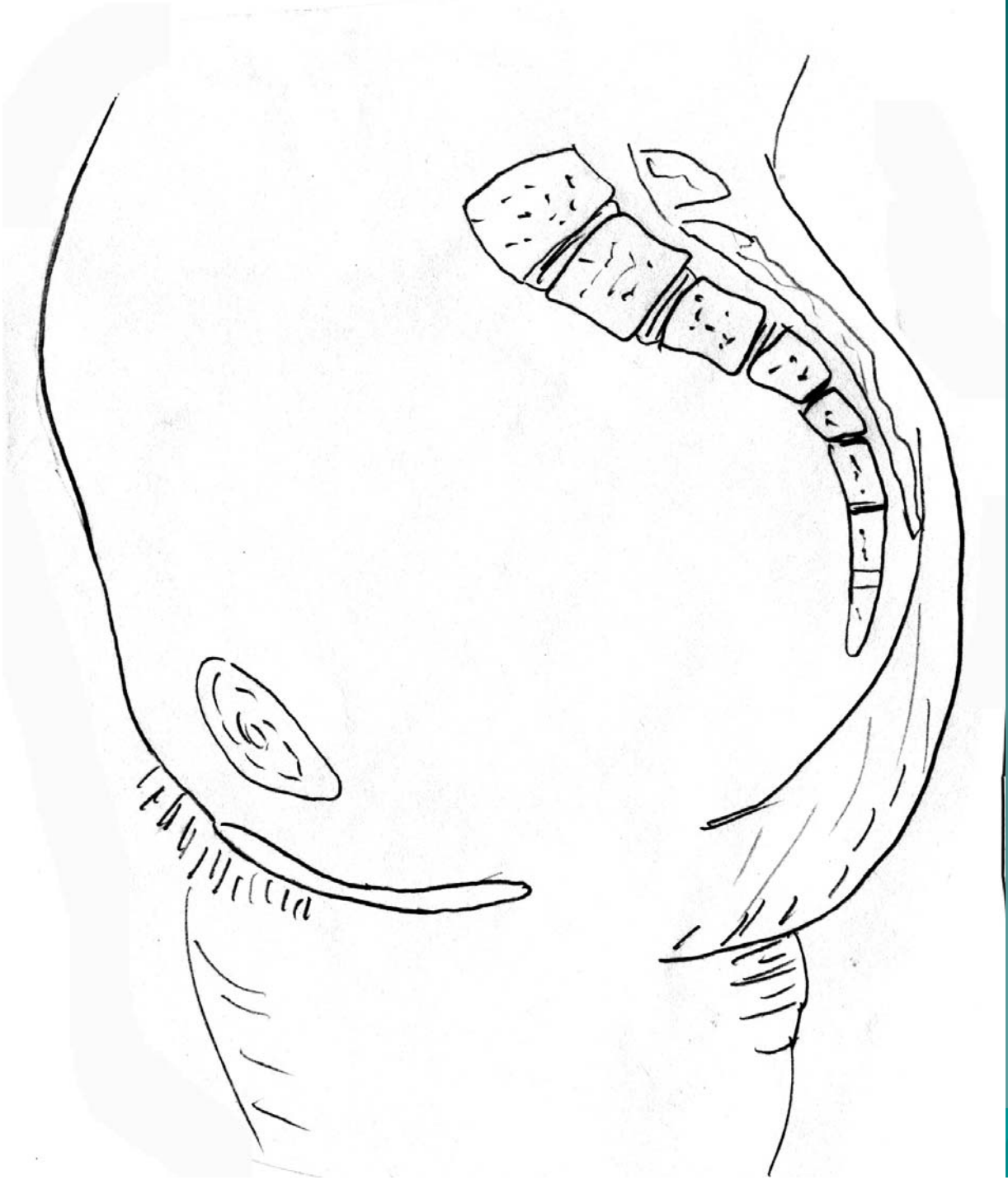
BULBOURETHRAL (PAIRED)

- inferior to prostate
- within urogenital diaphrag
- empties into spongy ureth
- Function: produce mucous
  - neutralize urine in urethra
  - lubricate semen for passage

- PROSTATE
  - inferior to bladder, anterior to rectum
  - encircles first part of urethra
  - contracts during ejaculation
  - Functions: clot, liquefy, motility



- root = attached end
  - crura-anchored to pubic arch, covered b ischiocavernosus muscle
  - bulb-secured to urogenital diaphragm
- glans penis = enlarged tip
- prepuce = loose cuff around glans (circumcision)
- Erectile bodies
  - 3 long strips of erectile tissue around th spongy urethra
  - thick tube covered by dense CT and fille with smooth muscle, CT + vascular spaces
  - Corpus spongiosum
    - distally = glans penis
    - proximally =bulb of penis
    - midventral erectile body
  - Corpora cavernosa
    - proximally = root/crura of penis, covered by ischiocavernosus m.
    - paired, dorsal erectile bodies
    - make up most of mass



Intercourse/conc

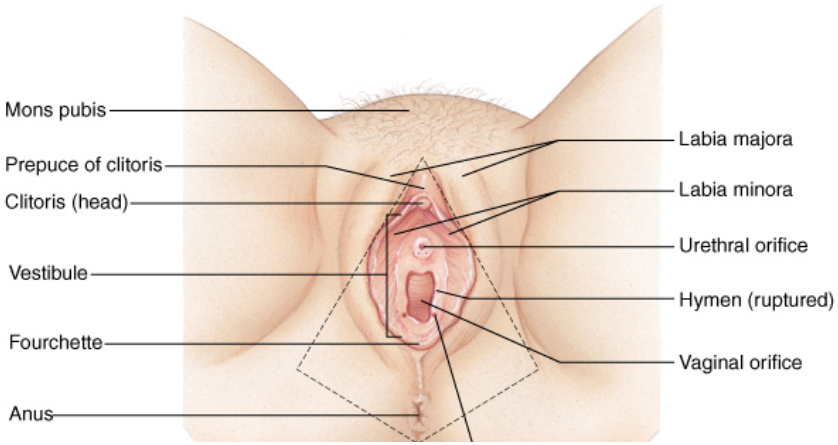
STRUCTURES

- Vagina
- Uterus
- Cervix
- Fallopian tube
- Fimbriae
- Ovary
- Broad ligament
- Mesenteries of pelvic cavity

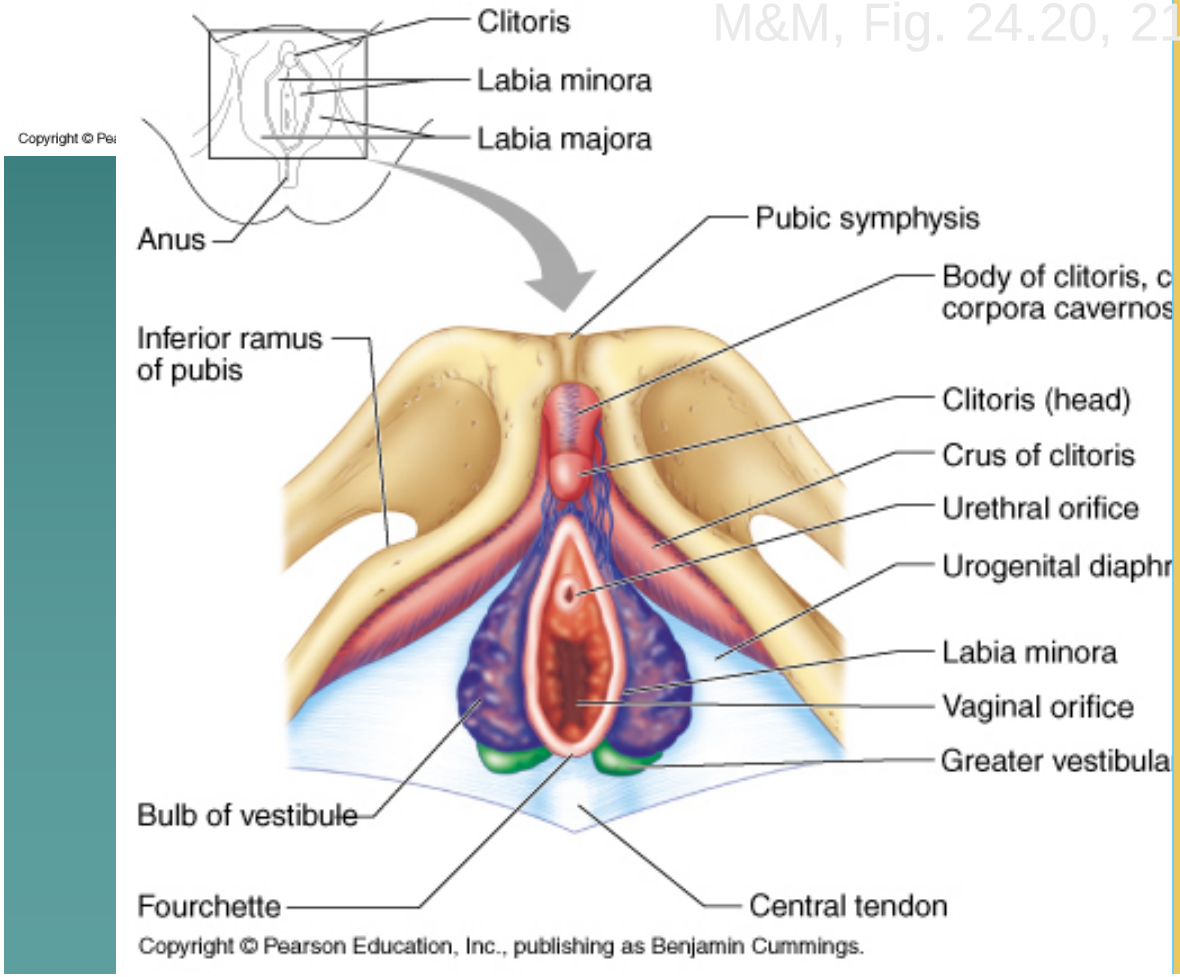
FUNCTION

- Vagina is muscular tube--penis enters during intercourse
- Monthly, unfertilized egg bursts from ovary and is picked up by fimbrae, moves down fallopian tube
- Sperm and egg meet--fertilization--in Fallopian tube
- (more next lecture on

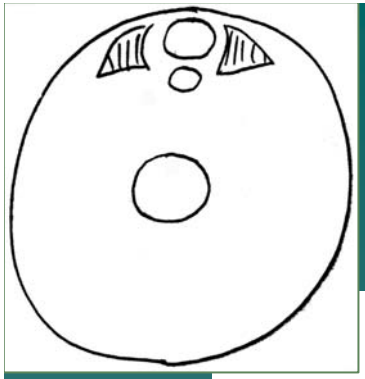
External Genitalia- Female



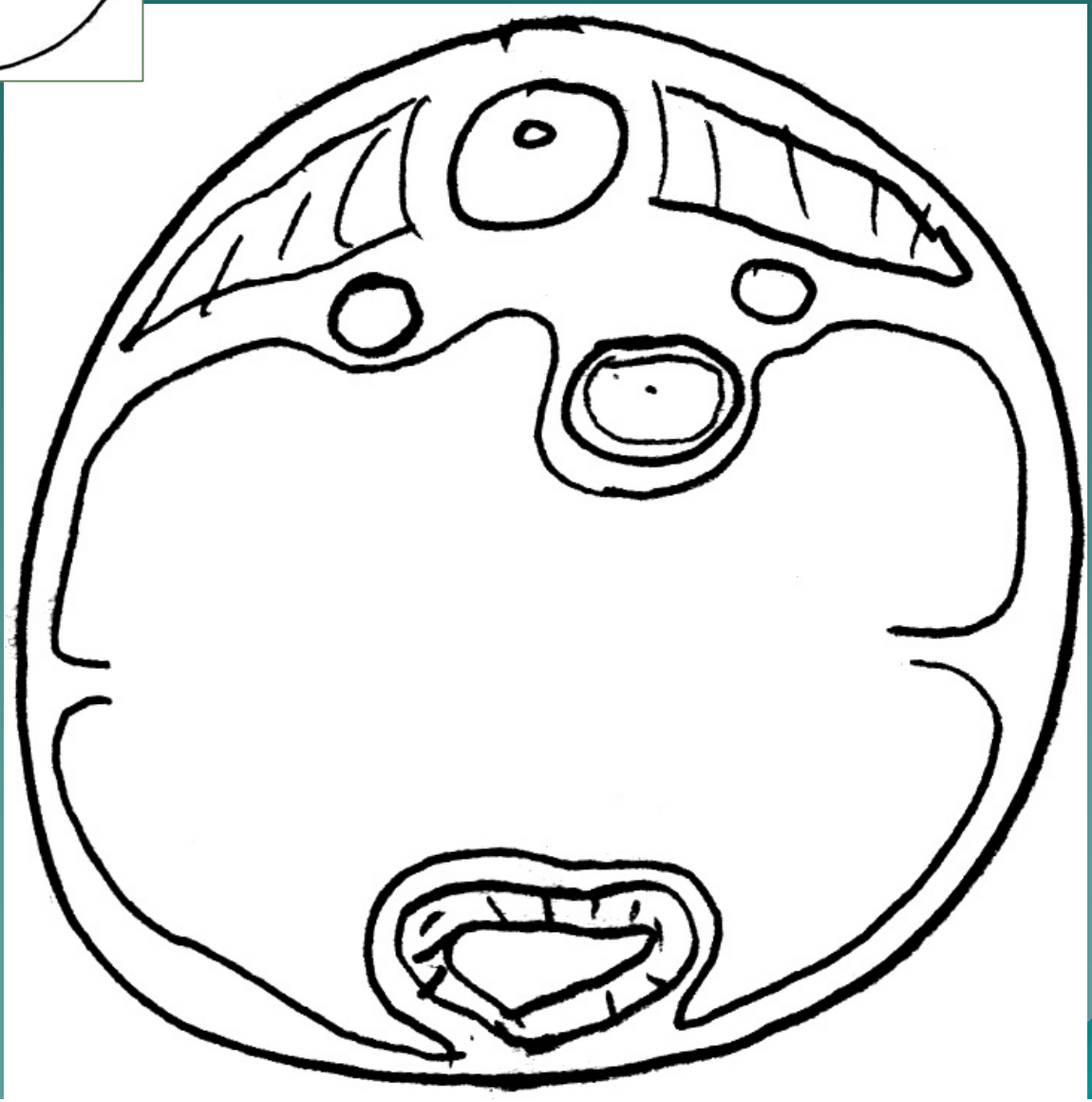
M&M, Fig. 24.20, 21



- mons pubis:fatty pad over pubic symphysis
- labia major: fatty skin folds
- labia minor: smaller, hairless folds inside labia major
- vestibule: created by labia minor; opening for urethra and vagina
- greater vestibular glands: either side of vaginal opening; secrete mucus into vaginal orifice
- clitoris: superior to vestibule
  - crura, prepuce, corpus cavernosum
  - NO corpus spongiosum
- Central tendon = perineal body



Ovulation--the only cell that gets into the celom



- Uterus, ovaries, fallopian tube, fimbriae
- Broad ligament is mesentery that connects to lateral body wall
- How does egg get from ovary into opening of fallopian tube/oviduct
- Pops out into

- Uterine Tubes = Oviducts = Fallopian Tubes
  - from near ovaries to uterus
  - Run lateral(ovary) to medial (uterus)
  - infundibulum
    - expanded, proximal portion
    - fimbrae on edges
- Movement of Ova in Oviduct
  - receives oocyte after ovulation
  - peristaltic waves
  - cilia lining tube
  - contains cells to nourish ova
- Site of fertilization
- Ectopic pregnancy: implantation of zygote outside of uterus

Ligaments

–Ovarian ligament

•connects ovaries to uterine wall (medial)

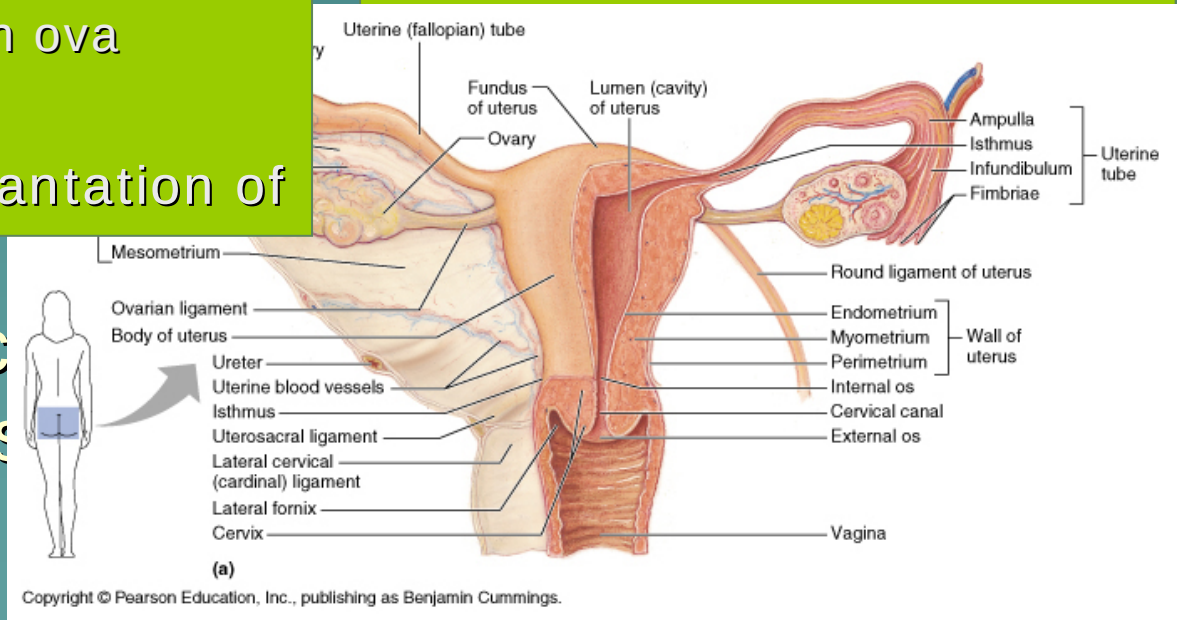
–Suspensory ligament

•connects ovaries pelvic wall (lateral)

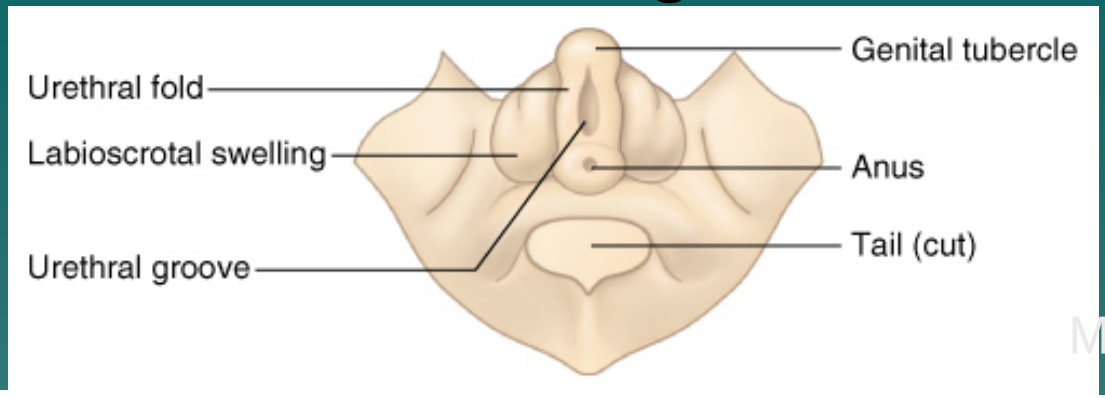
–Broad ligament

•supports uterus, oviducts

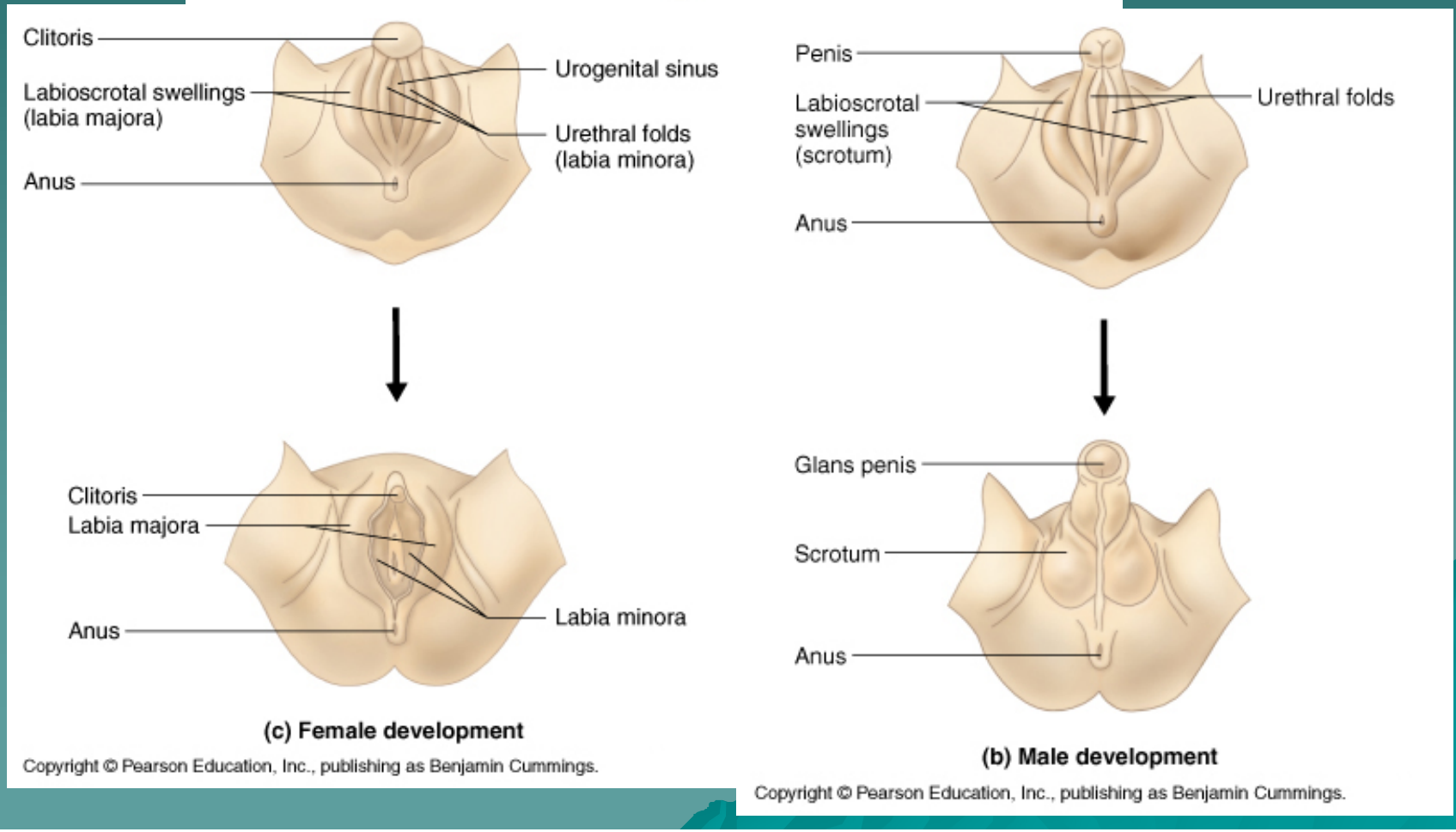
Ovaries, oviduc uterus--details



Development of external genitalia in female/male

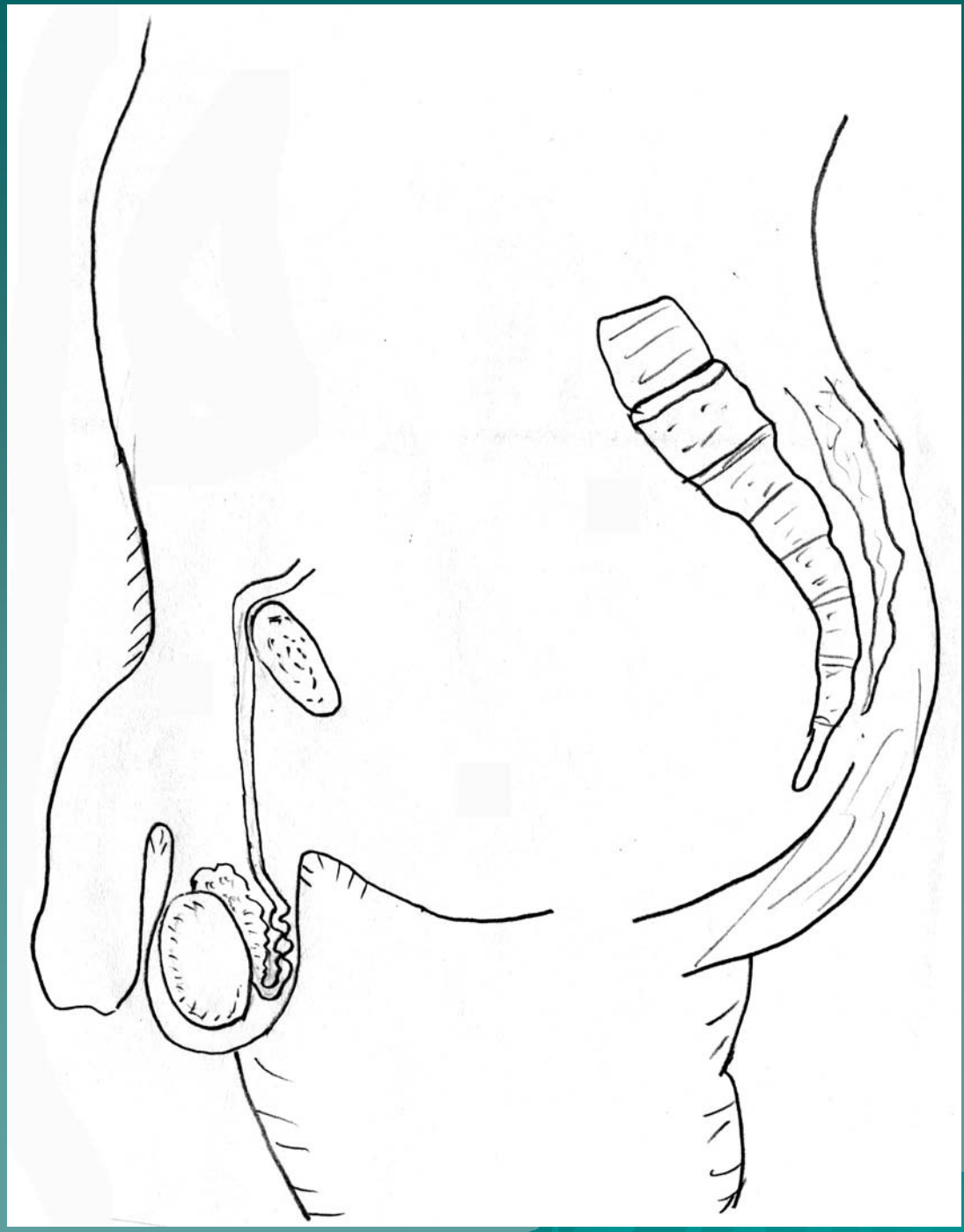


M&M, Fig. 24.29



Development of Reproductive Organs

- Gonadal ridge: forms in embryo at 5 weeks and gives rise to gonads (intermediate mesoderm with kidneys)
- Wolffian ducts: form male duct (vas deferens)
- Mullerian ducts: form female duct (uterine tube)
  - Both ducts are present in embryo-only one develops!
- External genitalia develops from same structures
  - Labioscrotal swelling: Scrotum = Labia major



Coming

Reproduction
and
Early Fetal
Development