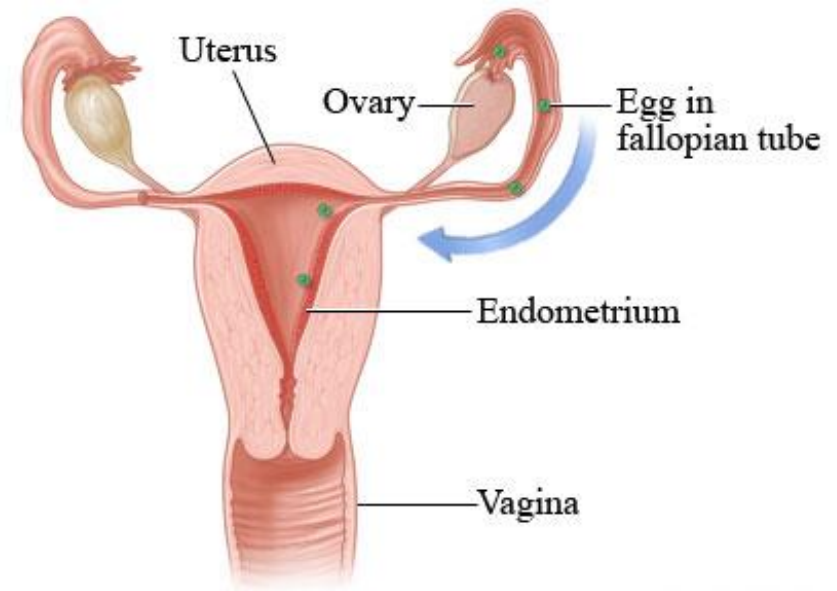


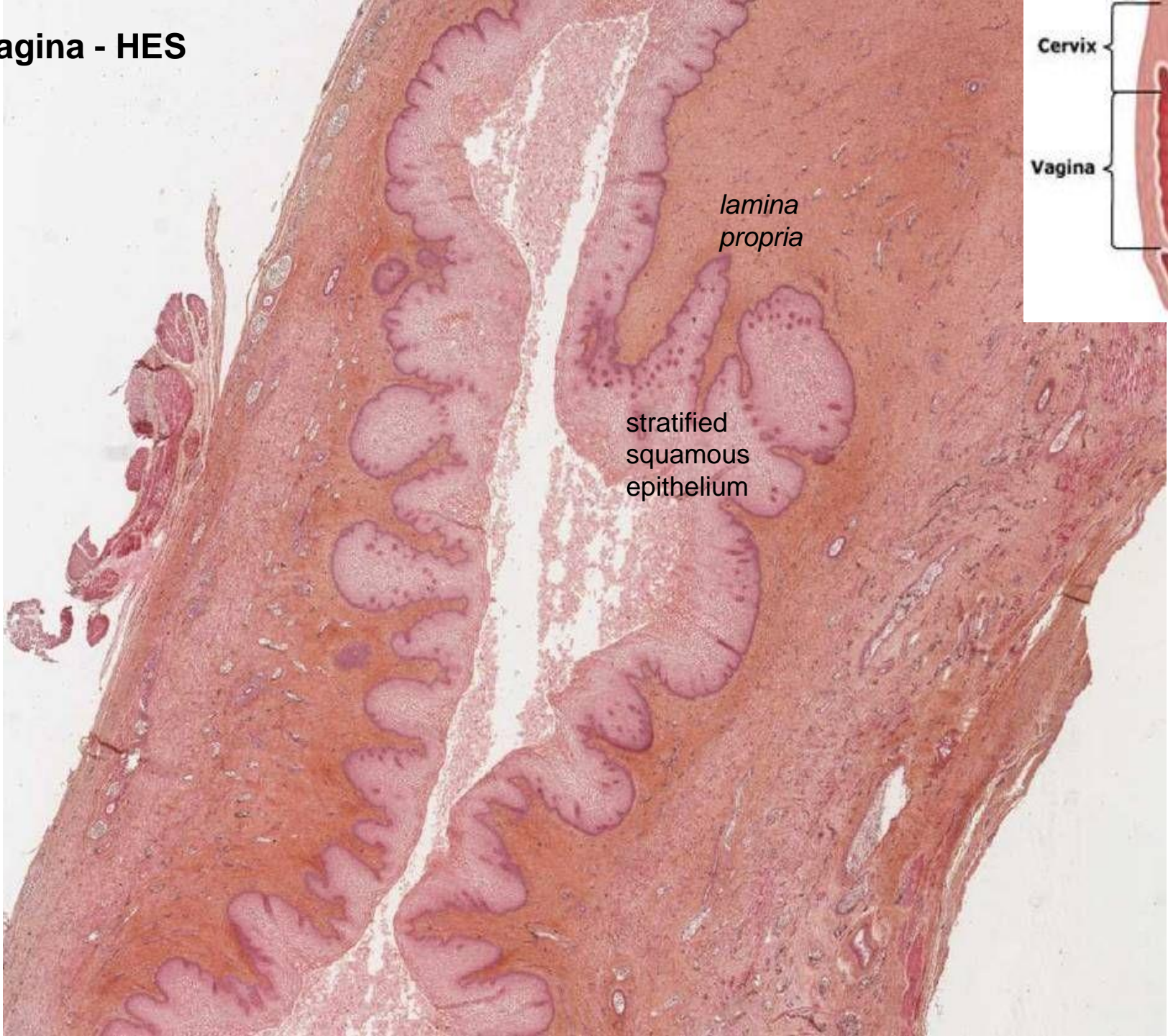


FEMALE REPRODUCTIVE SYSTEM II

- **vagina** (*vagina, kolpos*)
- external genitalia (*vulva*)
 - *labia maiora et labia minora pudendi*
 - *clitoris*
 - *vestibulum vaginae*
 - vestibular glands
 - *hymen*
- accessory embryonic organs
 - *funiculus umbilicalis*
 - *placenta*

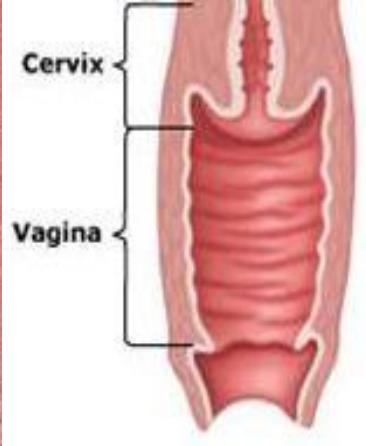


Vagina - HES

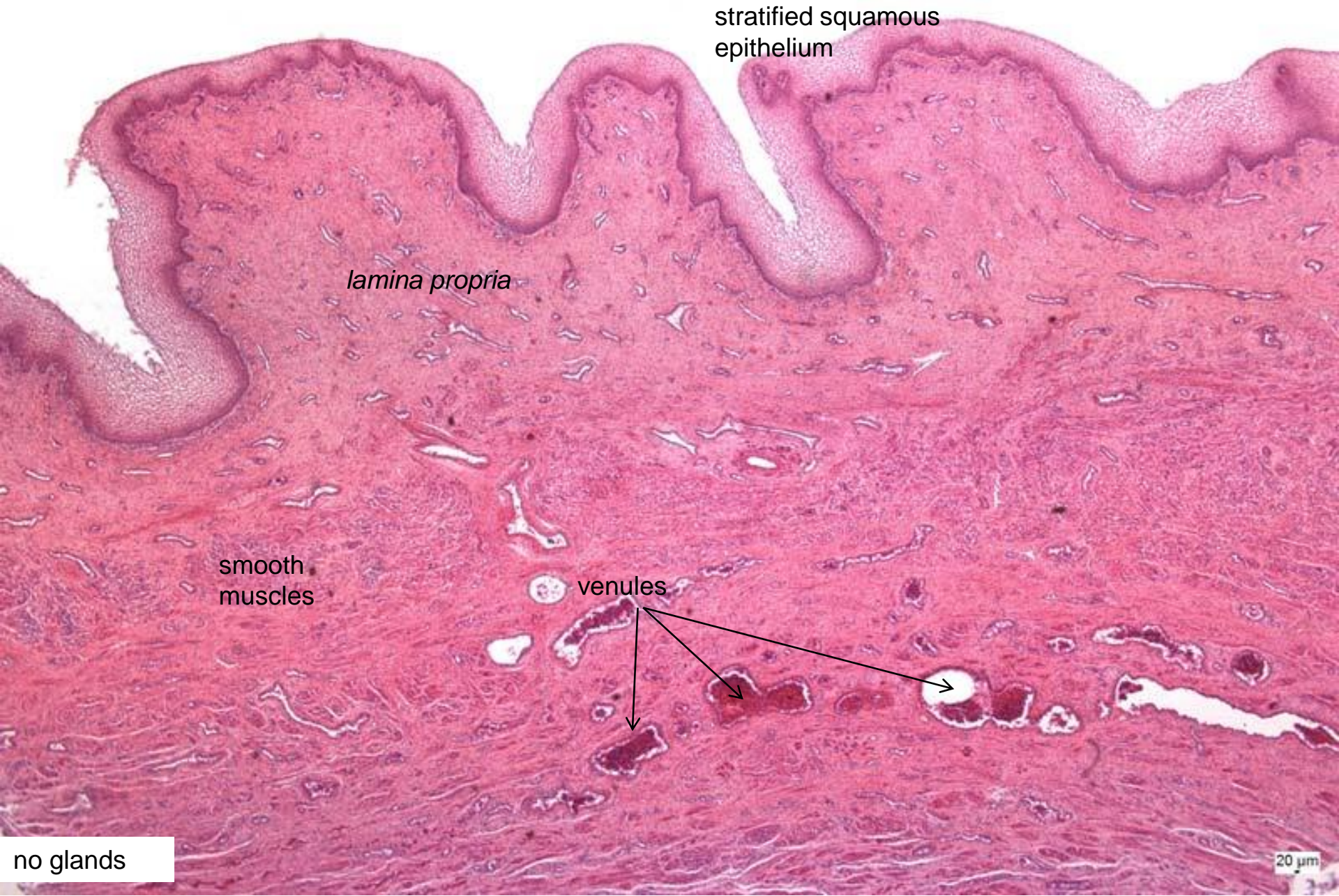


lamina propria

stratified squamous epithelium



Vagina



stratified squamous epithelium

lamina propria

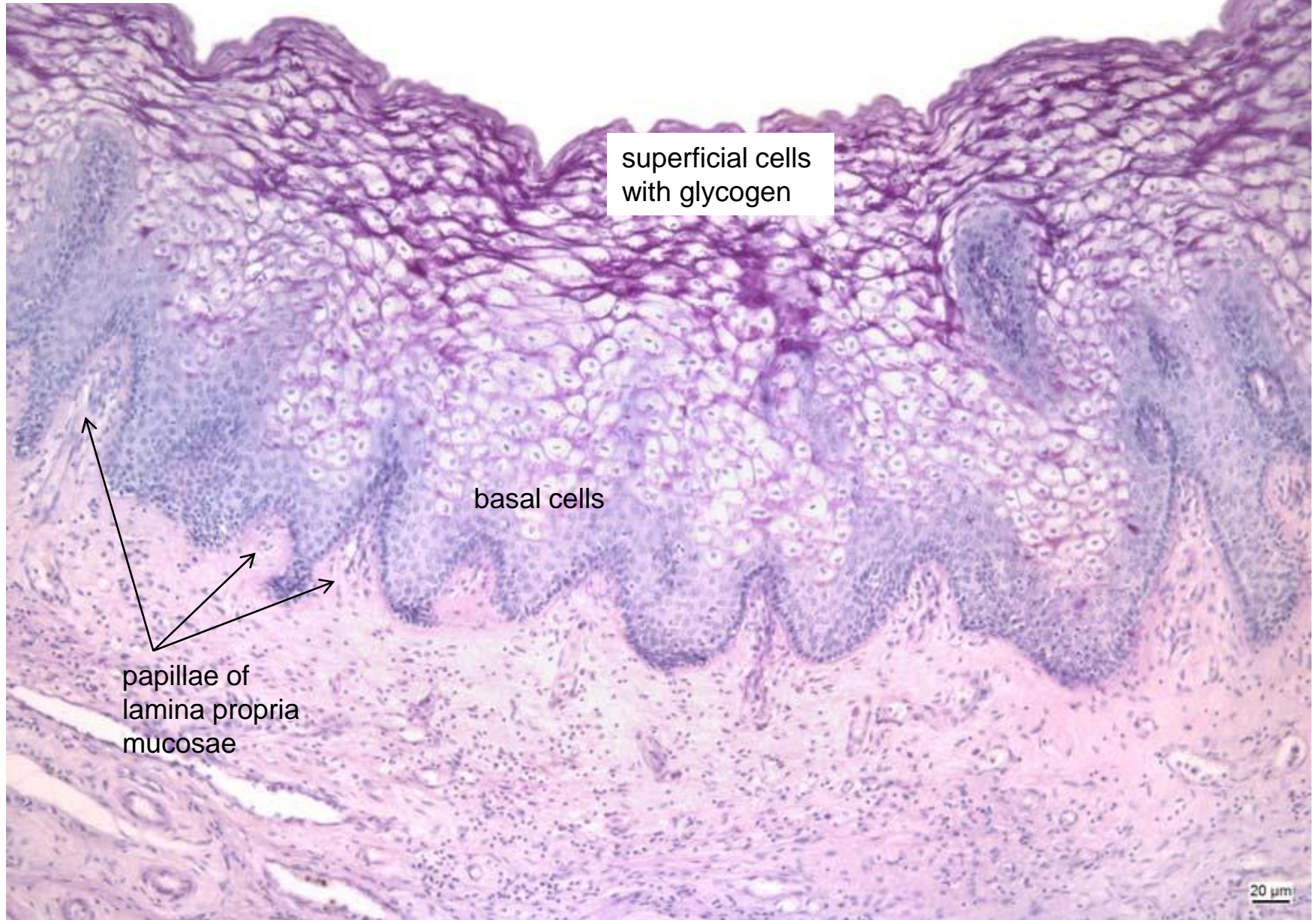
smooth muscles

venules



no glands

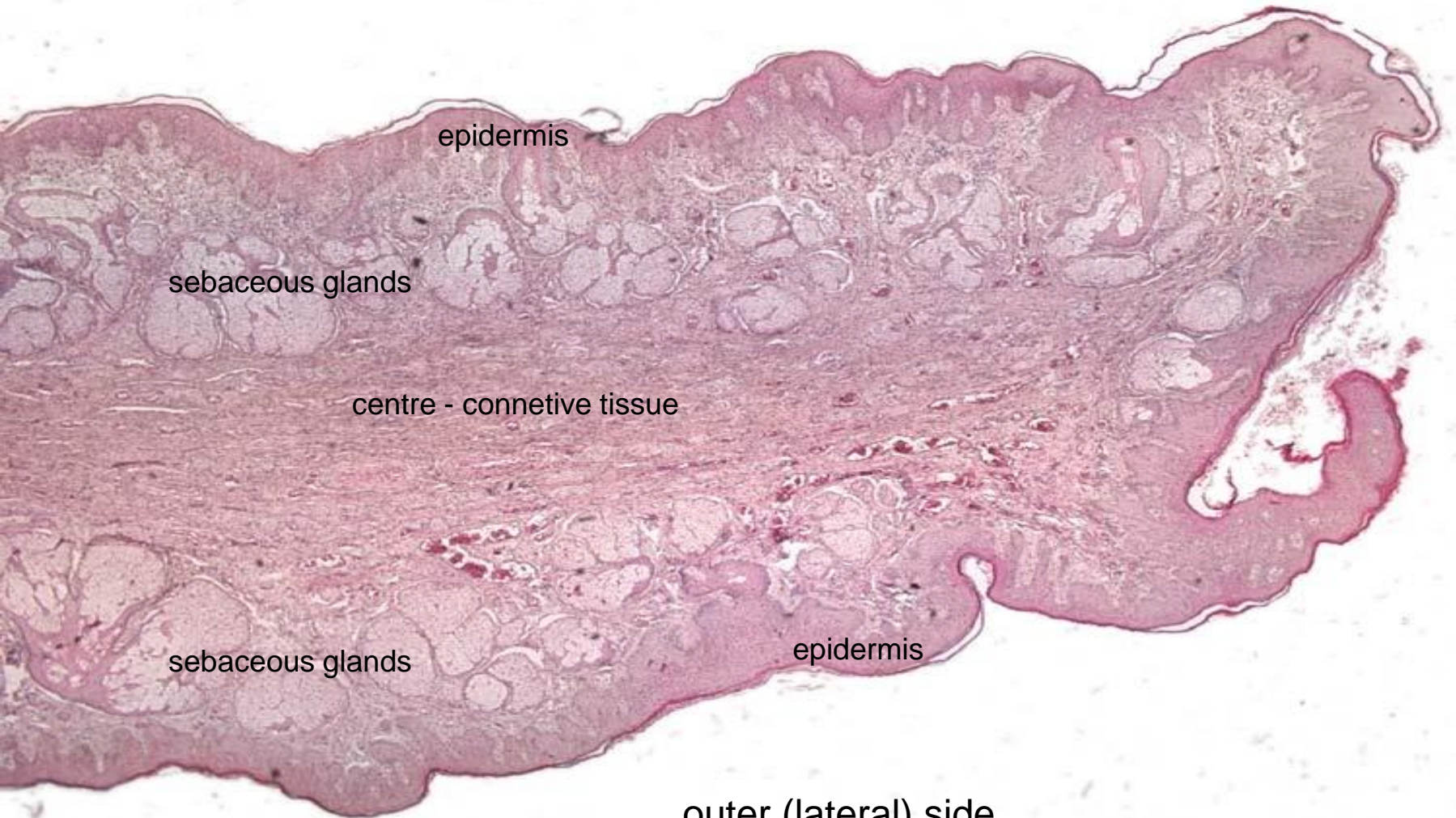
Vagina – Best's carmine



epithelial cells – **glycogen** (+ *Lactobacillus acidophilus*) → **lactic acid** /pH 3.8-4/

***Labium minus* (HE) – external genital organ**

inner (medial) side



epidermis

sebaceous glands

centre - connective tissue

sebaceous glands

epidermis

outer (lateral) side

Labium minus



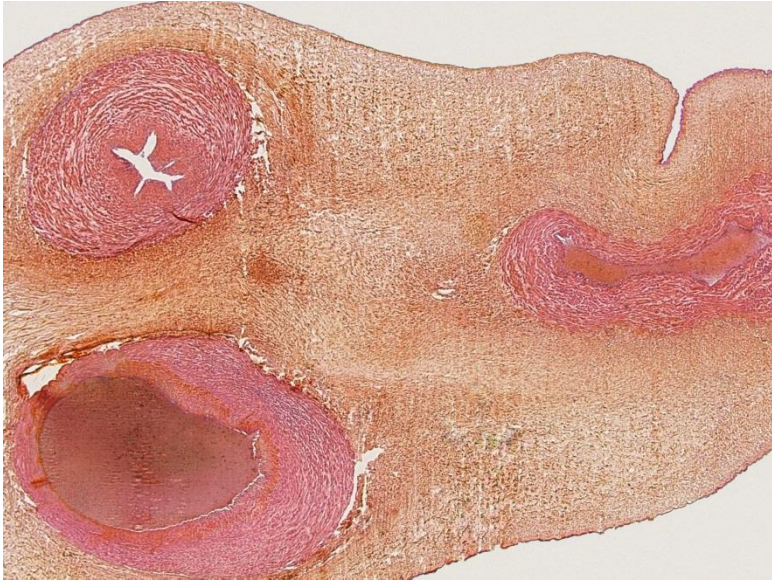
epidermis

duct opens directly into epidermis

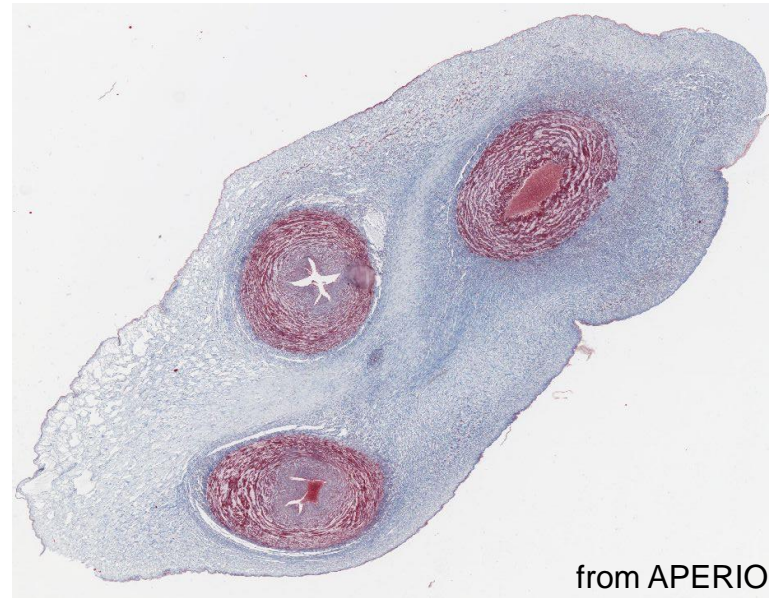
sebaceous glands

dermis

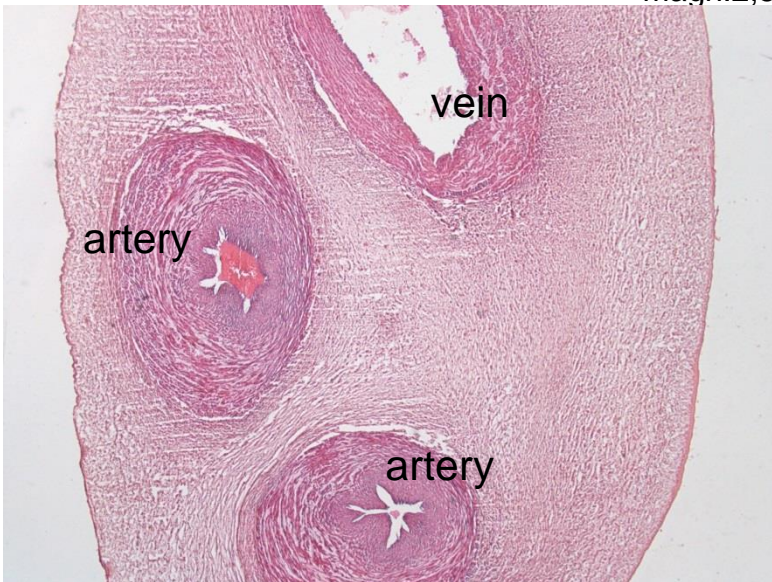
Funiculus umbilicalis (HE, HES, AZAN)



magn:2,5



from APERIO

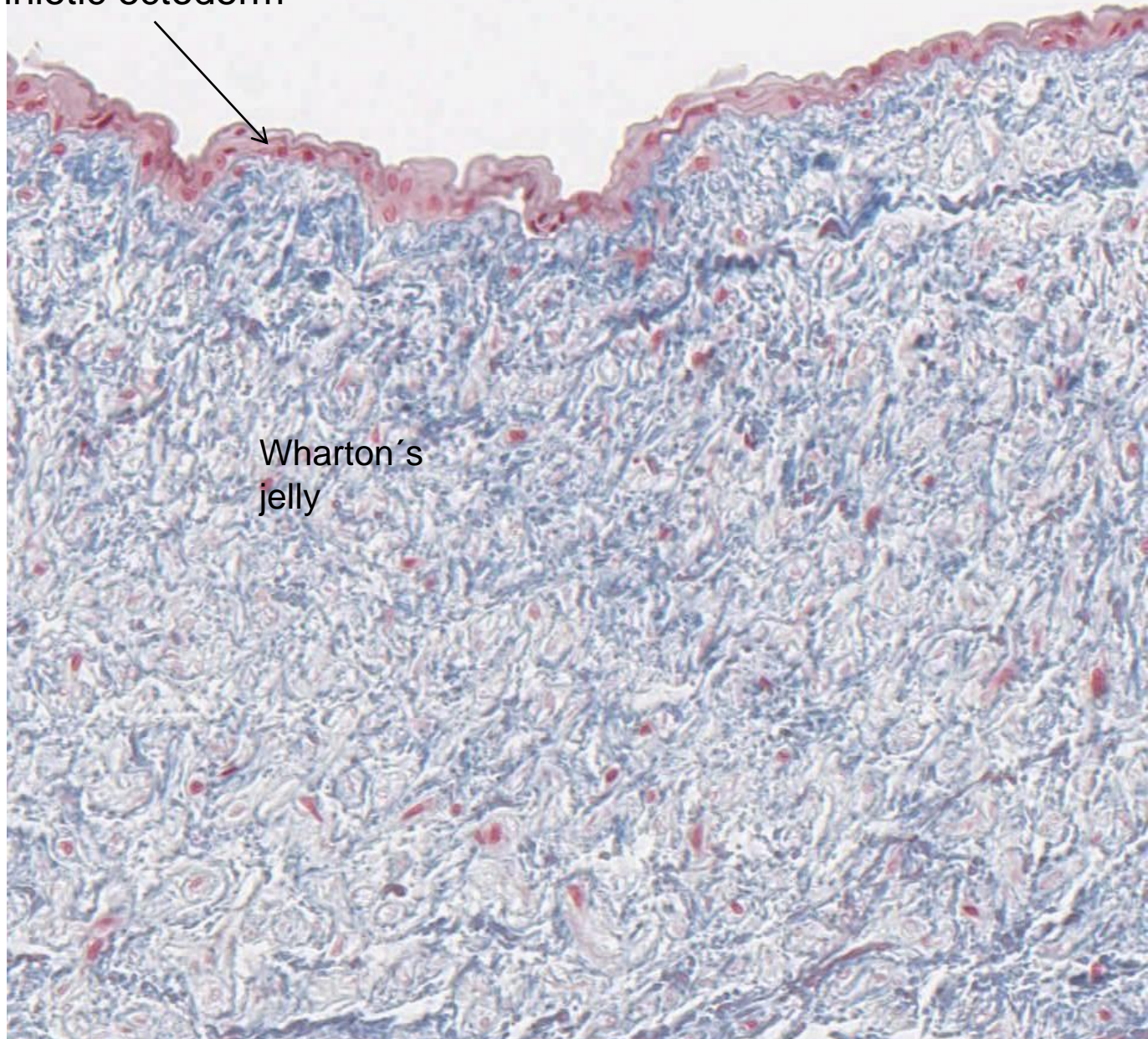


magn:2.5



40-50 cm

Funiculus umbilicalis
(AZAN) – amniotic ectoderm



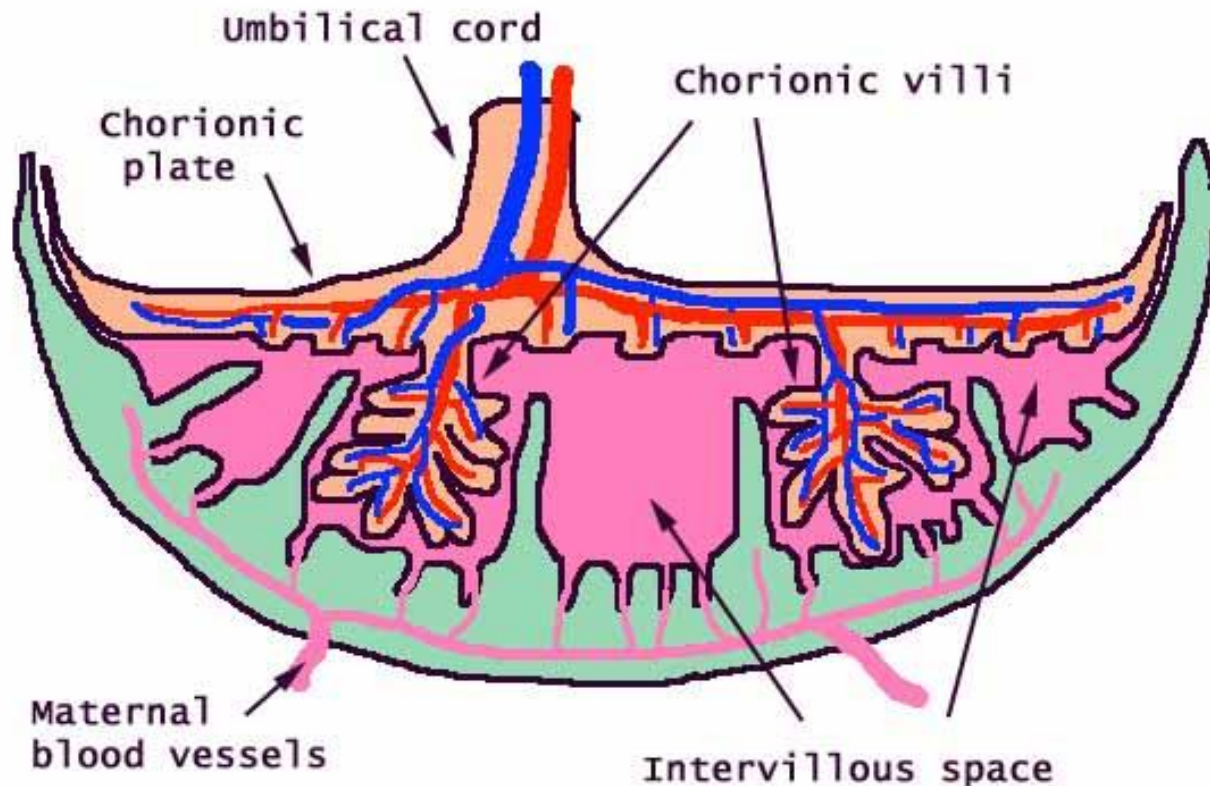
Wharton's
jelly

collagen fibers – blue, nuclei of fibroblasts - violet

Placenta

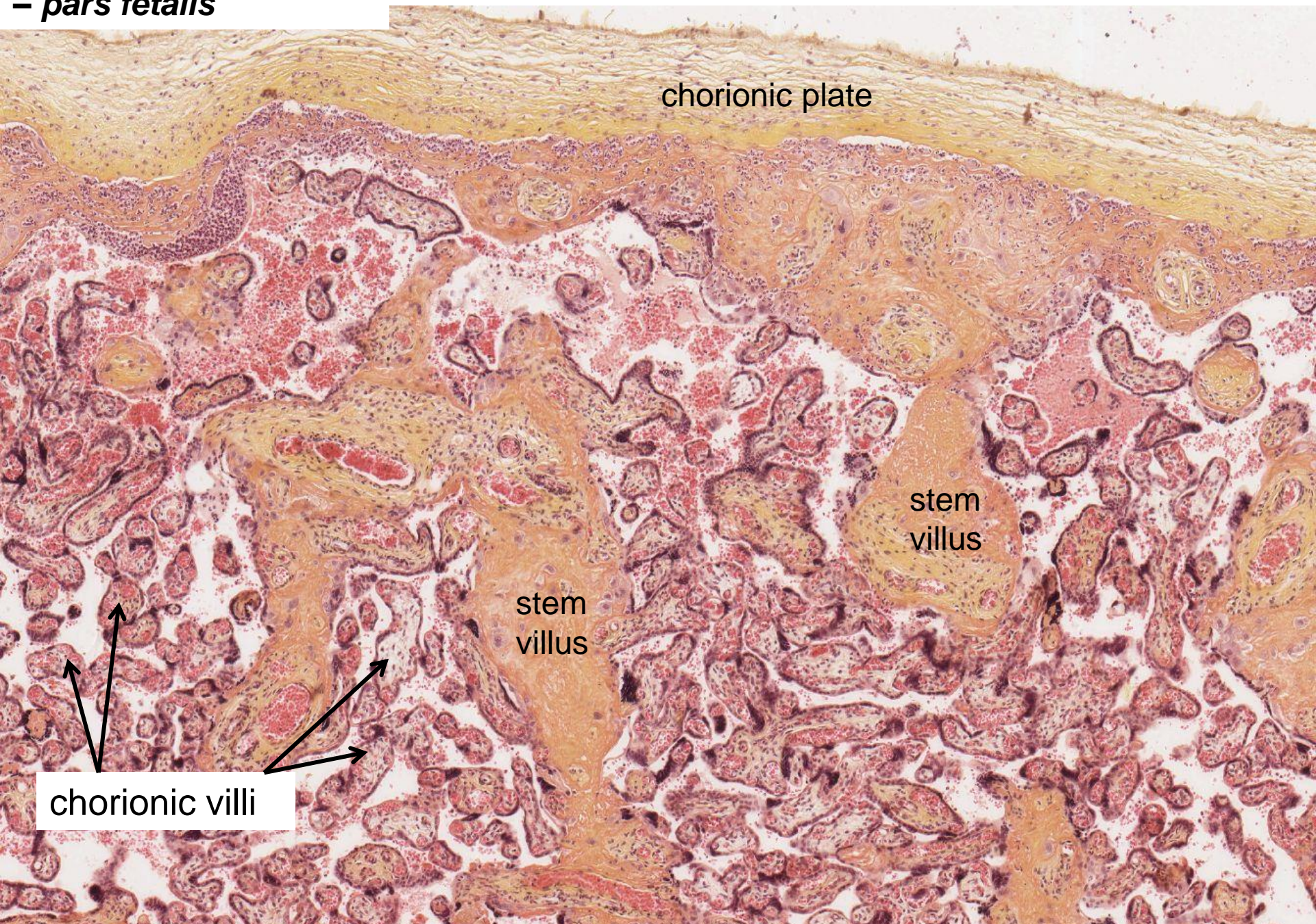
- *Pars materna*
 - **basal plate** with placental septa
- *Pars fetalis*
 - **chorionic plate** with chorionic **villi** /stem and free/

- **discoidalis**
- **olliformis**
- **hemochorialis**



s: 15-25 cm
t: 2.5-4 cm
w: 500-600 g
25-30% of
uterine cavity

Human placenta (HES)
- *pars fetalis*



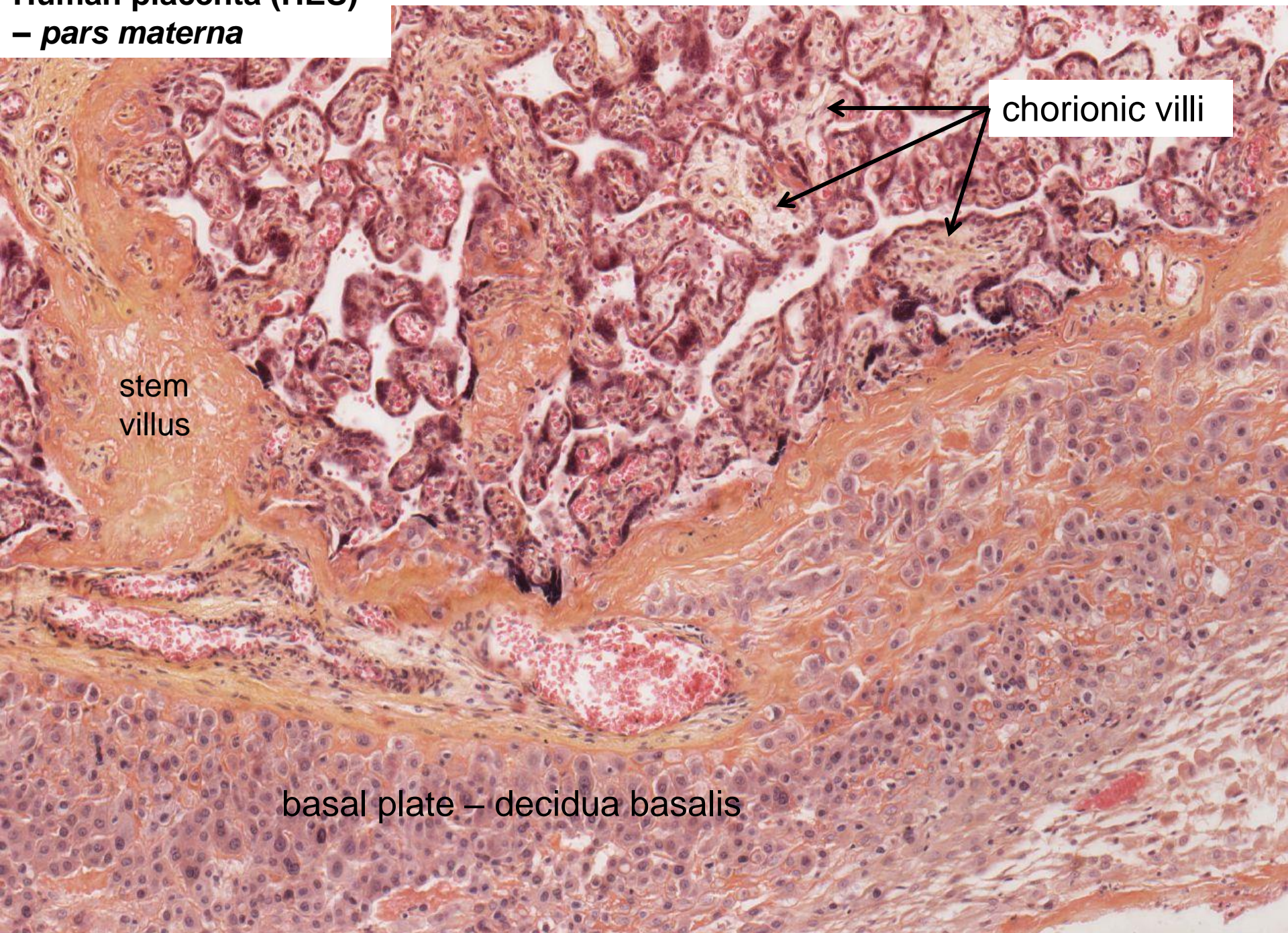
chorionic plate

stem
villus

stem
villus

chorionic villi

Human placenta (HES)
– *pars materna*

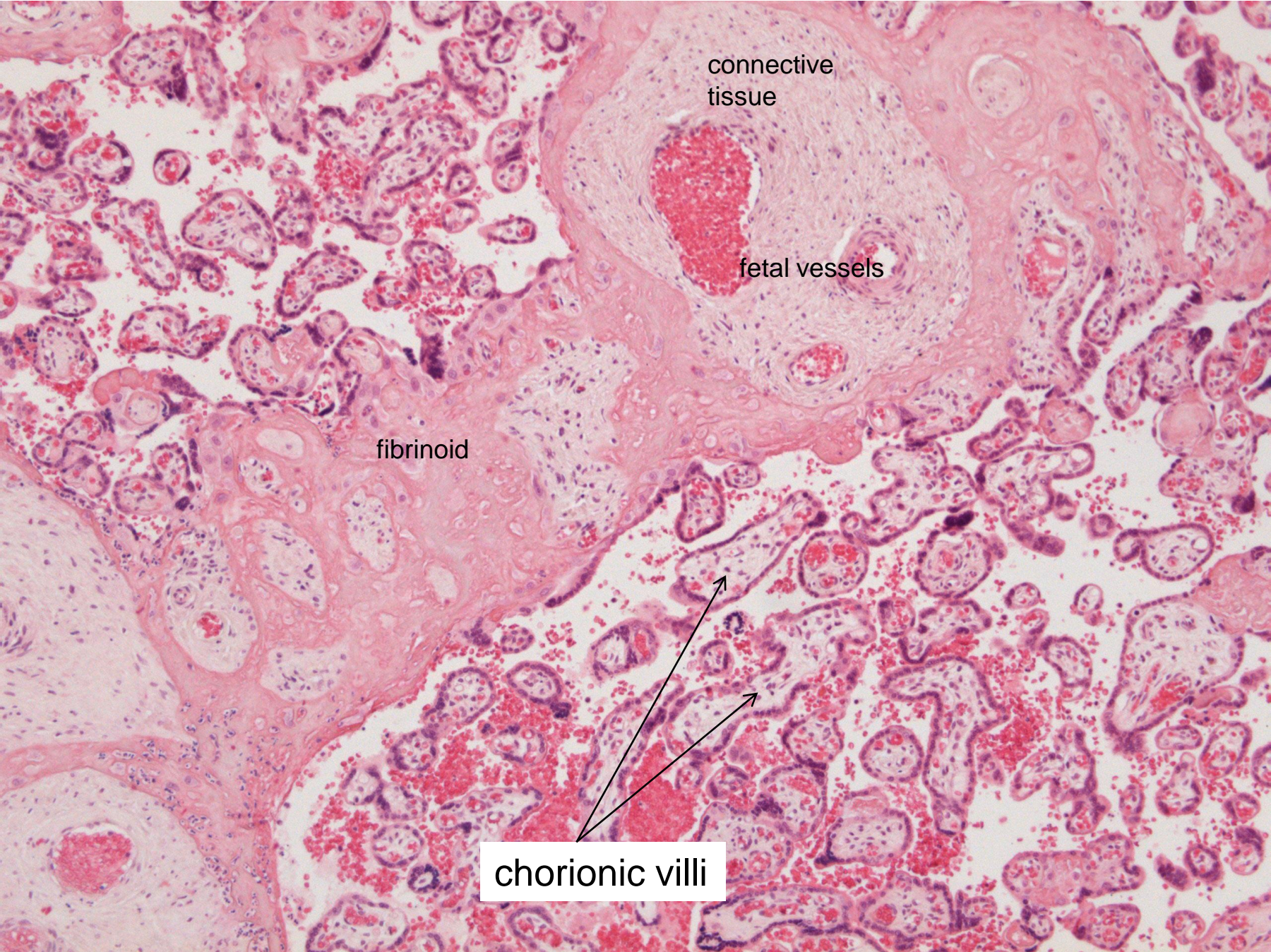


chorionic villi

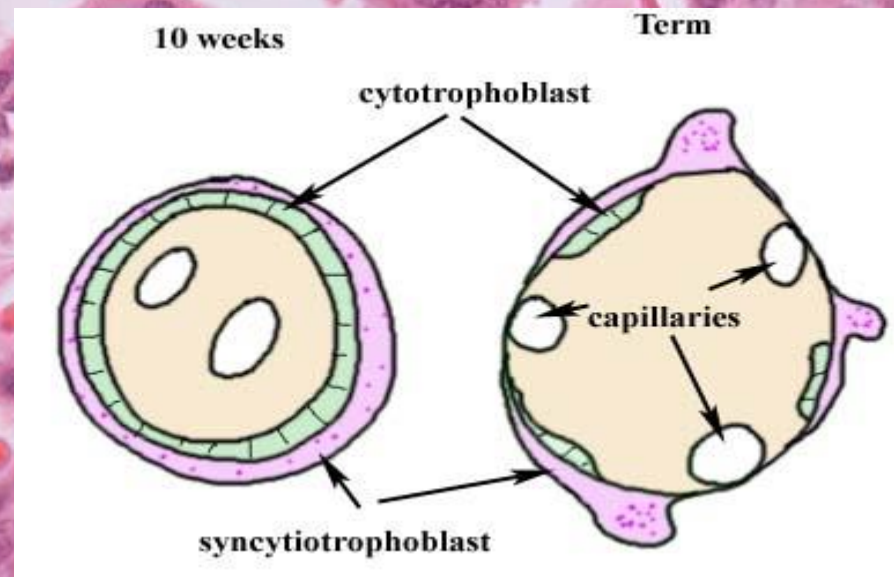
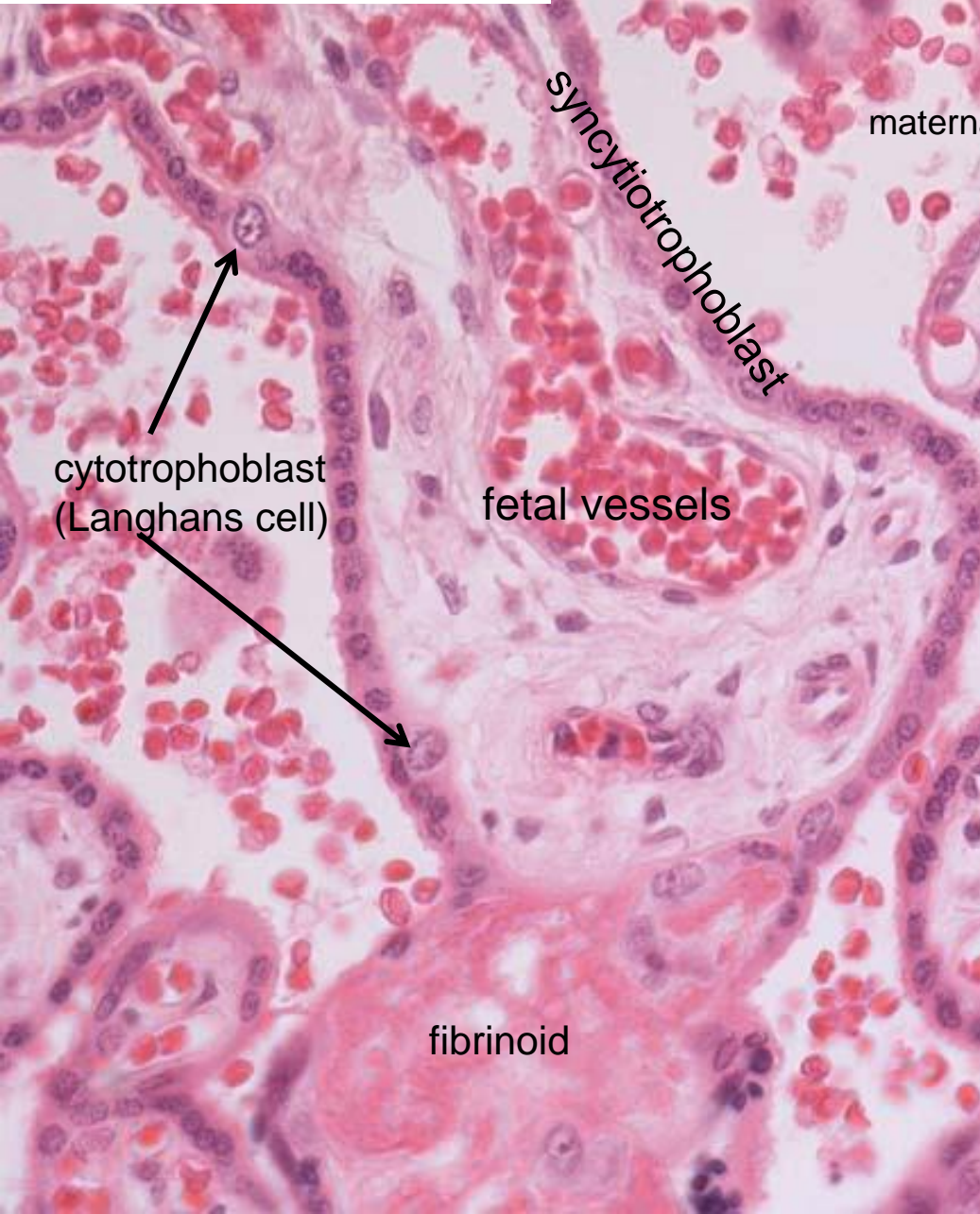
stem villus

basal plate – decidua basalis

Human placenta (HE)



Human placenta (HE)
– placental barrier





FEMALE REPRODUCTIVE SYSTEM II

Slides:

- 49. *Vagina* – glycogen /Best's carmine/
- 50. *Vagina*
- 51. *Labium minus*
- 99. *Funiculus umbilicalis* /HE, HES, AZAN/
- 100. *Placenta*

Embryologic schemes:

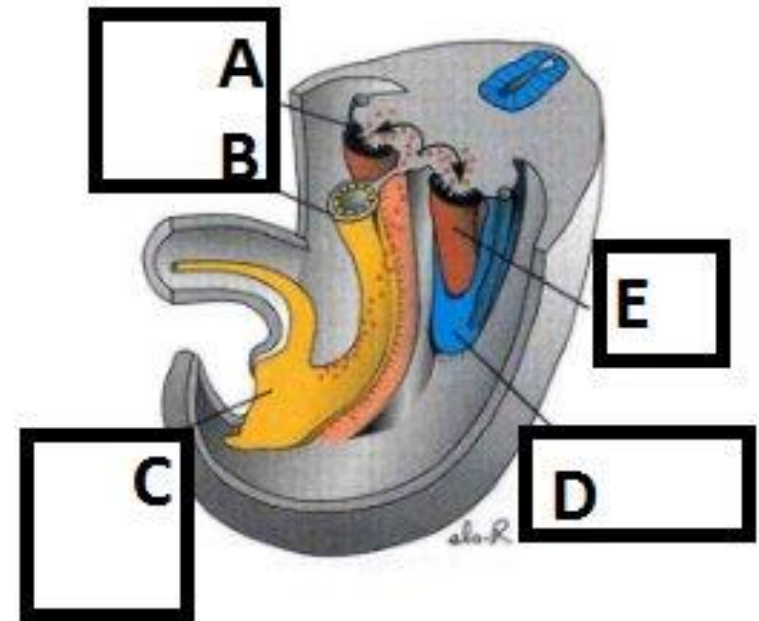
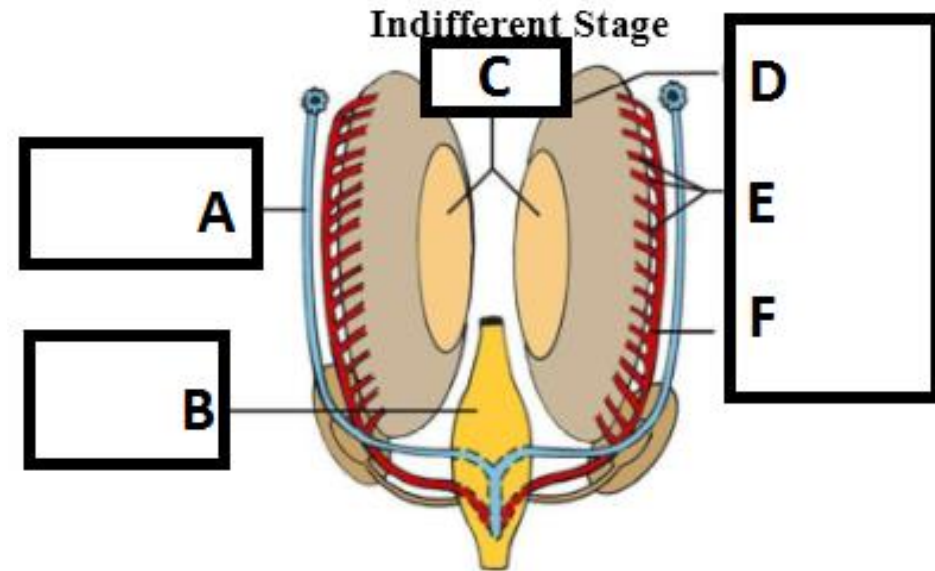
- Indifferent gonad
- Differentiation into testis, differentiation into ovary

Atlas EM:

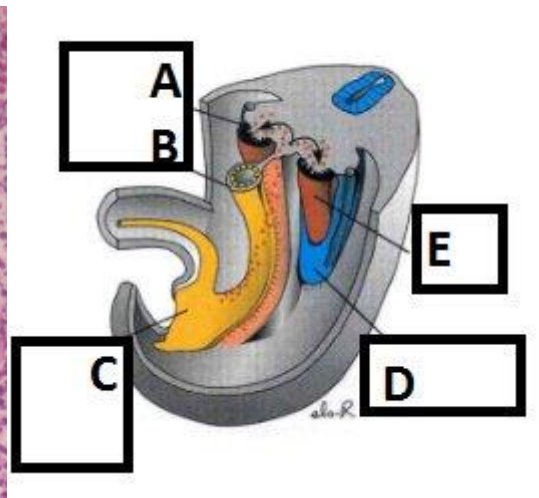
- Development of gonads (95)
- Development of genital passages and external genitalia (96)

Development of gonad

- **indifferent gonad**
to 6th-7th week of development
 - germ cell (wall of yolk sac)
 - genital (gonadal) ridge – mesoderm
 - coelomic epithelium
 - mesoderm – primitive sex cords

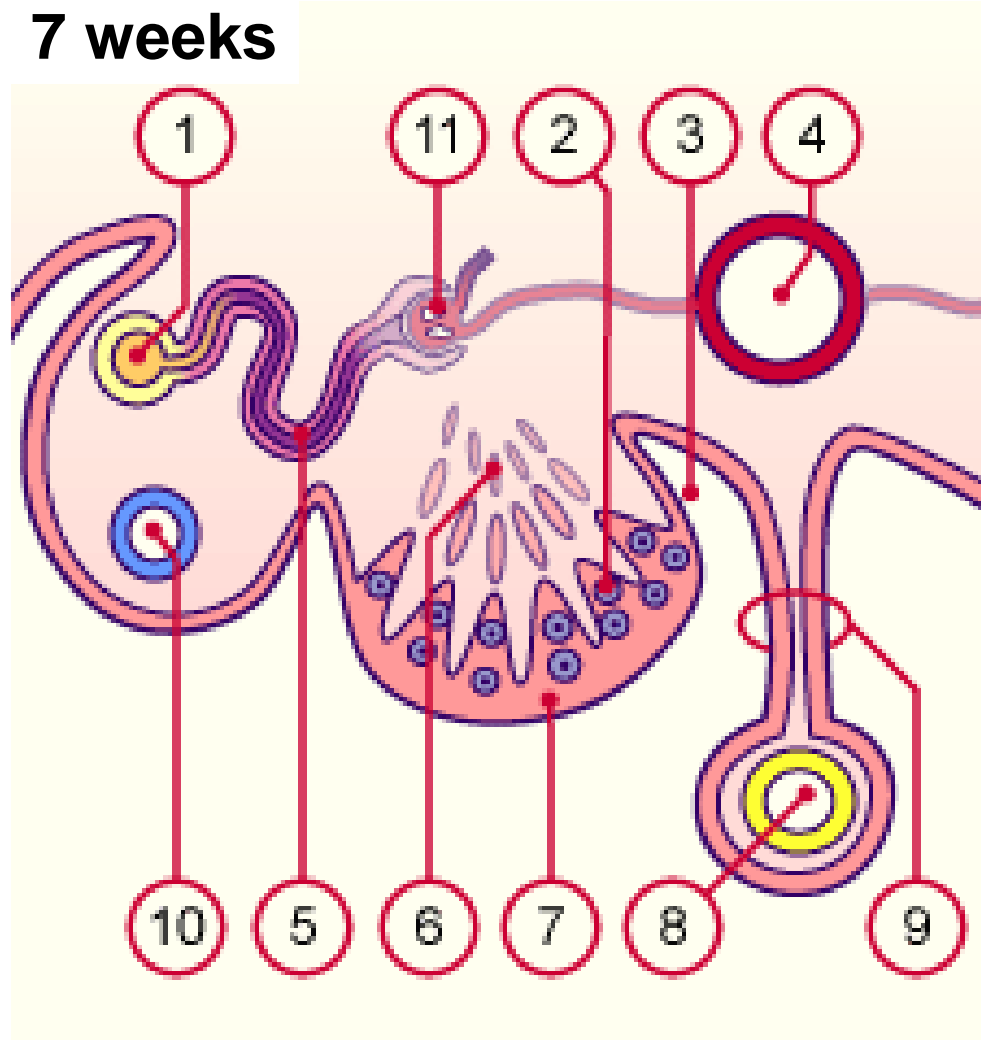


Development of gonad – Human embryo (6th week)



Development of gonad - differentiation to ovary

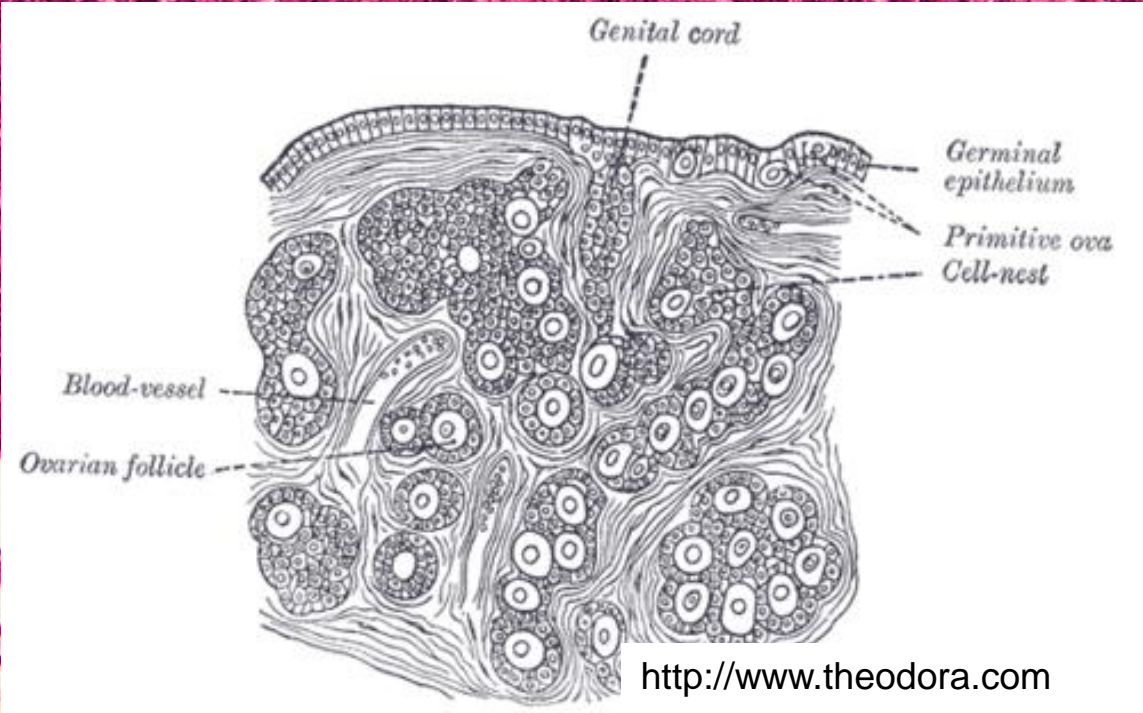
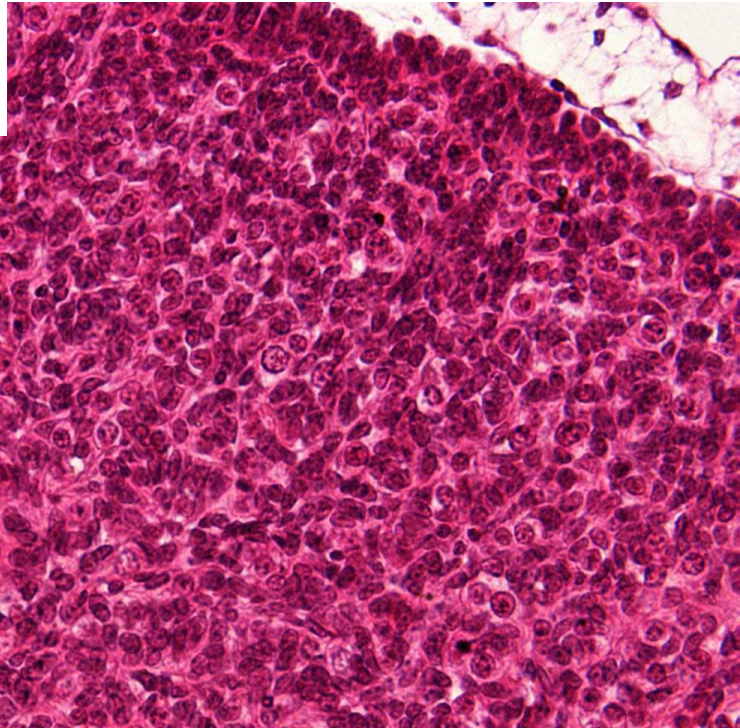
- 2 generations of cords
 - medullary disappears
 - 7th week – cortical cords arise → form follicles, remain close to the surface
- germ cells → oogonia



Development of gonad – Human embryo (8th week) female



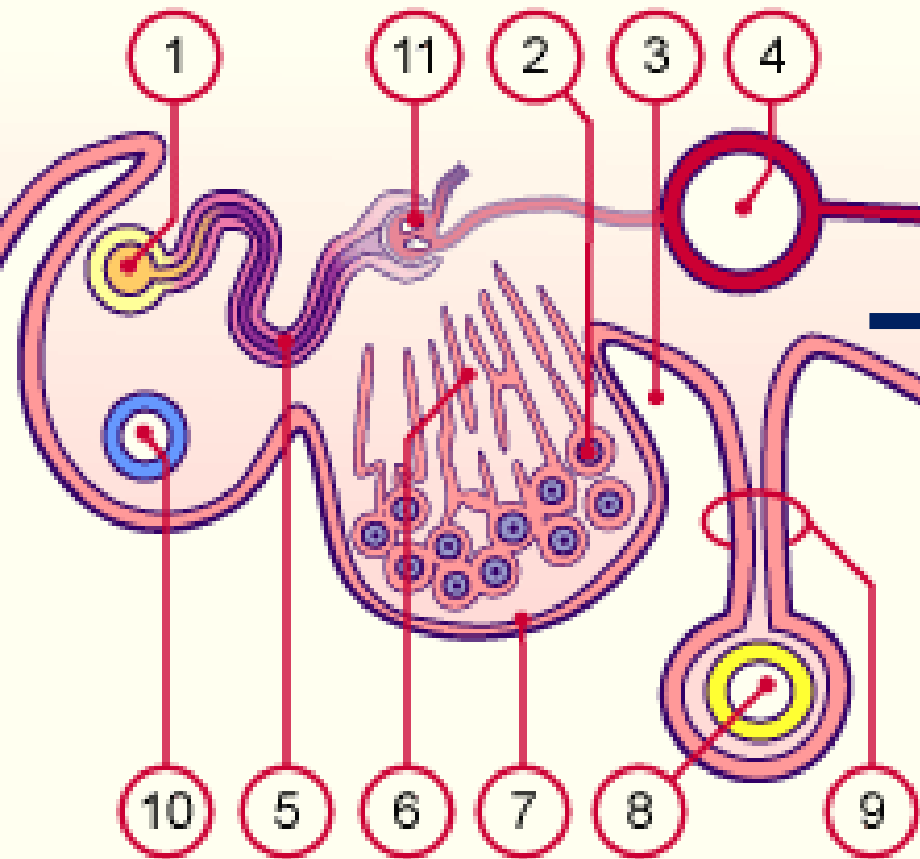
germinative
epithelium



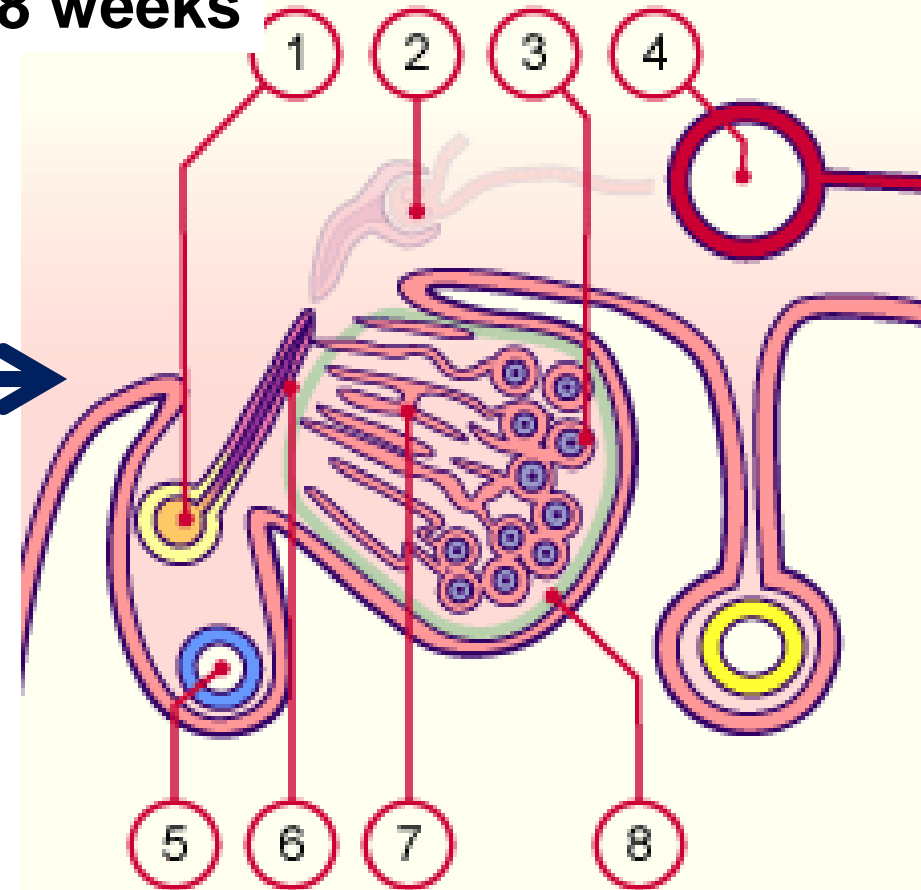
Development of gonad - differentiation to testis

- 1 generation of genital cords, separating from the coelomic epithelium

7 weeks



8 weeks

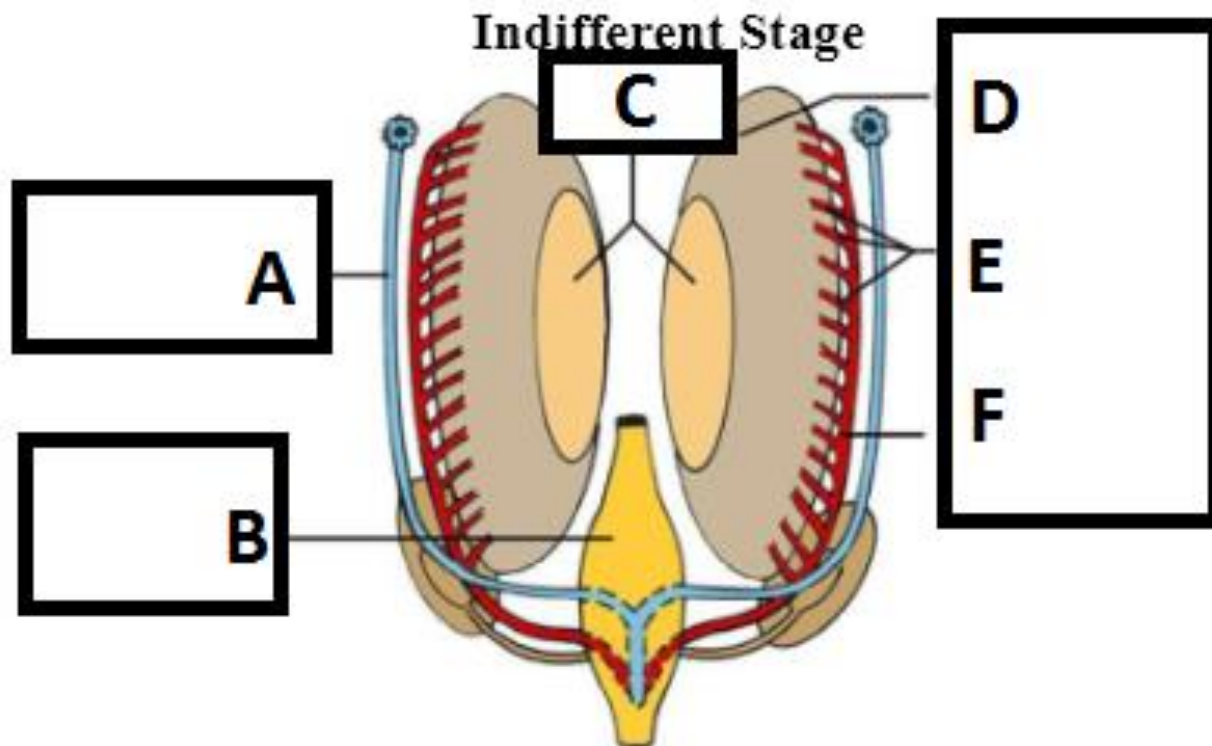


Development of gonad – Human embryo (8th week) male



Development of genital ducts

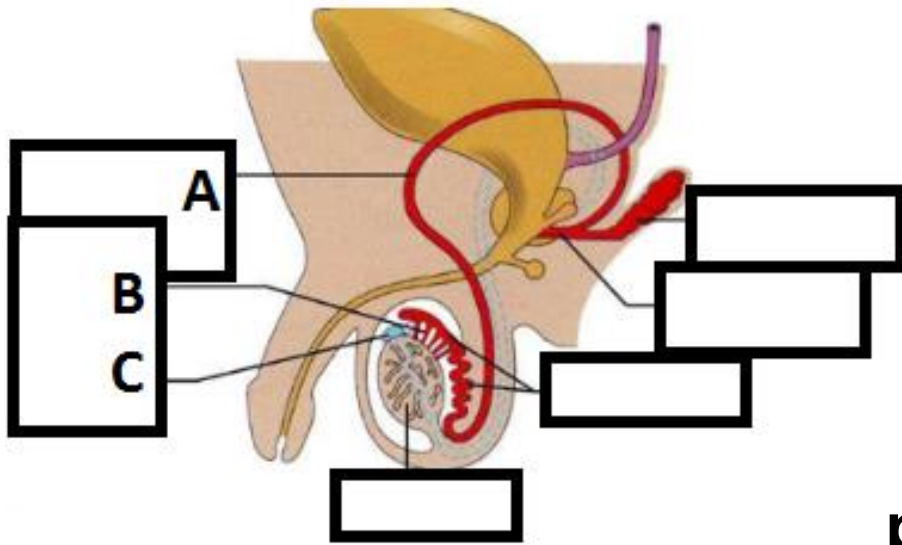
- **indifferent stage**
 - mesonephric duct (Wolffian)
 - paramesonephric duct (Müllerian) – longitudinal invagination of coelomic epithelium at the urogenital cord



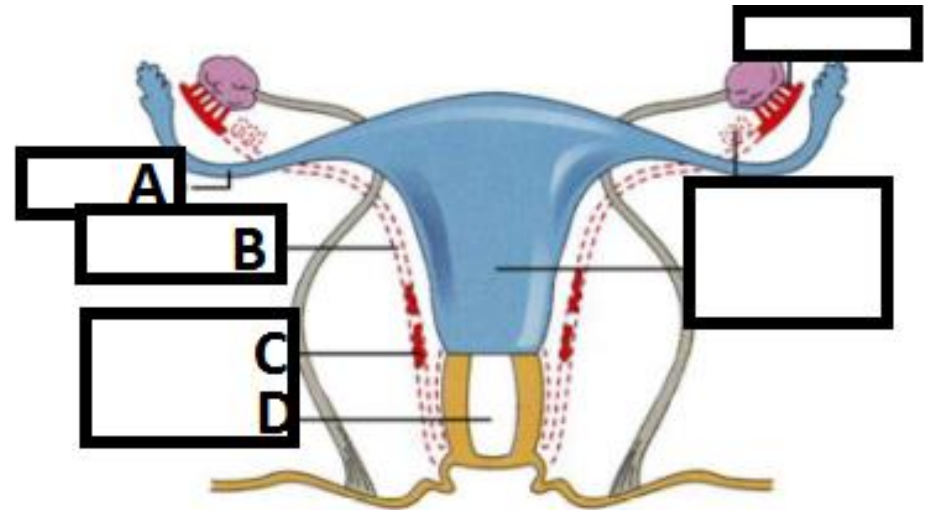
Differentiation

towards **male** sex

towards **female** sex



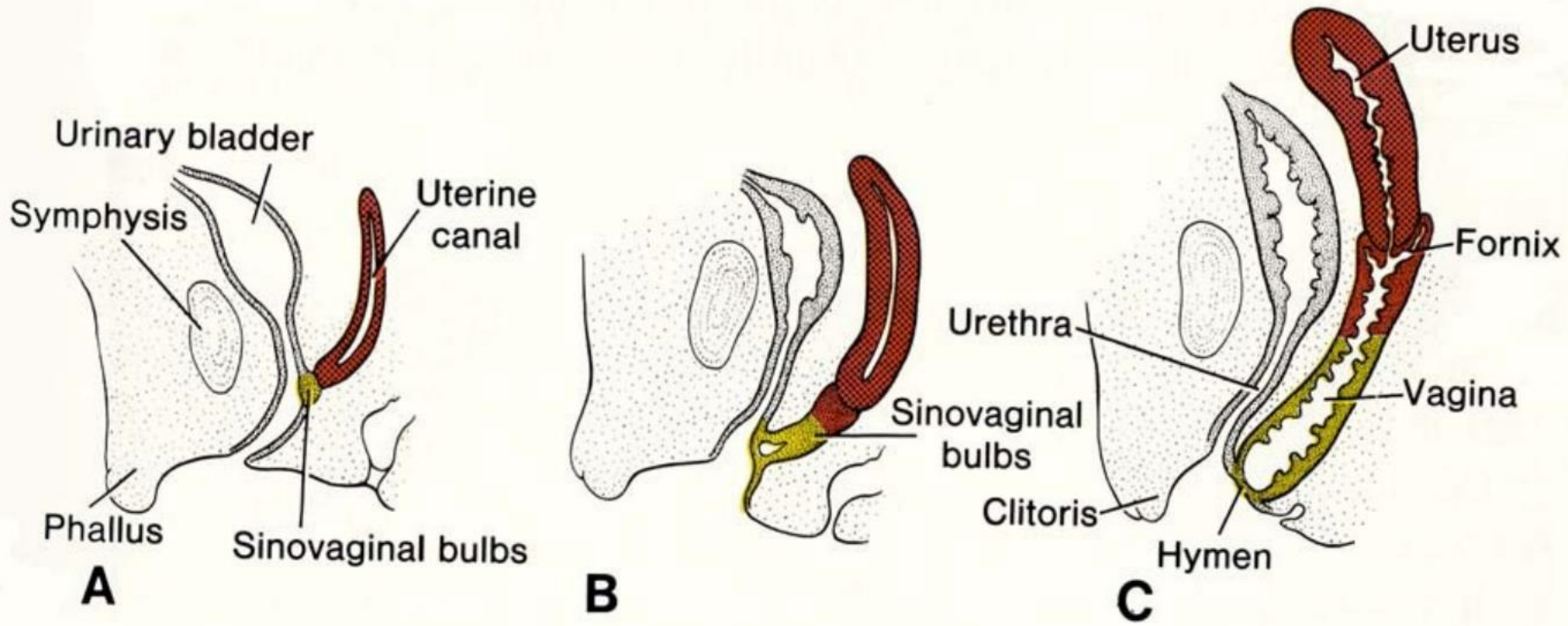
mesonephric duct – Wolff



paramesonephric duct - Müller

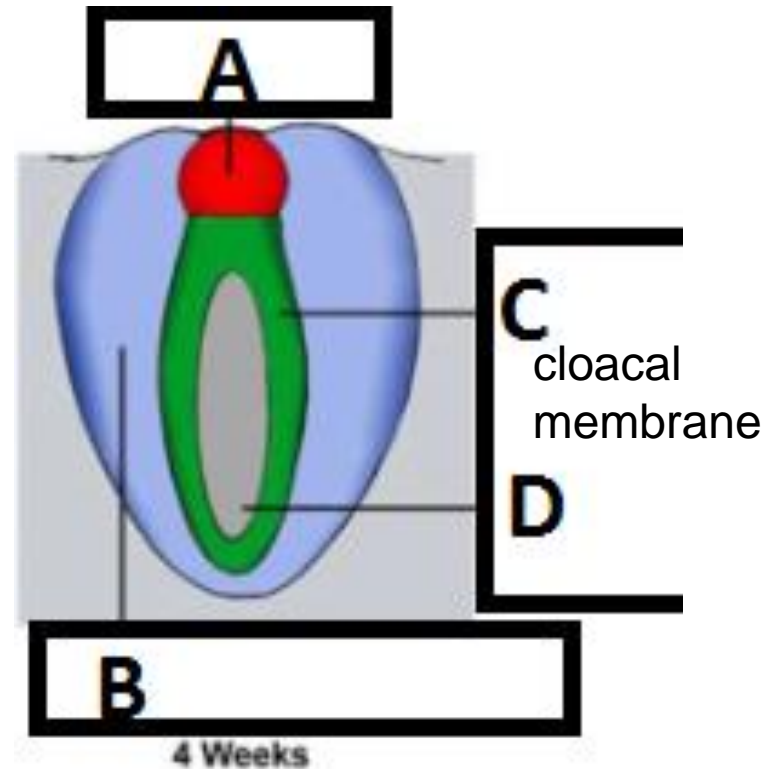
- vertical
- horizontal do not fuse → uterine tube
- vertical - both ducts fuse → **uterovaginal primordium** – uterus and cranial part of vagina

Development of the vagina

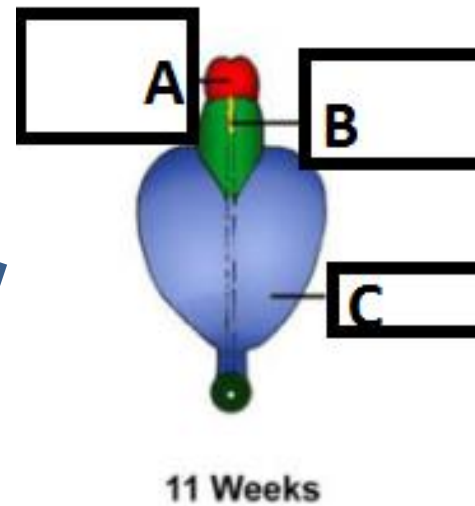
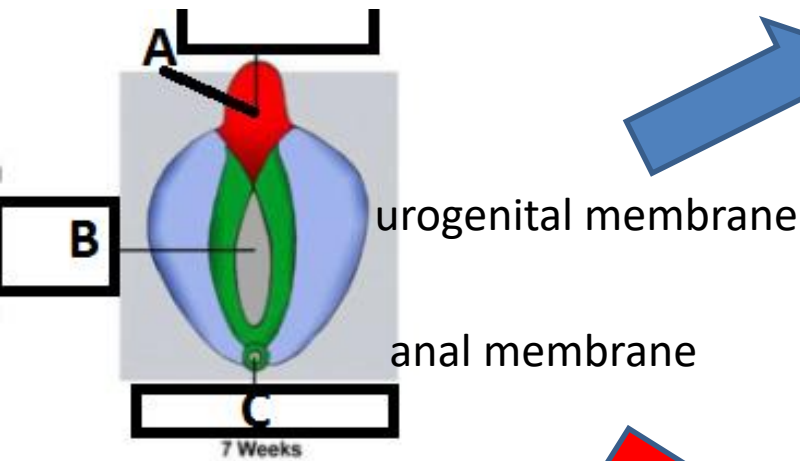


Development of external genitalia

- indifferent stage
 - cloacal **folds** around the cloacal membrane
 - anteriorly **urethral** (urogenital) folds
 - posteriorly anal folds
 - genital **tubercle (phallus)**
 - genital **swellings**

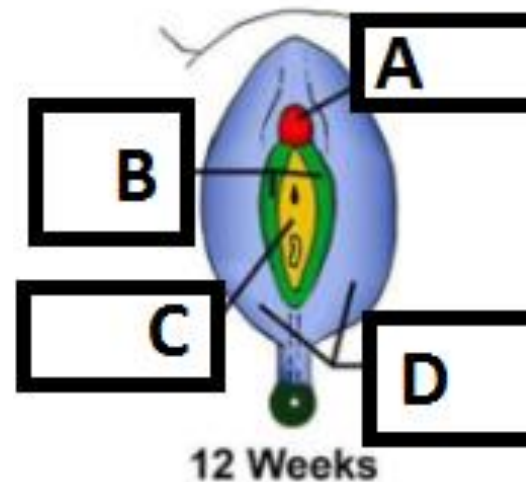


Development of external genitalia - differentiation



MALE

- genital tubercle
→ penis
- urogenital folds
fuse → pars
spongiosa urethrae
m.
- genital swellings
fuse → scrotum



FEMALE

- genital **tubercle**
→ clitoris
- **urethral**
(urogenital) folds
→ labia minora
- **genital swellings**
(tori genitales) → labia
maiora

Development of external genitalia – **Human embryo (8th week)**
female

