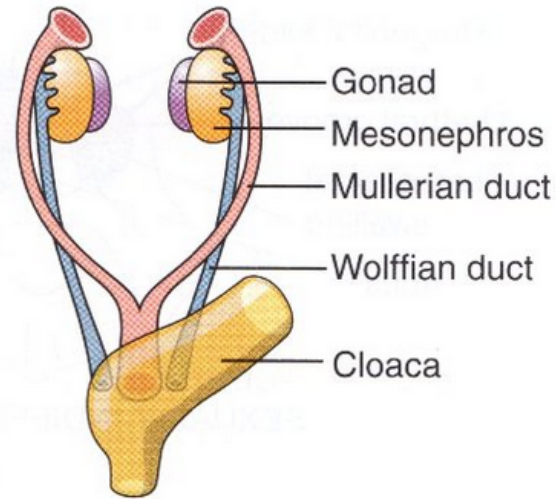


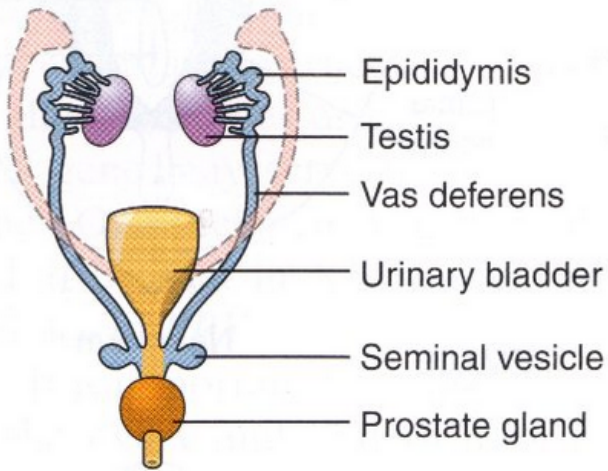
# Development and teratology of reproductive system

Anna Mac Gillavry

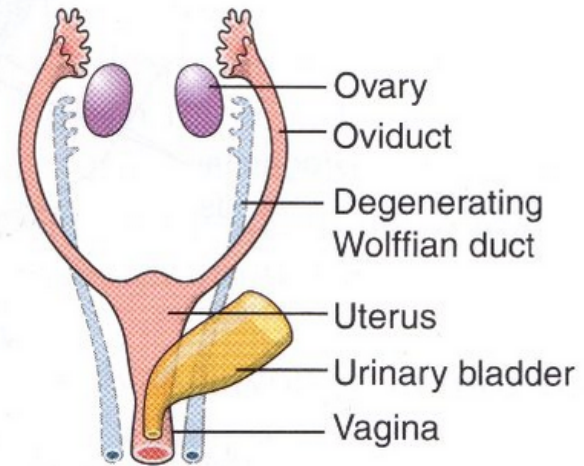
24.04.2023



INDIFFERENT STAGE

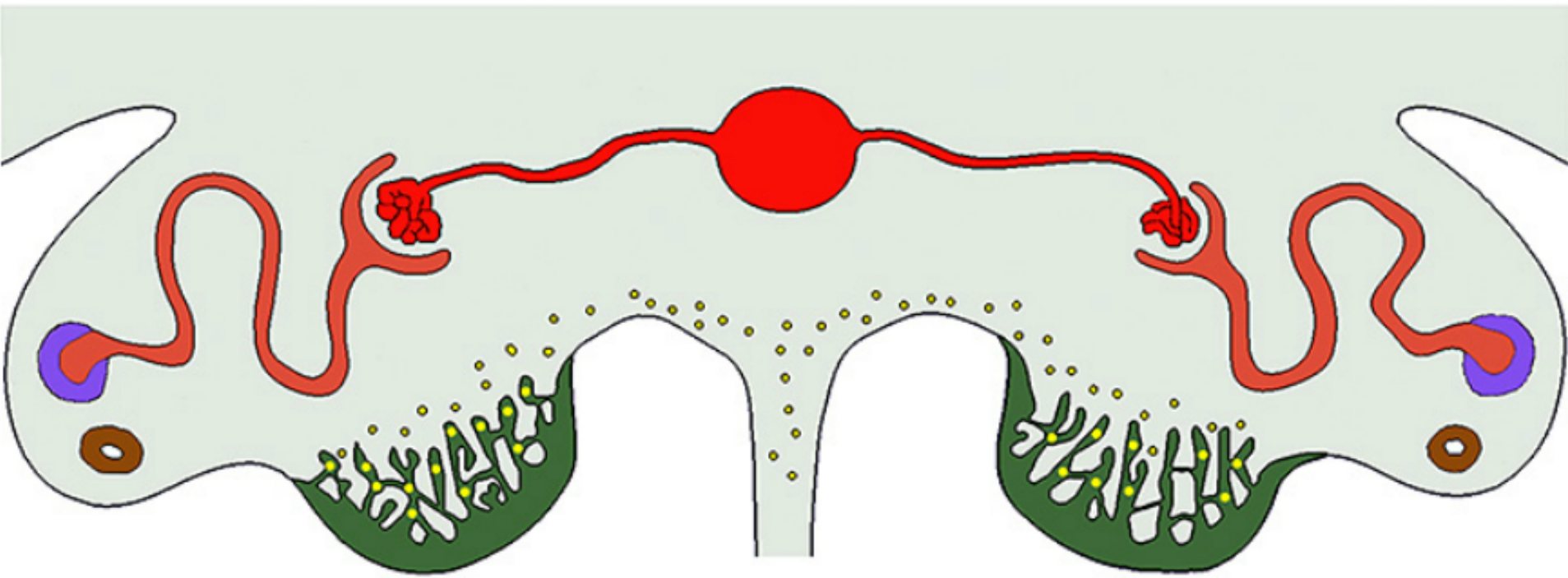


MALE



FEMALE

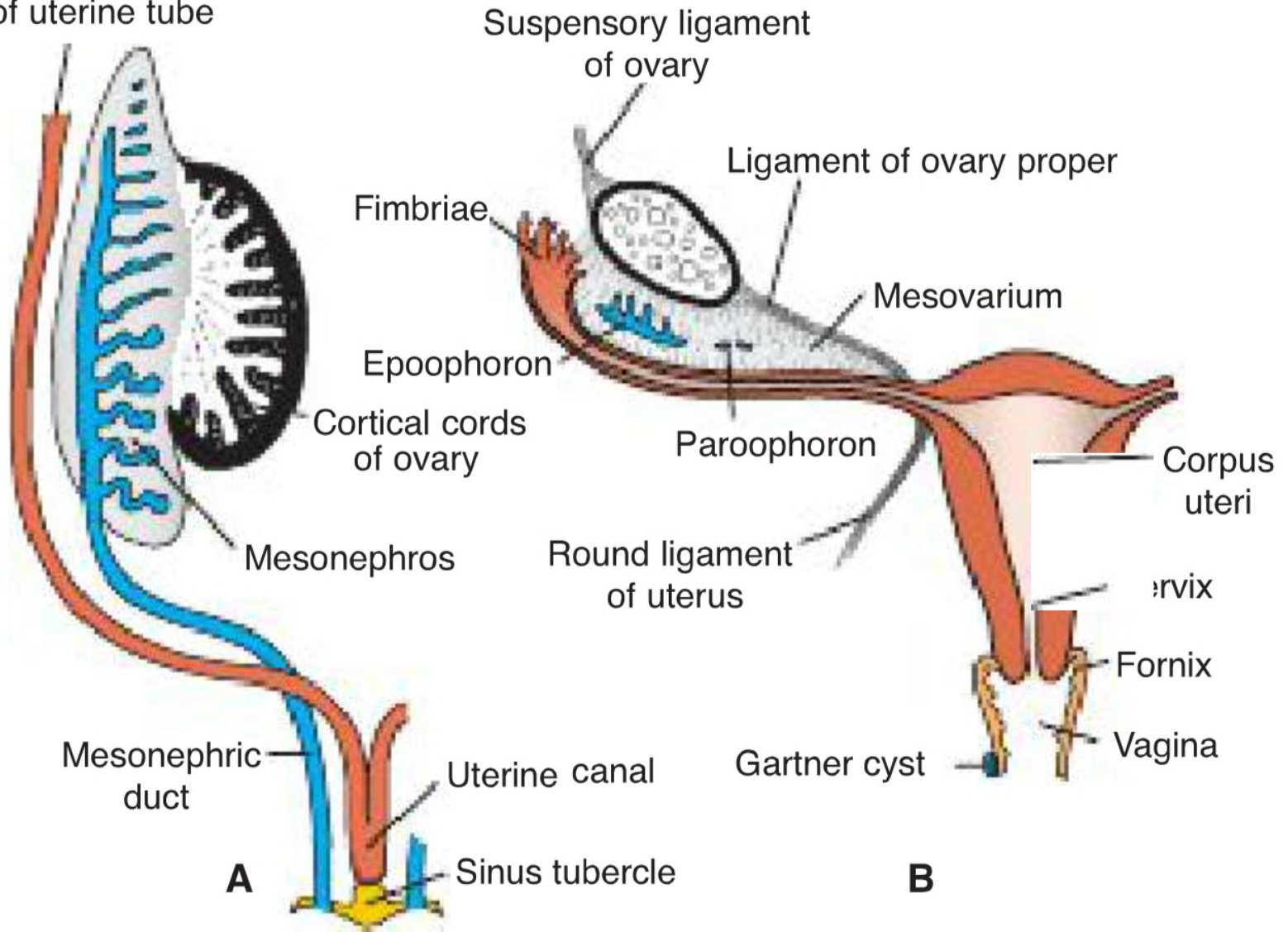
# Indifferent stage of the gonads





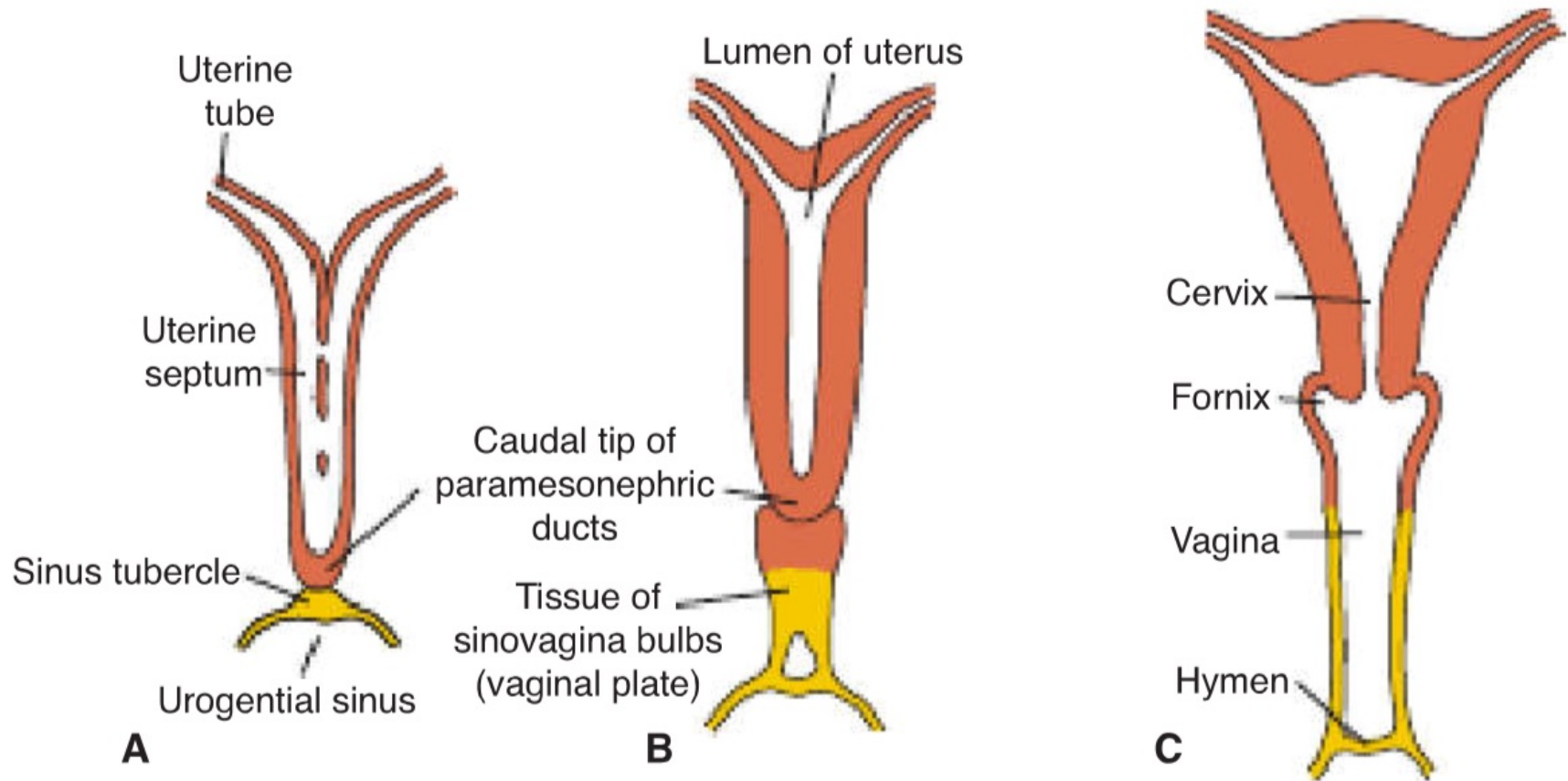
# Differentiation of the ducts - females

Abdominal ostium  
of uterine tube

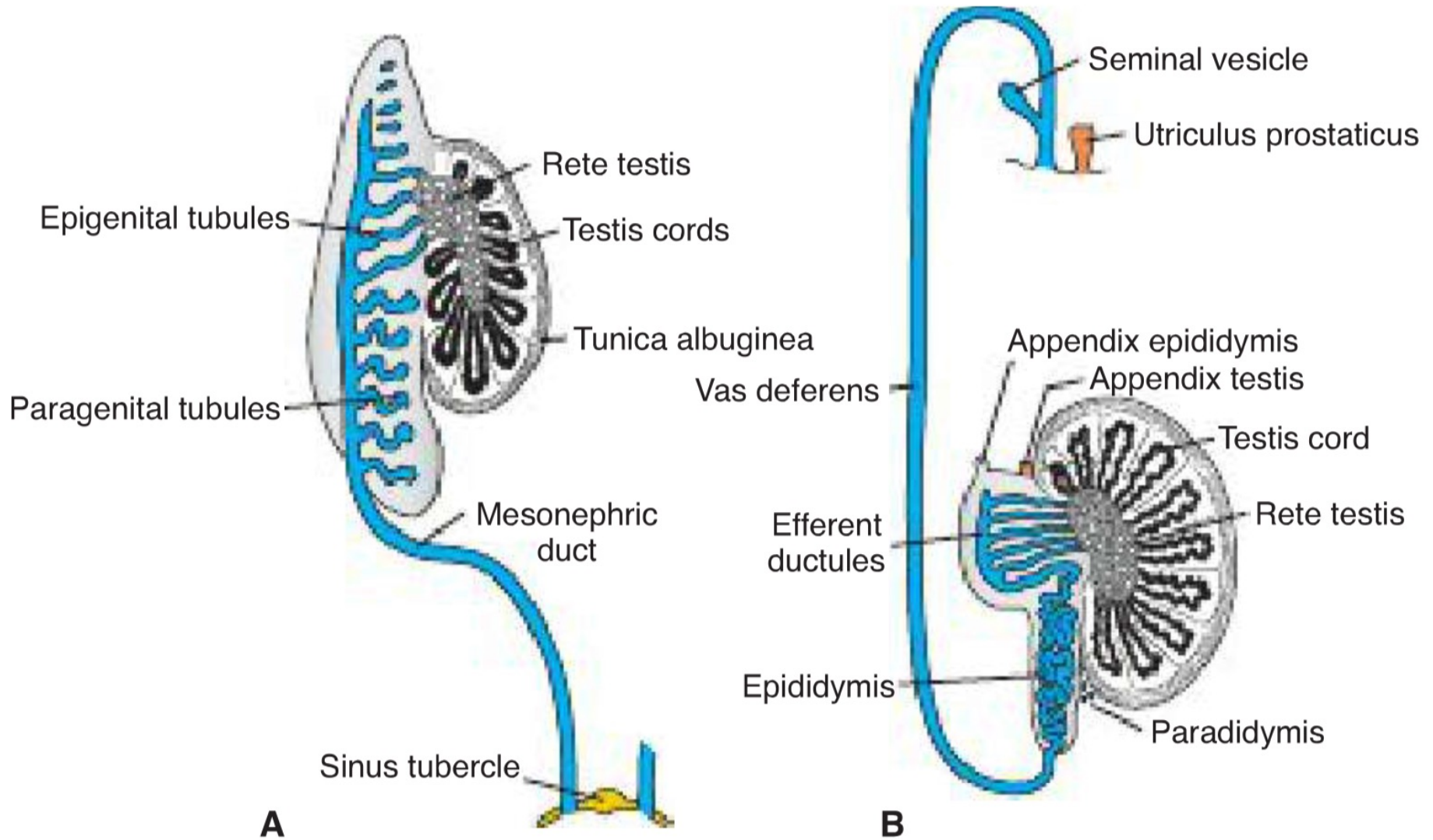




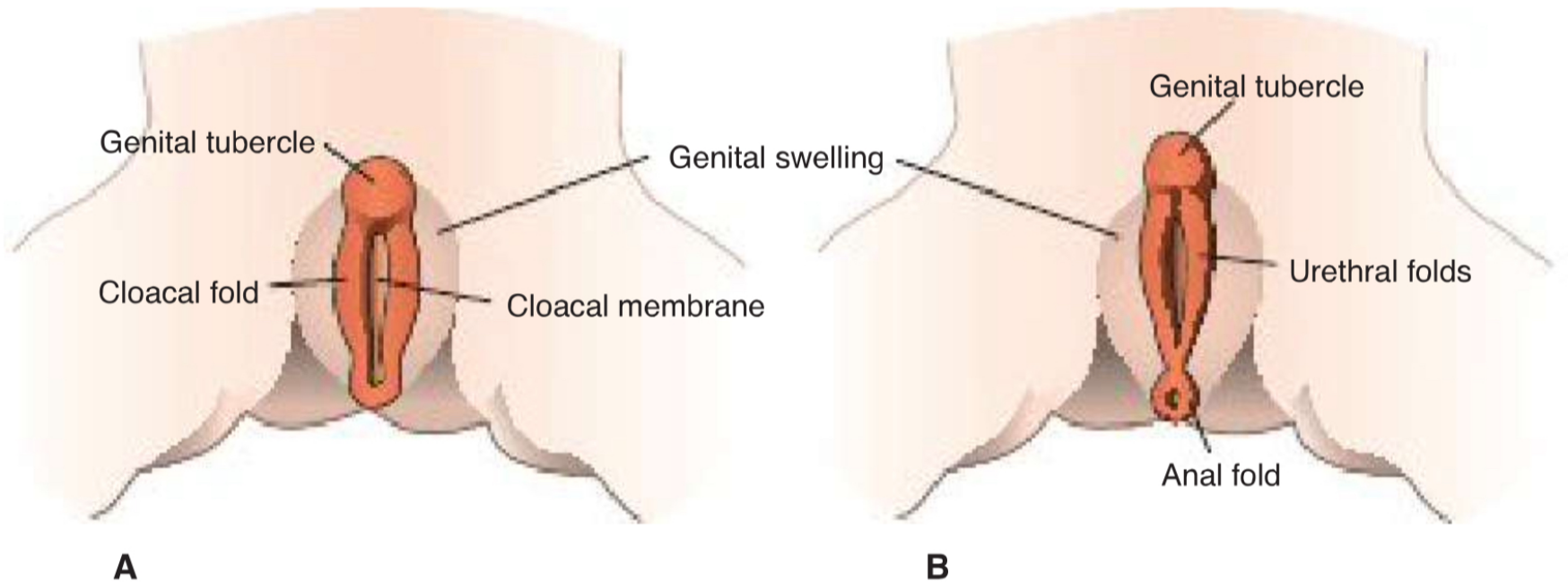
# Development of the vagina



# Differentiation of the ducts - males

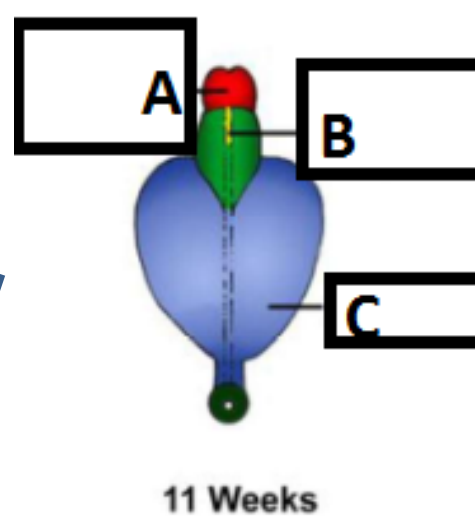
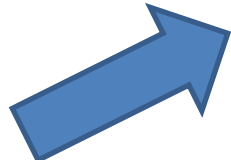
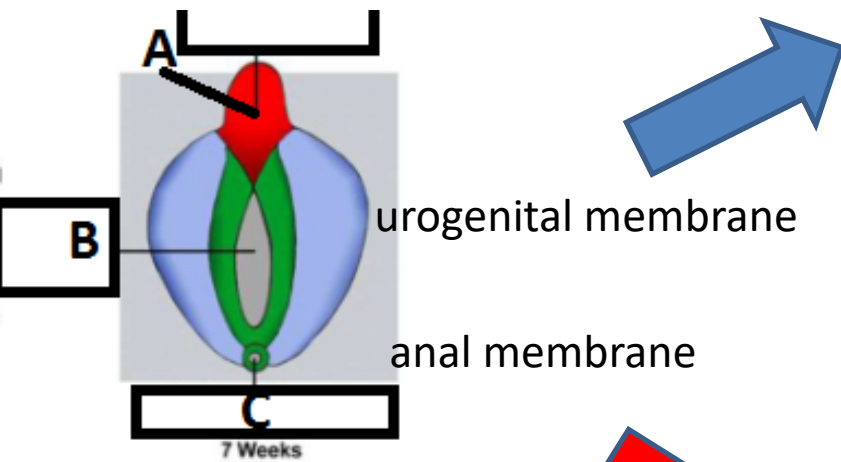


# Indifferent stage of the external genitalia



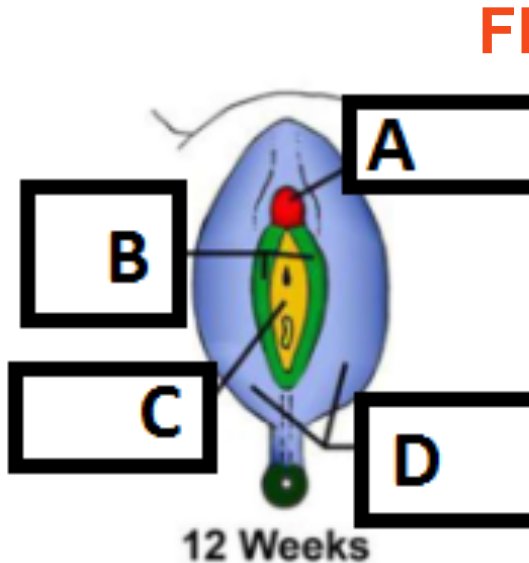
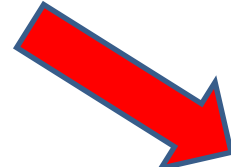


# Differentiation of external genitalia



## 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

# Disorders of sexual development (DSDs)

- Ambiguous genitalia: clitoral hypertrophy/small penis with hypospadias
- 46, XX DSDs:
  - - congenital adrenal hyperplasia, most common cause – 60 % of all DSDs
- 46, XY DSDs:
  - androgen insensitivity syndrome (AIS): complete (CAIS), mild (MAIS) or partial (PAIS)
  - 5- $\alpha$ -reductase deficiency: testosterone conversion into dihydrotestosterone is impaired

Ovotesticular DSDs - the karyotype is 46, XX in 70 % of cases

# Chromosomal aberrations

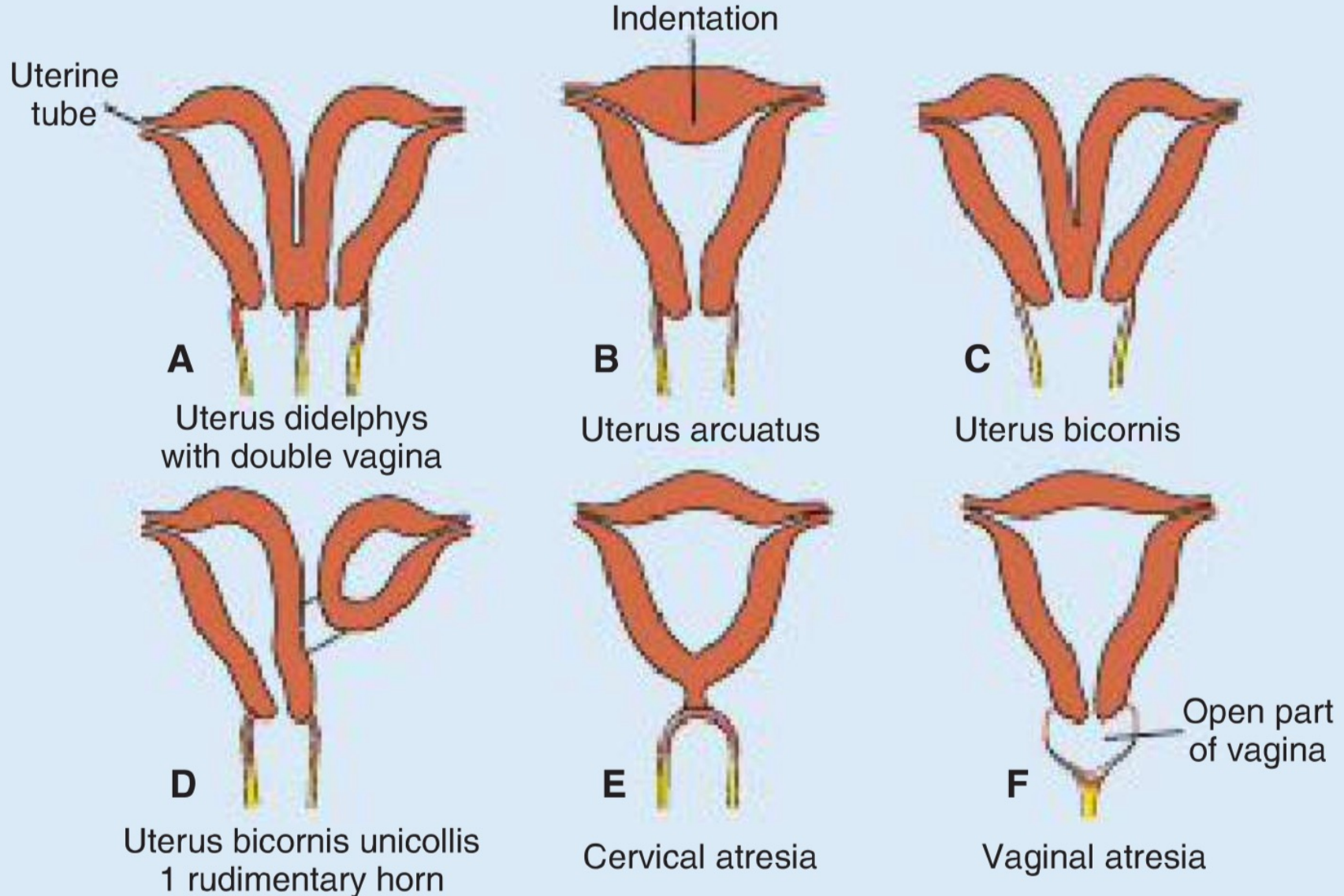
- Klinefelter syndrom – 47, XXY (XXXY...) – 1 in 1000 males: decreased fertility, small testes, decreased testosterone levels, gynecomastia in app. 33%
- Gonadal dysgenesis – oocytes are absent:
  - Swyer syndrome – XY female gonadal dysgenesis – point mutation or deletions of the SRY gene
  - Turner syndrome – 45, X



# Hernias and cryptorchidism

- Congenital indirect inguinal hernia
- Hydrocele of the testis and/or spermatic cord
- Cryptorchidism

# Uterine and vaginal defects





# Defects in male genitalia

- Hypospadias – 3 to 5 in 1000 births
- Epispadias – 1 in 30000 – most often associated with extrophy of the bladder and abnormal closure of the ventral body wall
- Micropenis – insufficient androgen stimulation – primary hypogonadism, hypothalamic or pituitary dysfunction
- Bifid penis