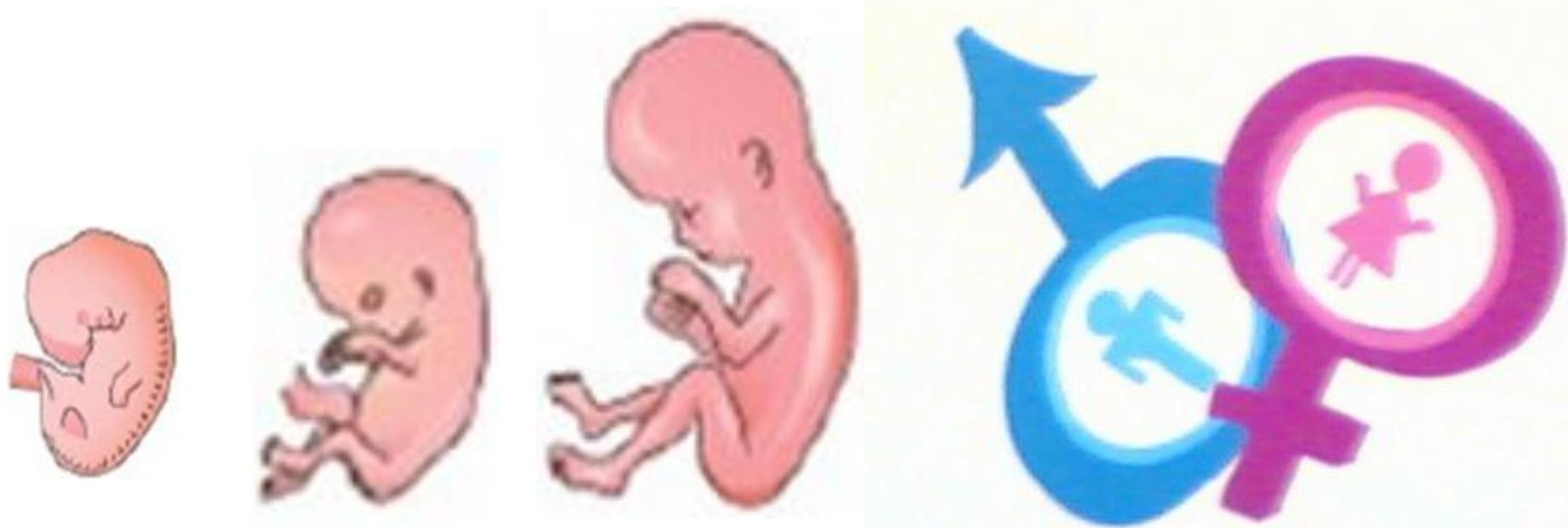


EMBRIOLOGI SISTEM GENITALIA



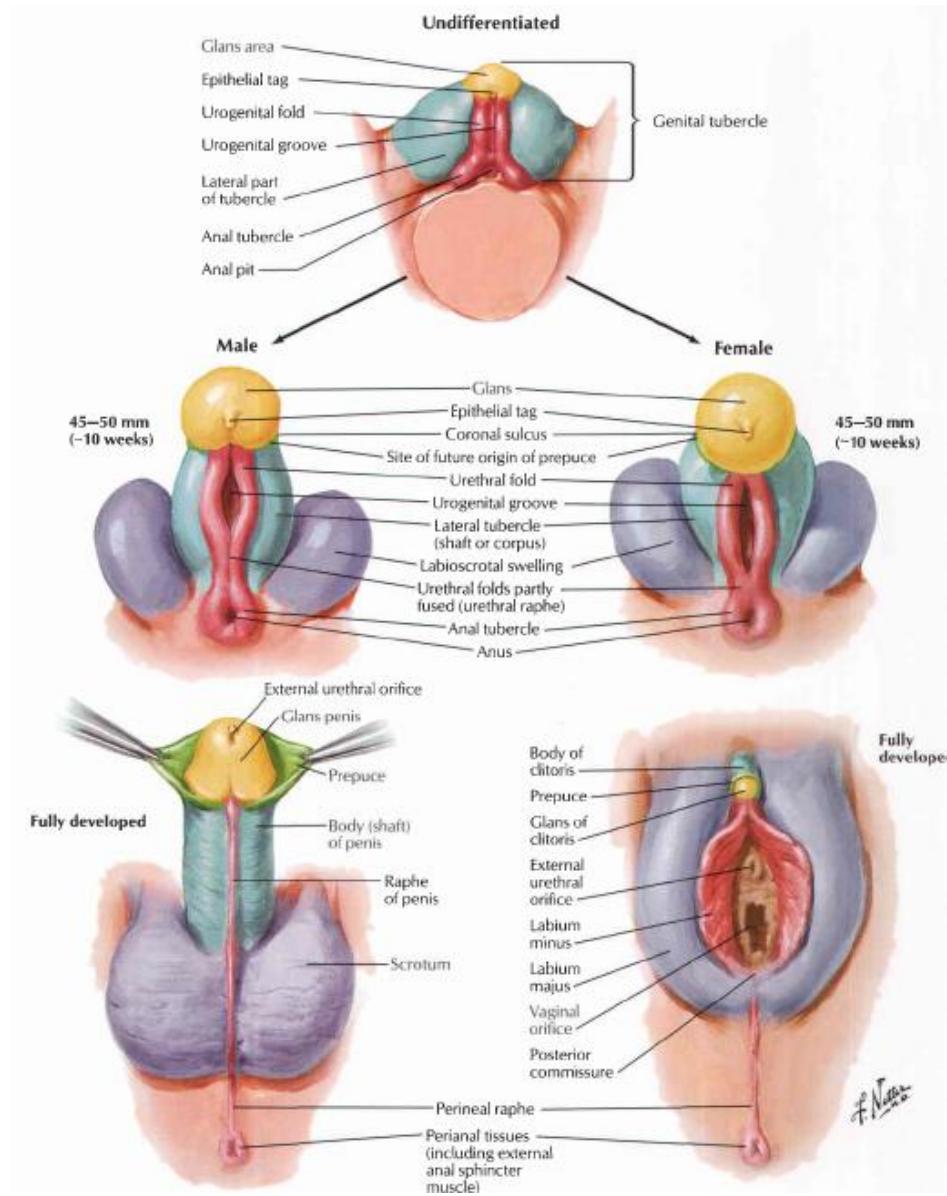
dr. Al-Muqsith, M.Si

Pendahuluan

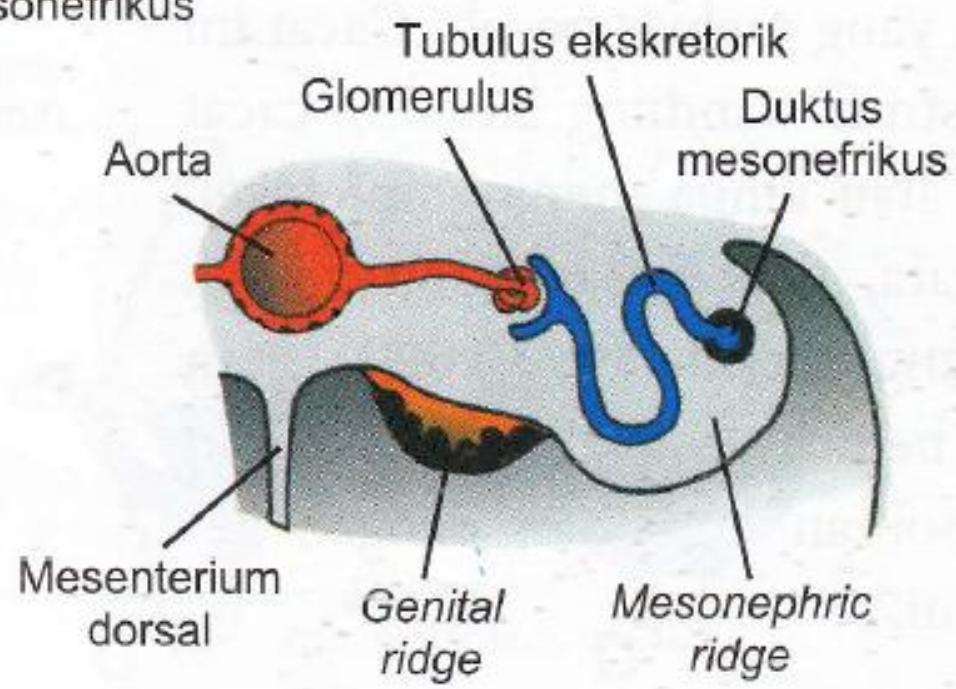
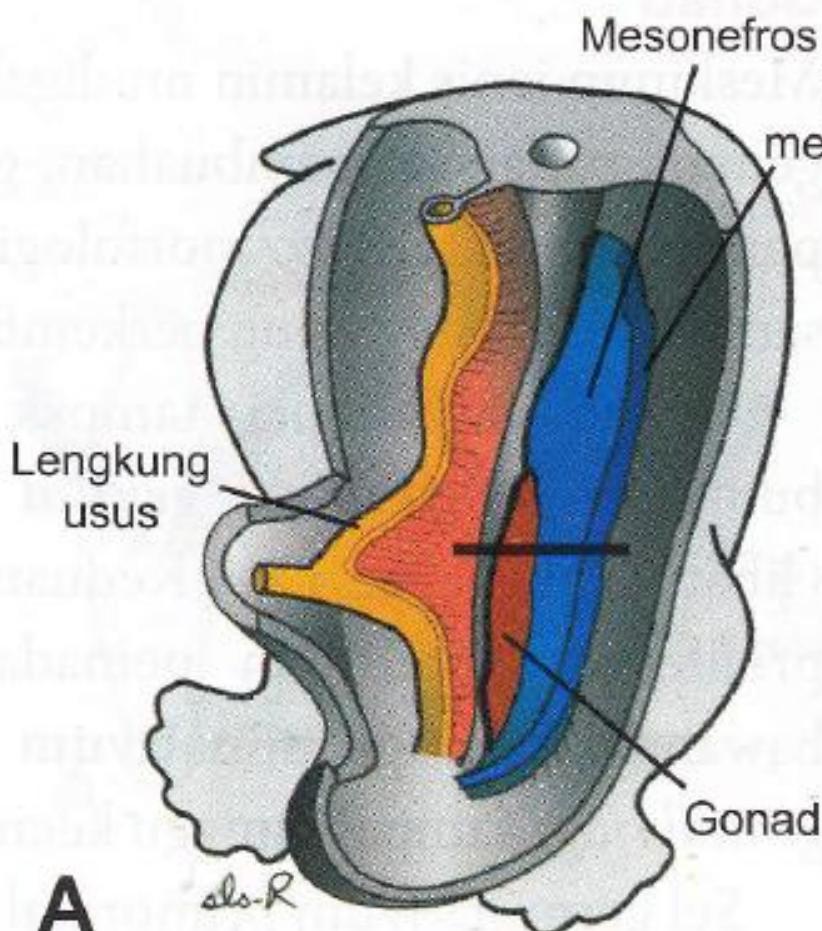


- kunci dimorfisme seksual → kromosom Y, mengandung gen SRY (*sex determining region on Y*) di kromosom Yp11, yang proteinnya berupa *testis-determining factor* (jika ada → perkembangan ke arah pria, tidak ada → jenis kelamin wanita)
- Jika sel germinativum primordial gagal mencapai genital/gonadal ridge → gonad tidak terbentuk
- Sistem Genitalis tdd:
 1. Gonad (kelenjar seks primitif)
 2. Duktus genitalis
 3. Genitalia eksterna
- Ketiga komponen ini menjalani stadium indiferen

Perkembangan Organ Genitalia



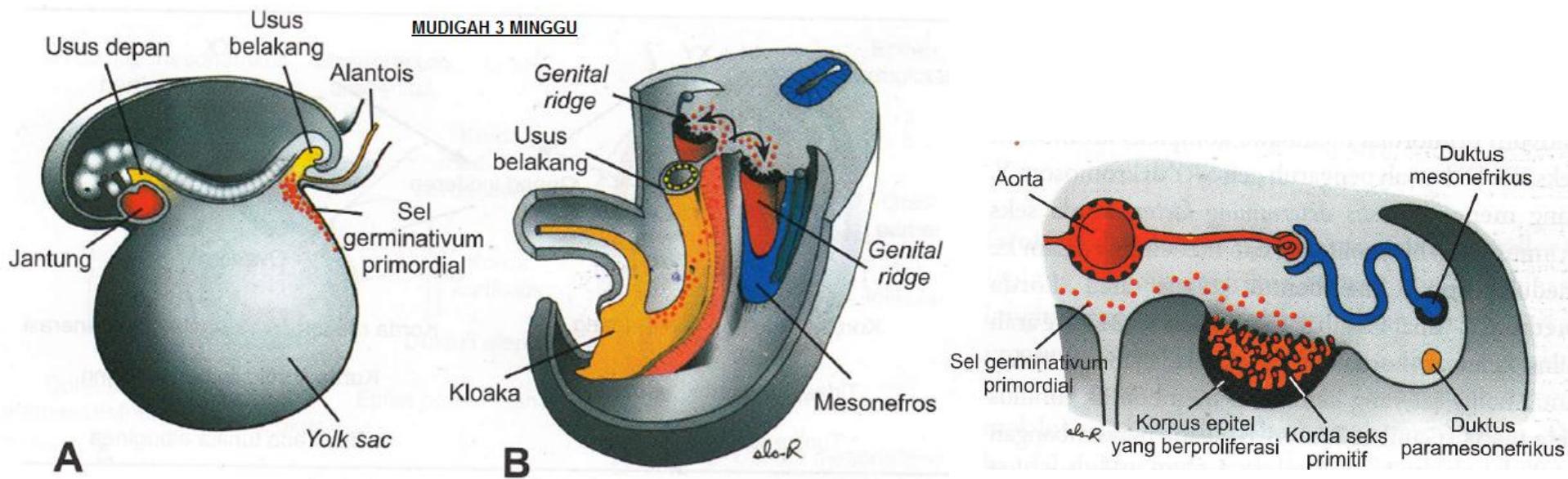
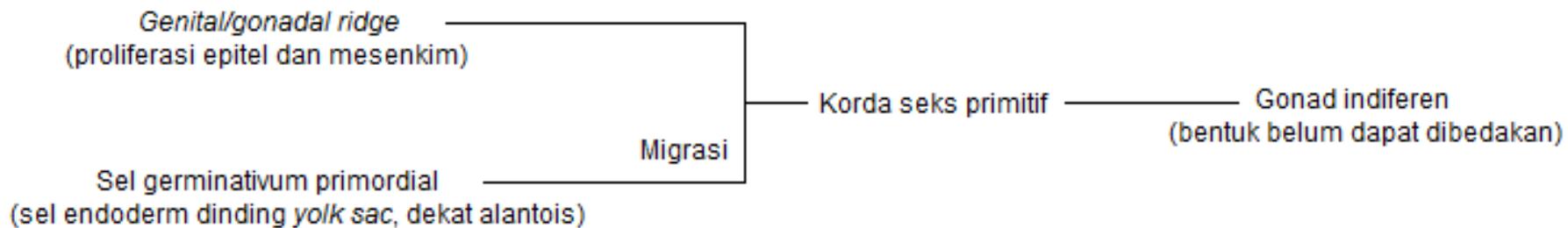
Hubungan Genital Ridge & Mesonefros



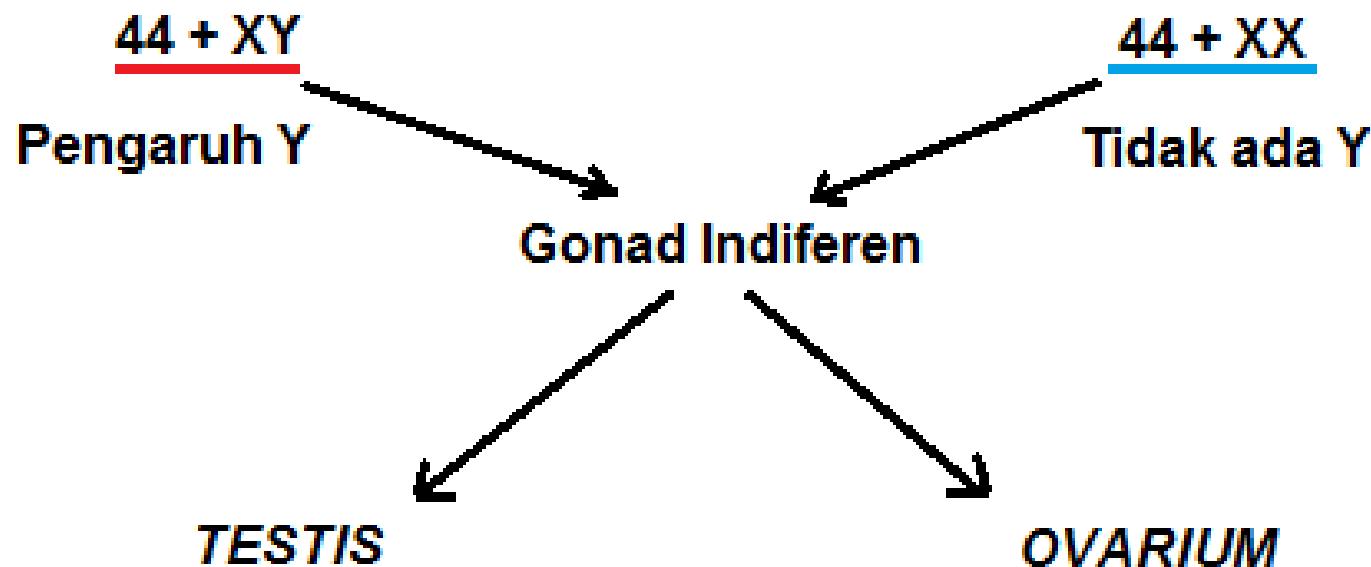
A

B

Jalur Migrasi Sel Germinativum Primordial



Pengaruh Sel Germinativum Primordial pada Gonad Indiferen



Korda medularis berkembang

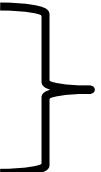
Korda kortikolis (-)

Tunika albuginea tebal

Korda medularis degenerasi

Korda kortikolis berkembang

Tunika albuginea (-)

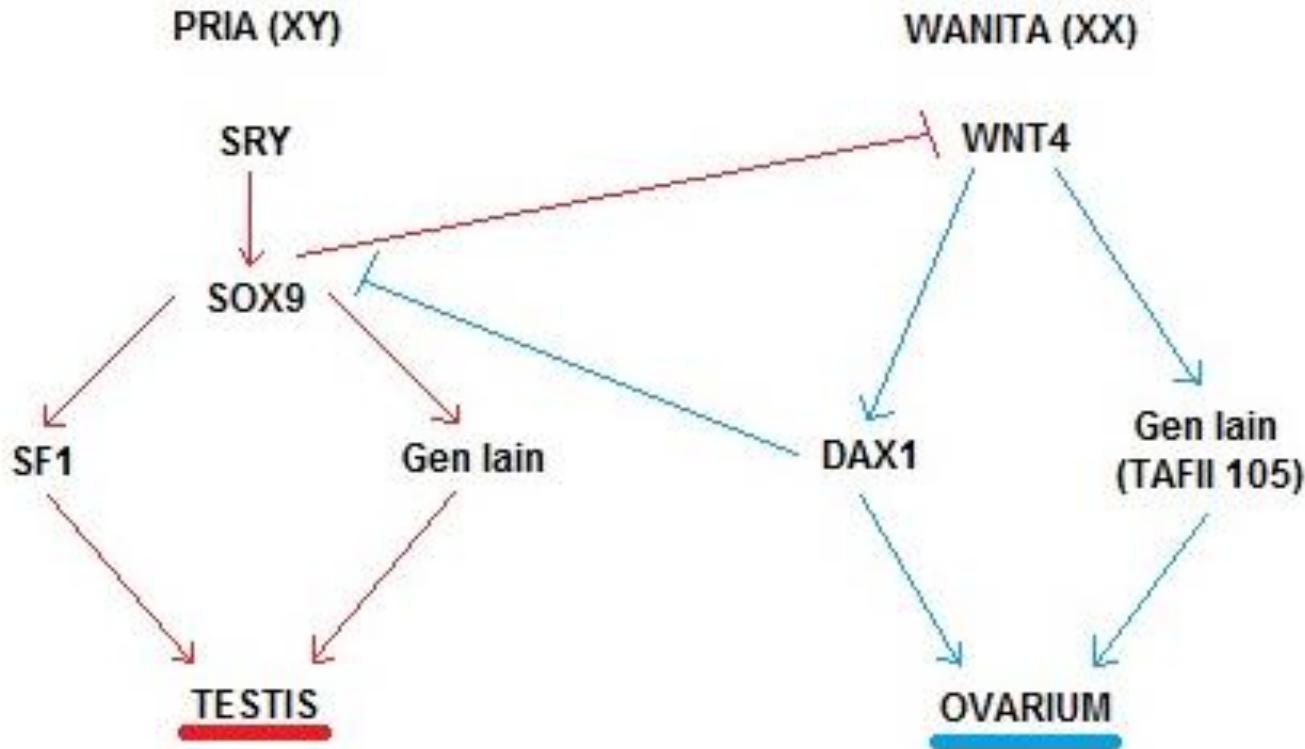
- Gen SRY (kromosom Y) → *testes-determining factor* (faktor penentu testis) + perkembangan jenis kelamin pria
- Gen SRY:
 - Gen SOX9
 - SF1

Merangsang diferensiasi
sel Sertoli & Leydig
- Ekspresi gen SRY:
 - pembentukan korda medularis (testis)
 - pembentukan tunika albuginea
 - korda kortikalis (ovarium) gagal berkembang

WNT4 :

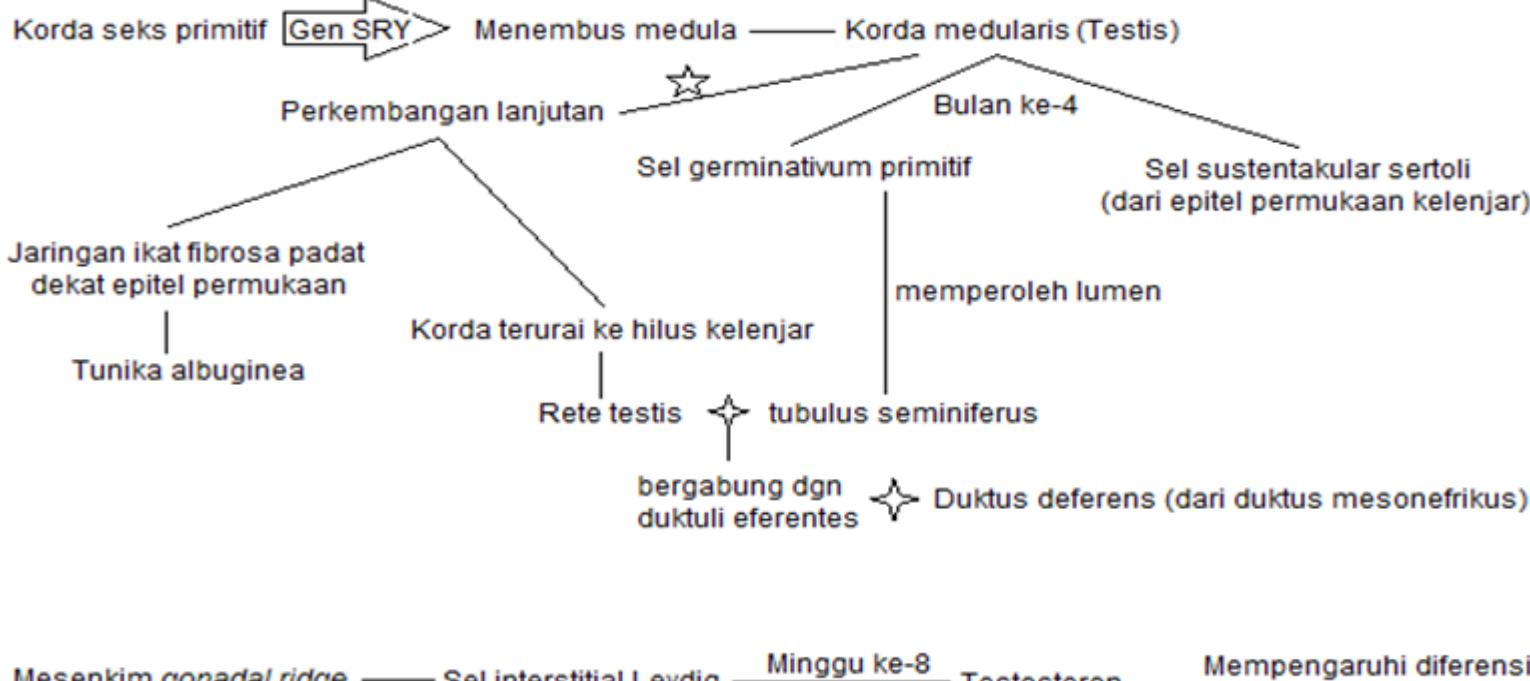
- gen utama pembentukan ovarium
- meningkatkan ekspresi DAX1 & menghambat SOX9
- Pembentukan korda kortikalis
- Lenyapnya korda medularis (testis)
- Tidak terbentuk tunika albuginea

Gen Deferensiasi Testis & Ovarium

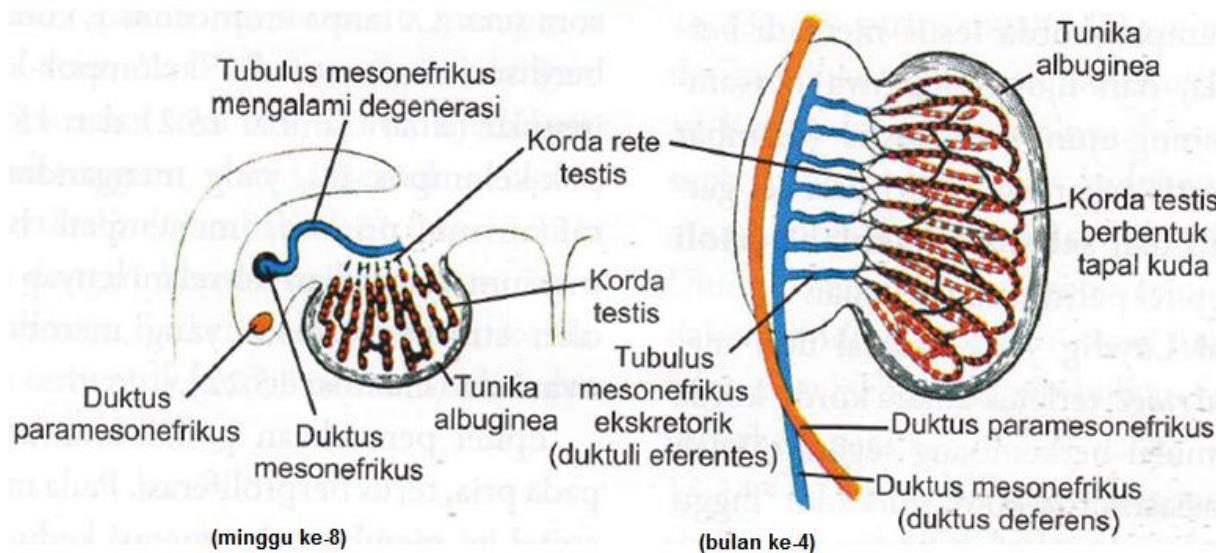


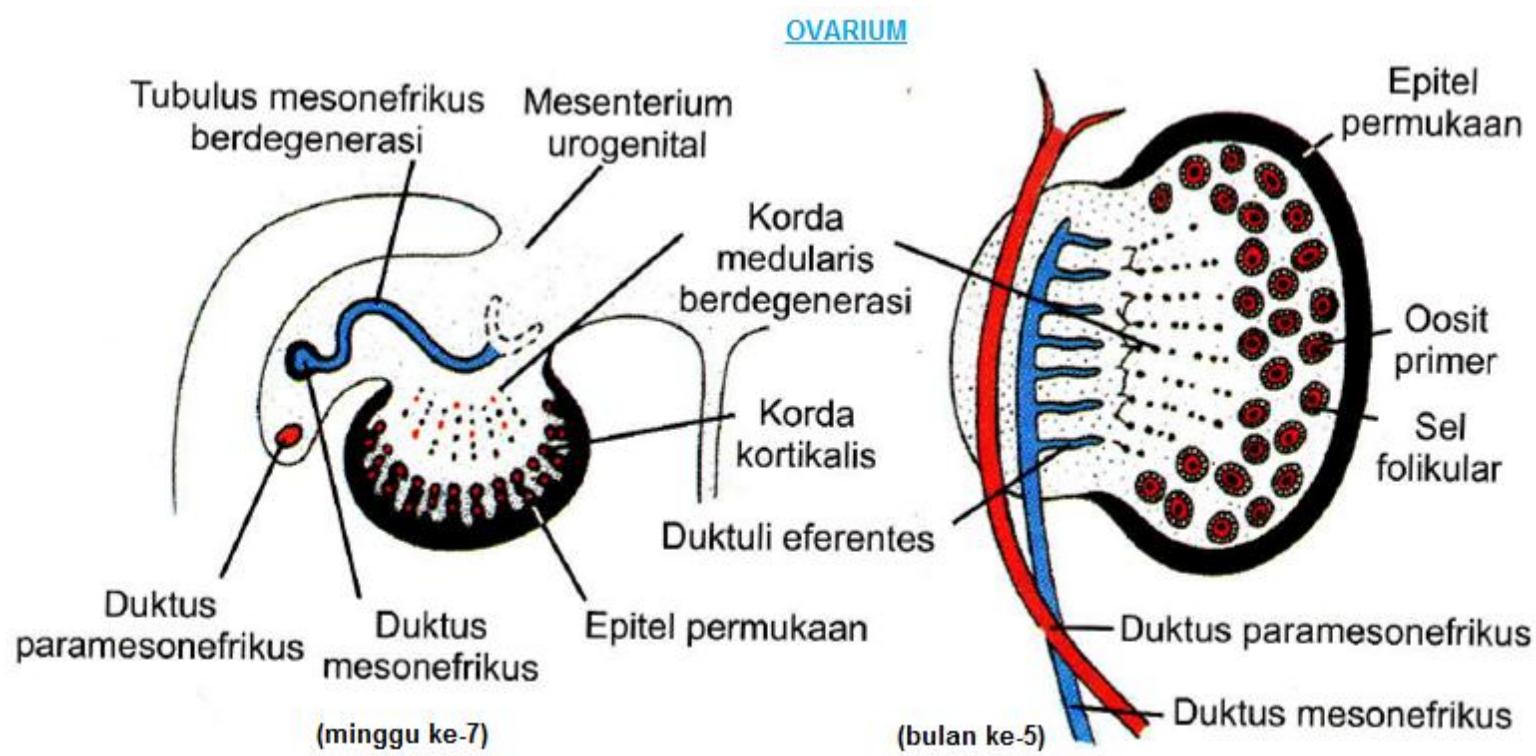
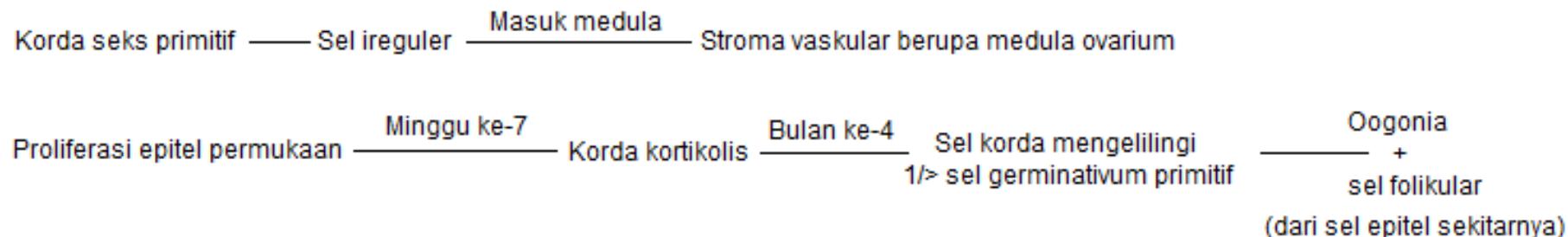
SRY : *sex-determining region on Y*

SF1 : *steroidogenesis factor*

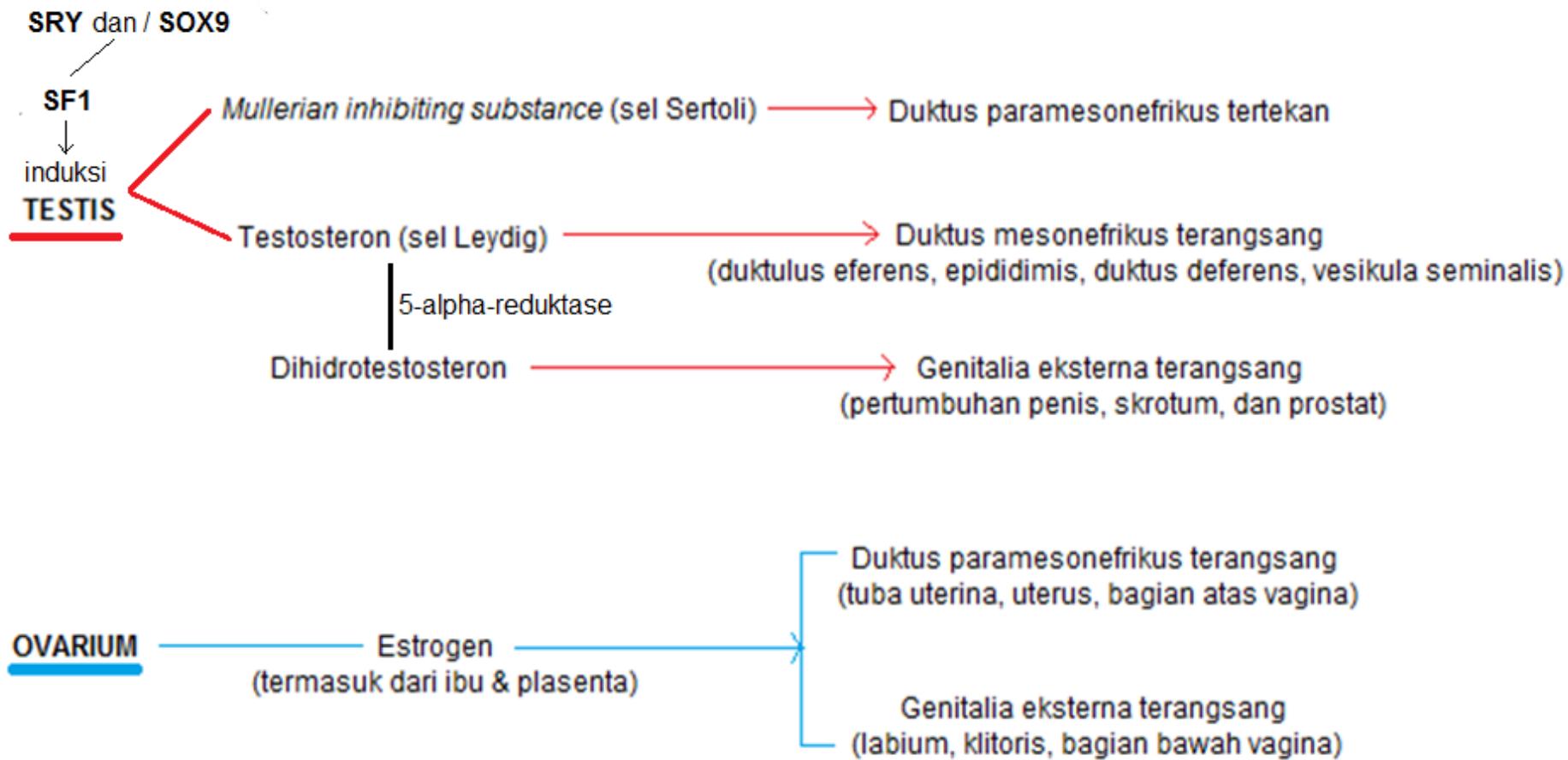


TESTIS





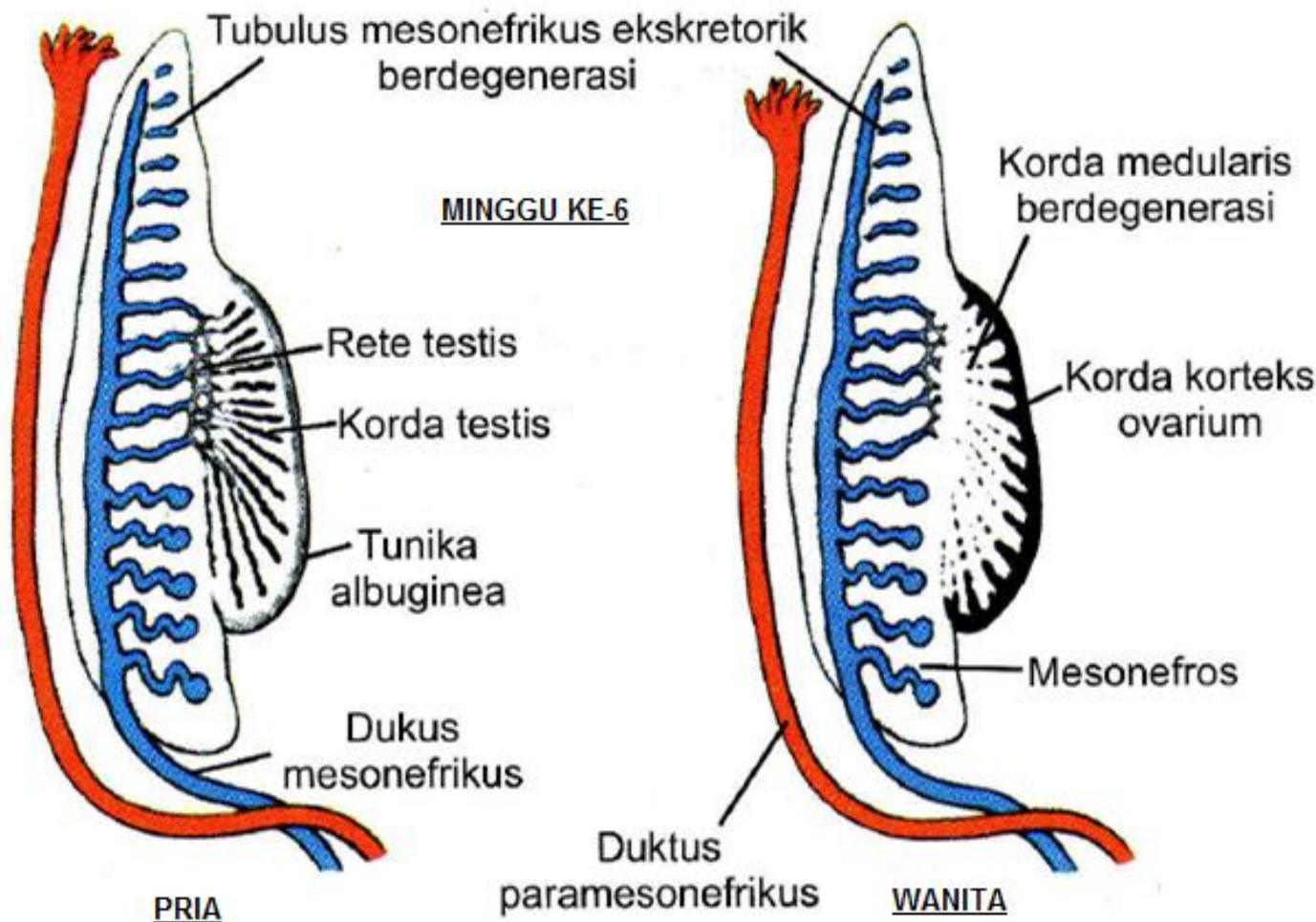
Regulasi Molekular Perkembangan Duktus Genitalis



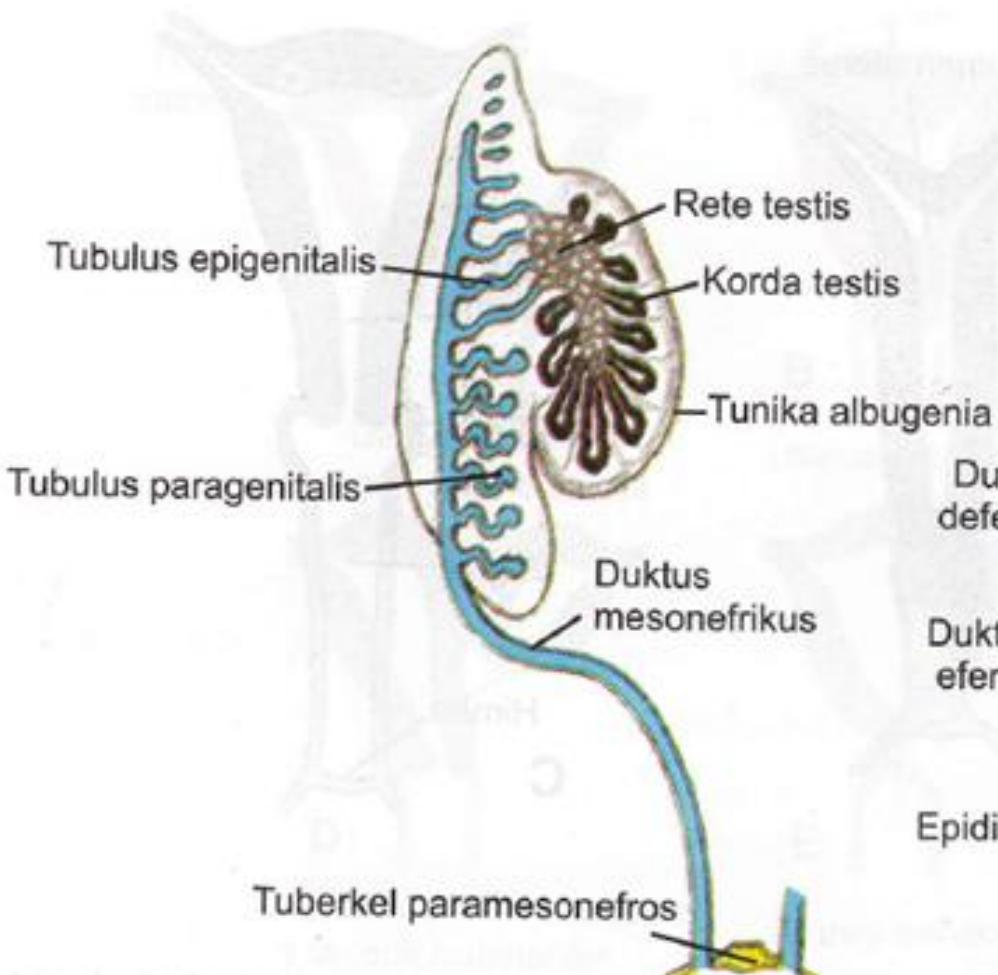
Asal duktus genitalis

- Duktus mesonefrikus (wolffii)
- Duktus para mesonefrikus (muller)

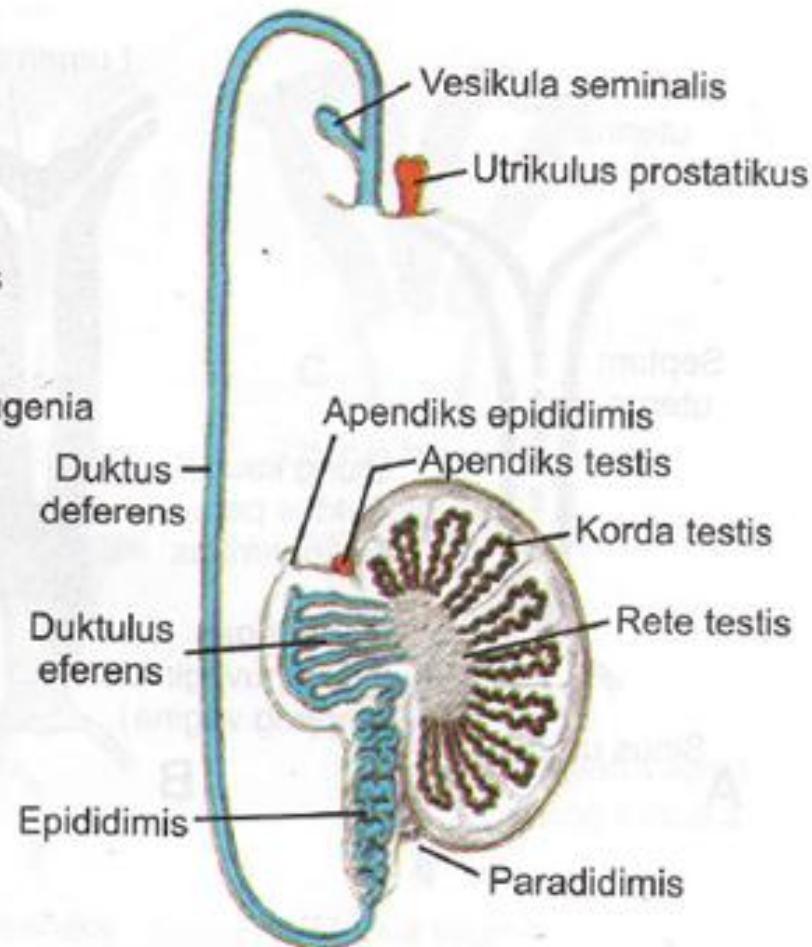
Asal: invaginasi longitudinal epitel permukaan anterolateral urogenital ridge



Diferensiasi Duktus Genitalis (PRIA)

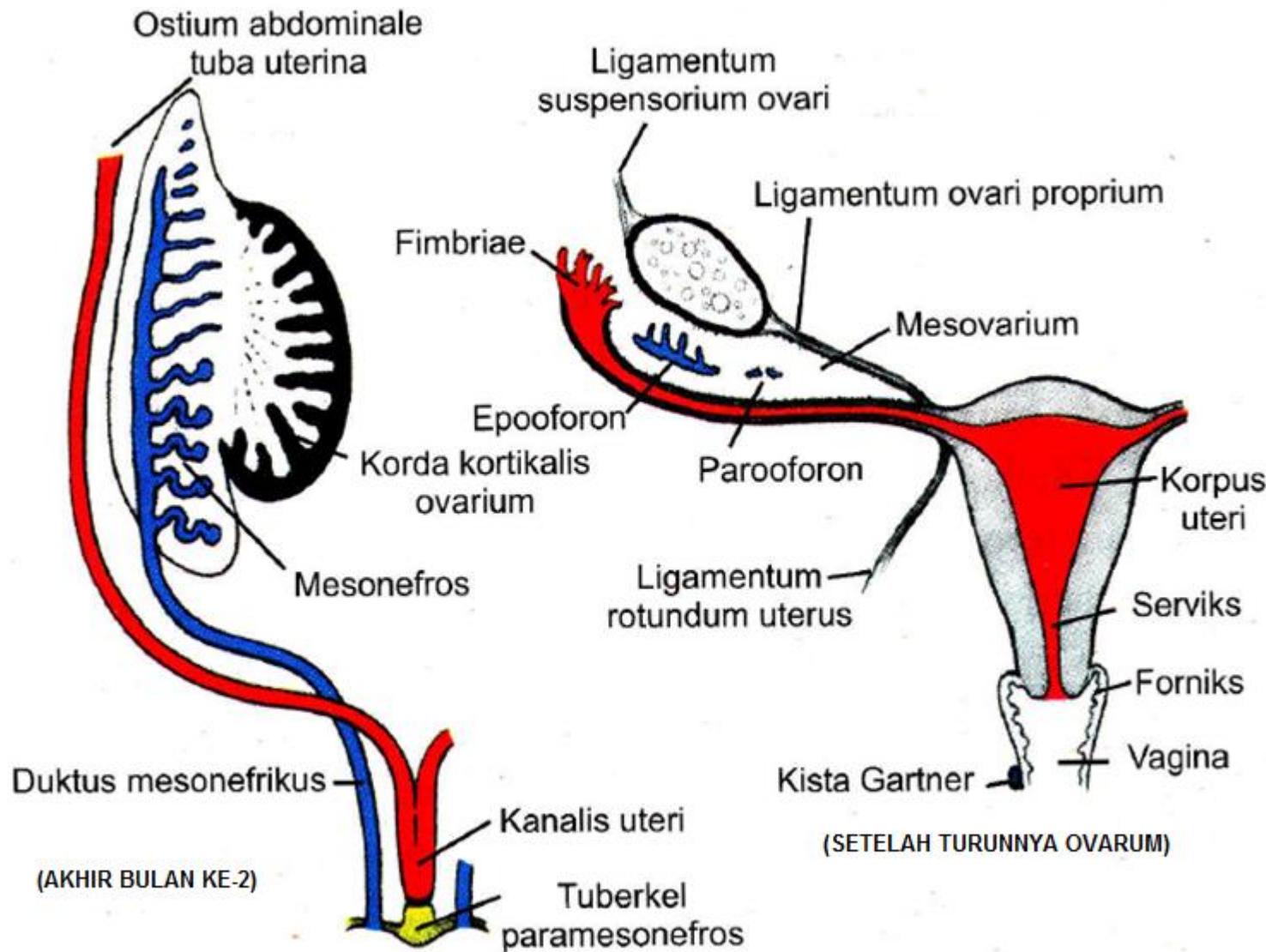


(BULAN KE-4)

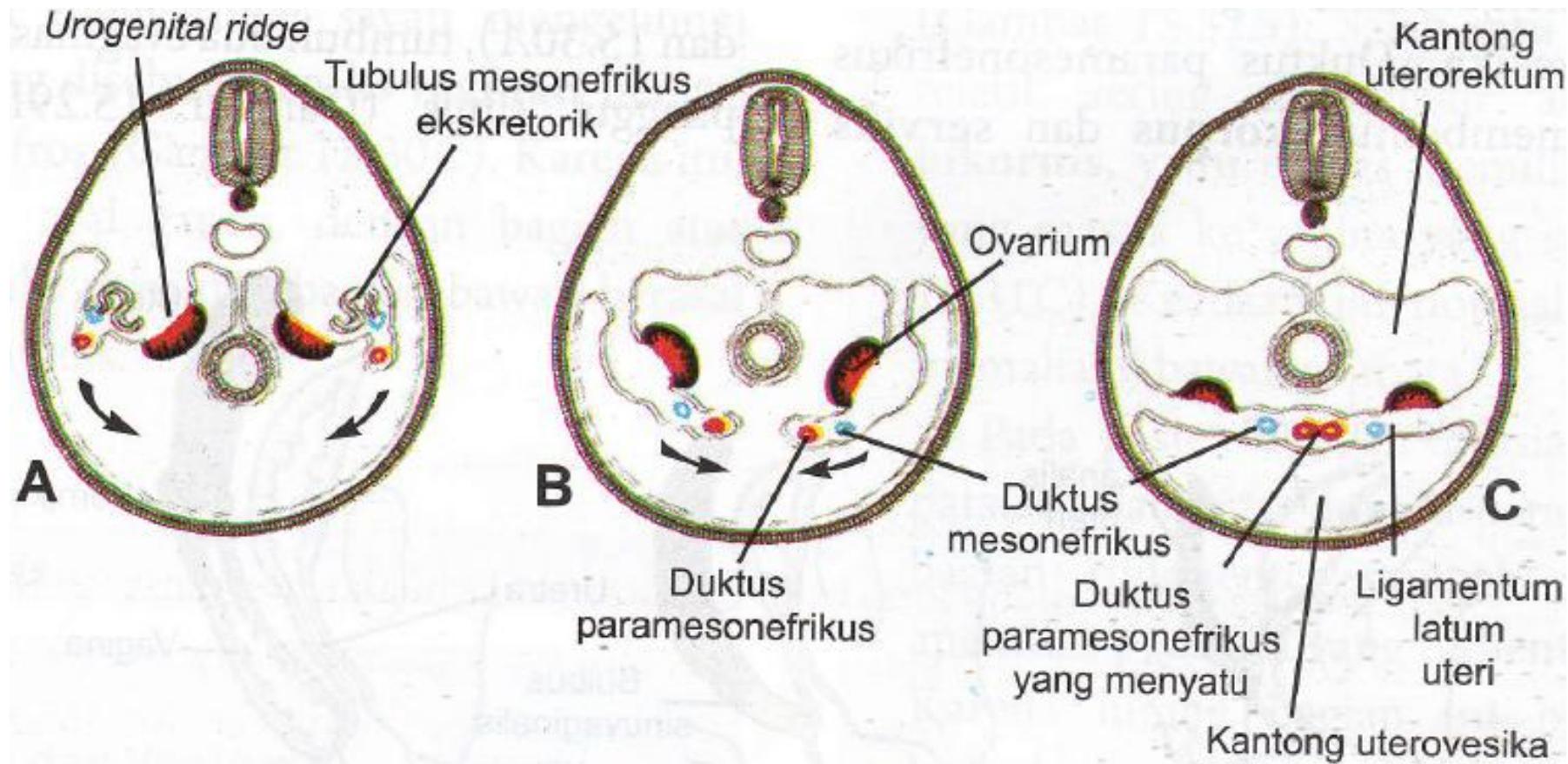


(SETELAH TURUNNYA TESTIS)

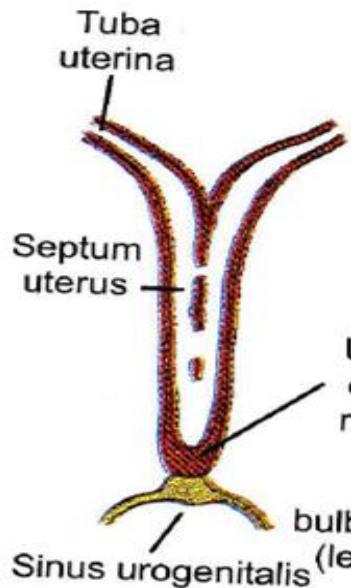
Diferensiasi Duktus Genitalis (WANITA)



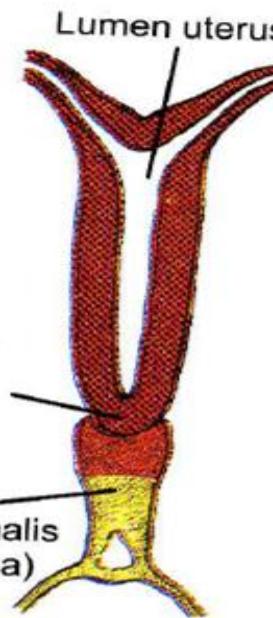
Perubahan Letak Gonad



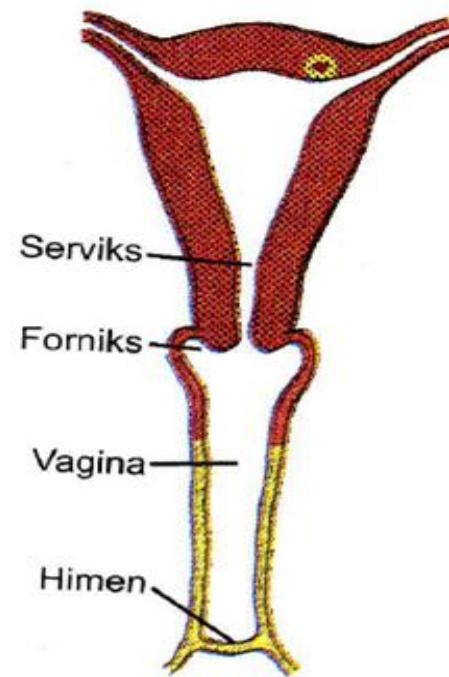
Pembentukan Uterus & Vagina



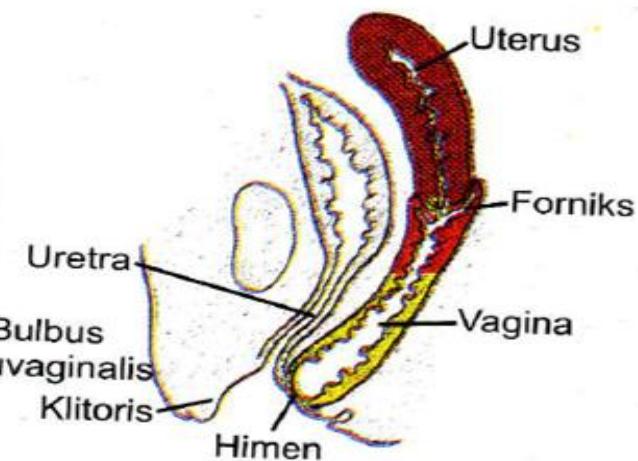
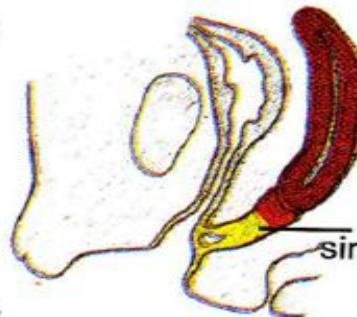
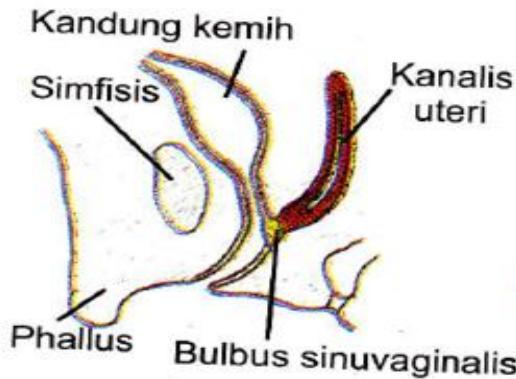
(MINGGU KE-9)



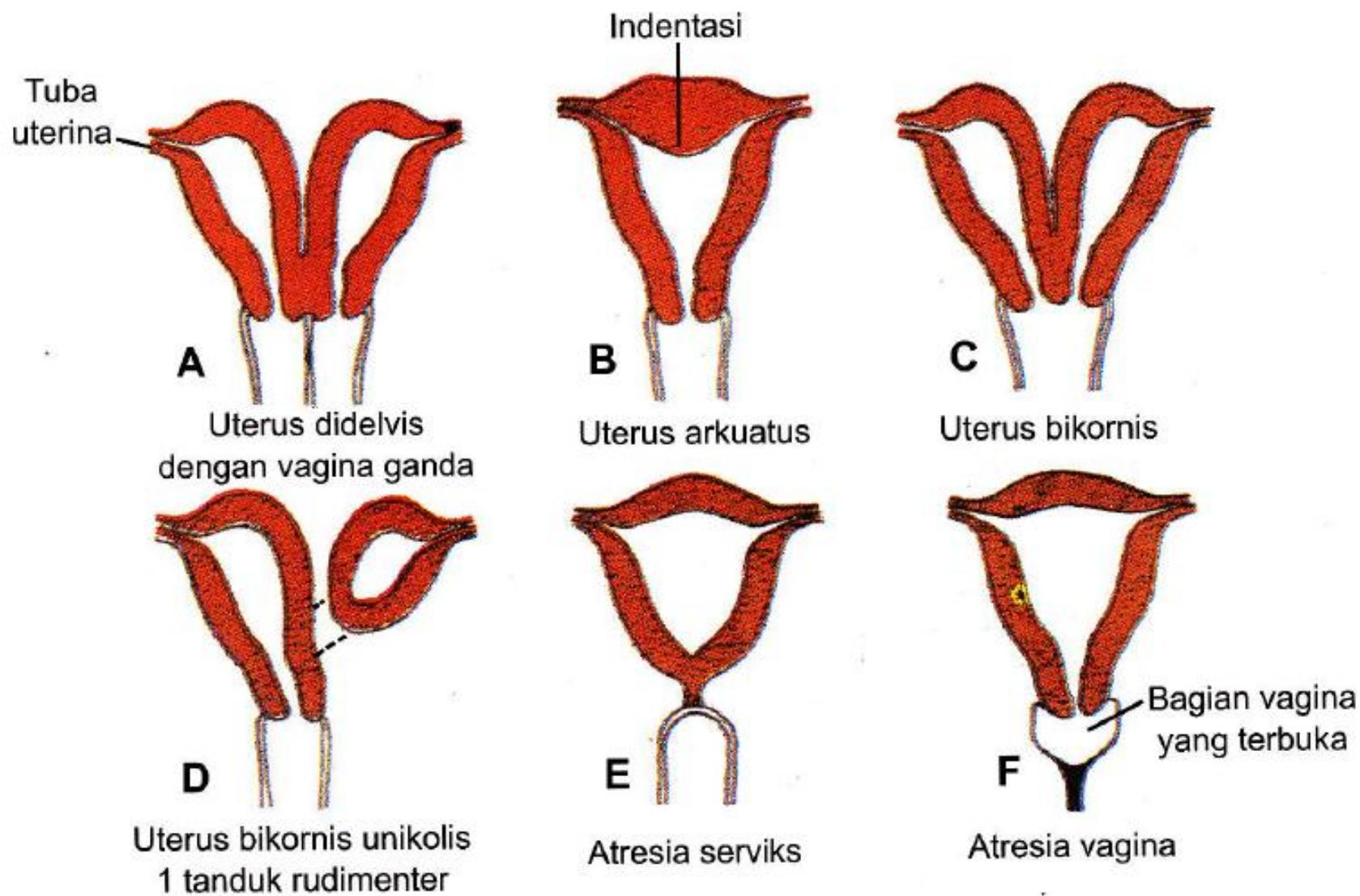
(AKHIR BULAN KE-3)



(BAYI BARU LAHIR)



Kelainan uterus dan vagina disebabkan oleh menetapnya septum uterus dan obliterasi lumen kanalis uteri



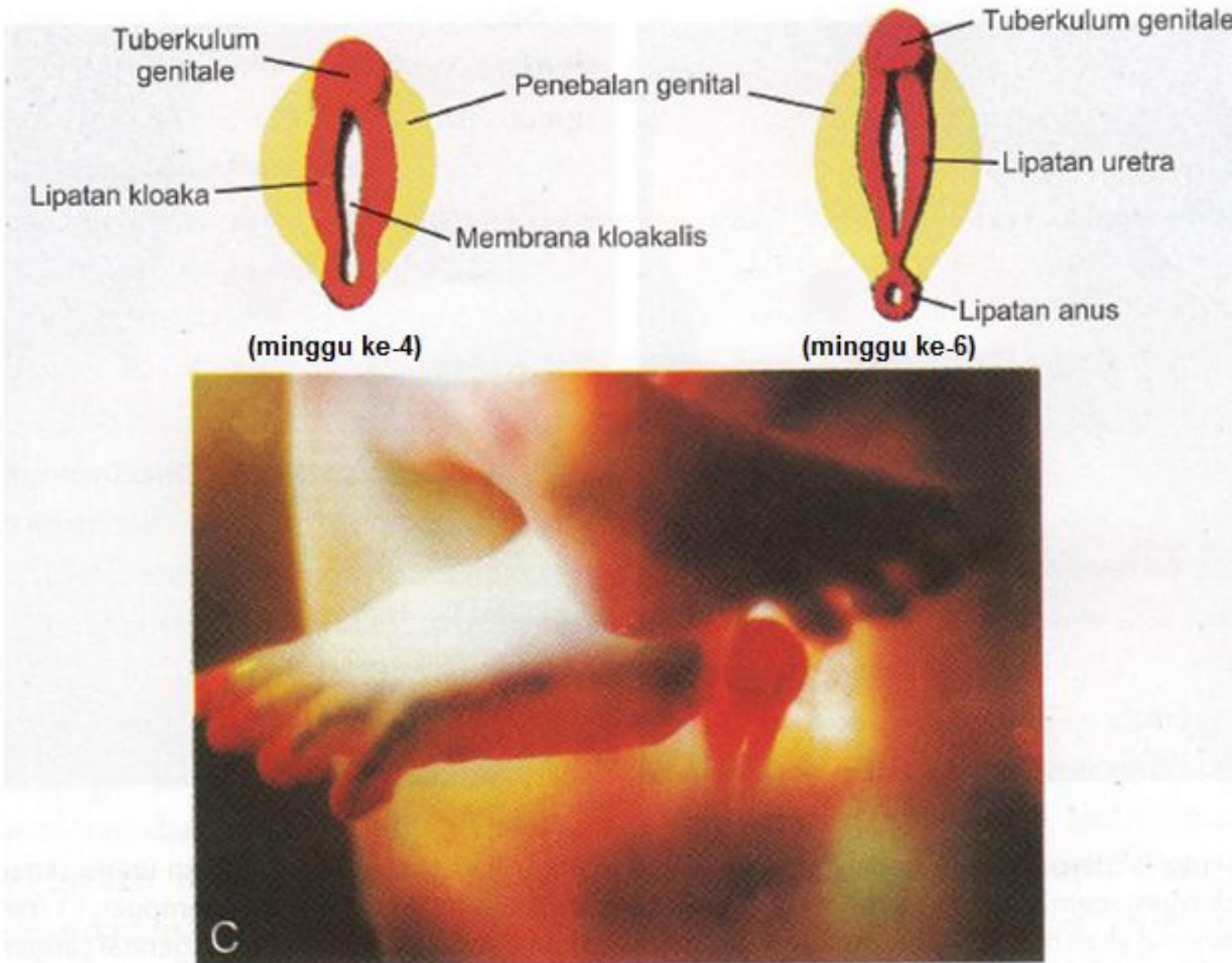
Genitalia Eksterna



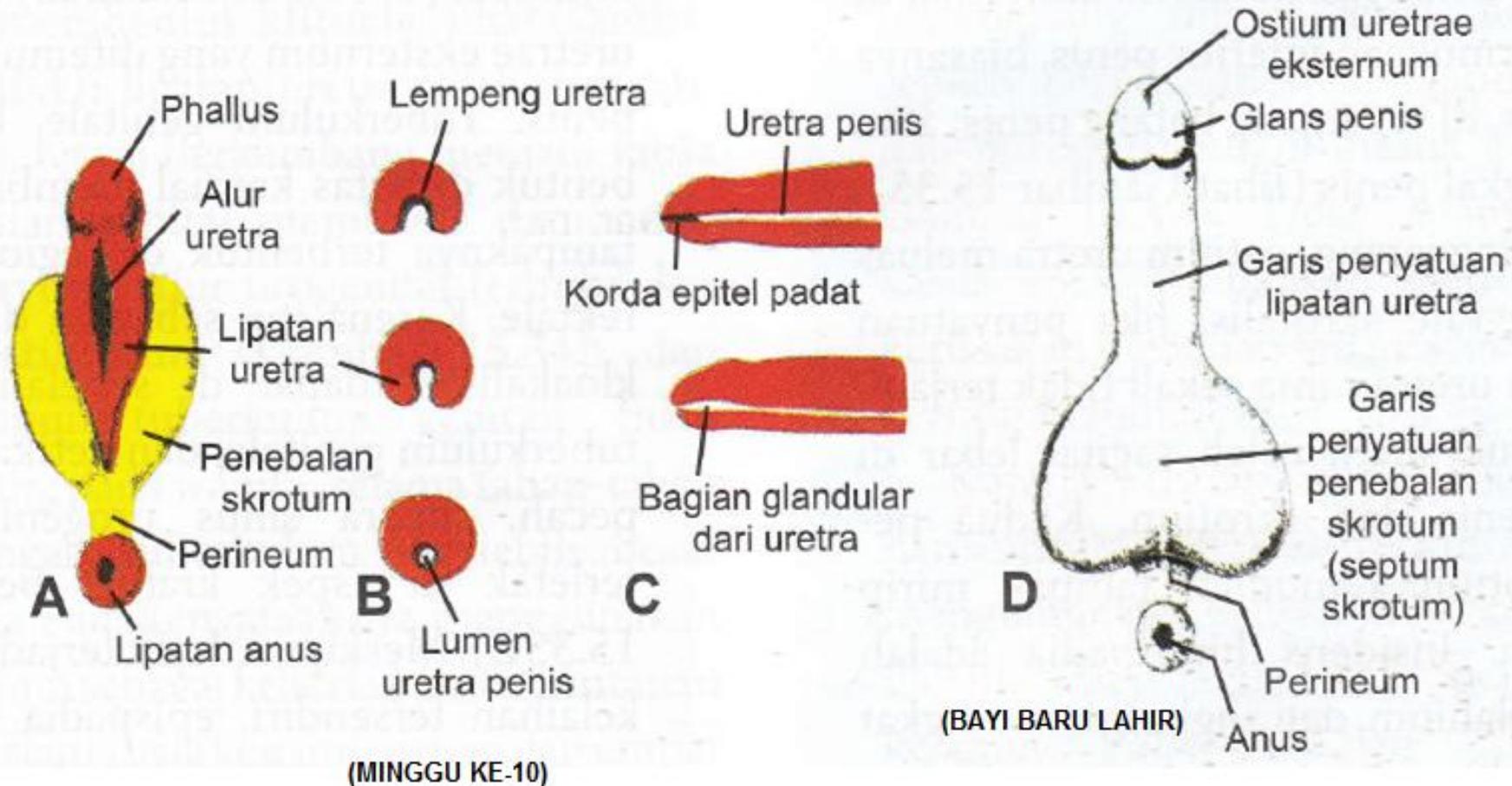
Stadium Indiferen

- Sel mesenkim *primitif streak* mengelilingi membrana kloakalis (minggu ke-3) → sepasang lipatan kloaka
- Kranial membrana kloaka → lipatan menyatu → tuberkulum genitale
- Kaudal membrana kloaka →:
 - anterior → lipatan uretra
 - posterior → lipatan anus
- Penebalan genital (genital swellings) kedua sisi lipatan uretra →:
 - pria → Skrotum
 - wanita → labia mayora

Stadium Indiferen Genitalia Eksterna

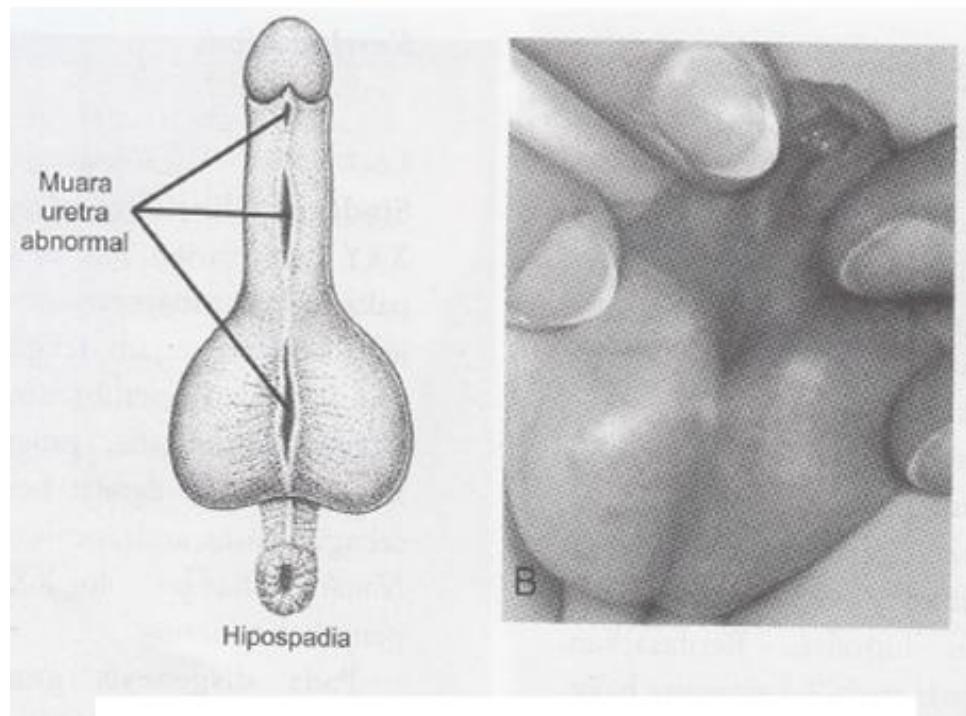


Perkembangan Genitalia Eksterna (PRIA)

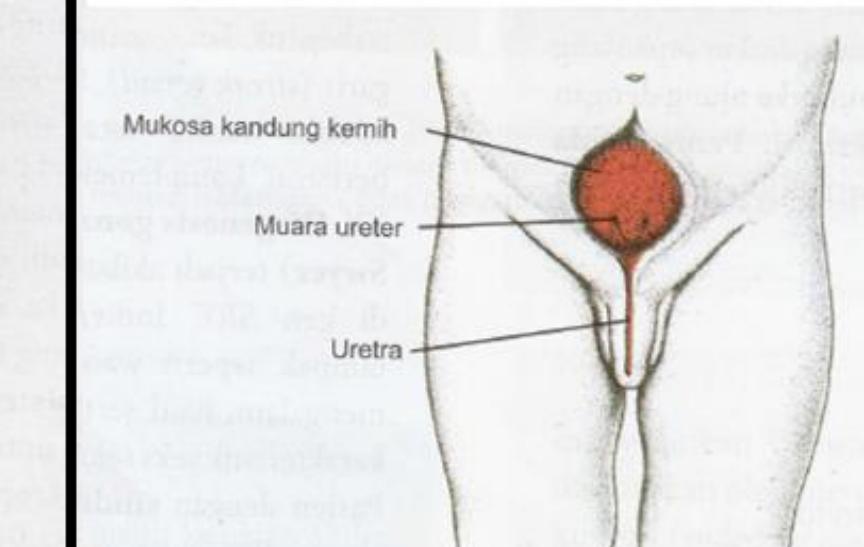


Kelainan Genitalia Eksterna Pria

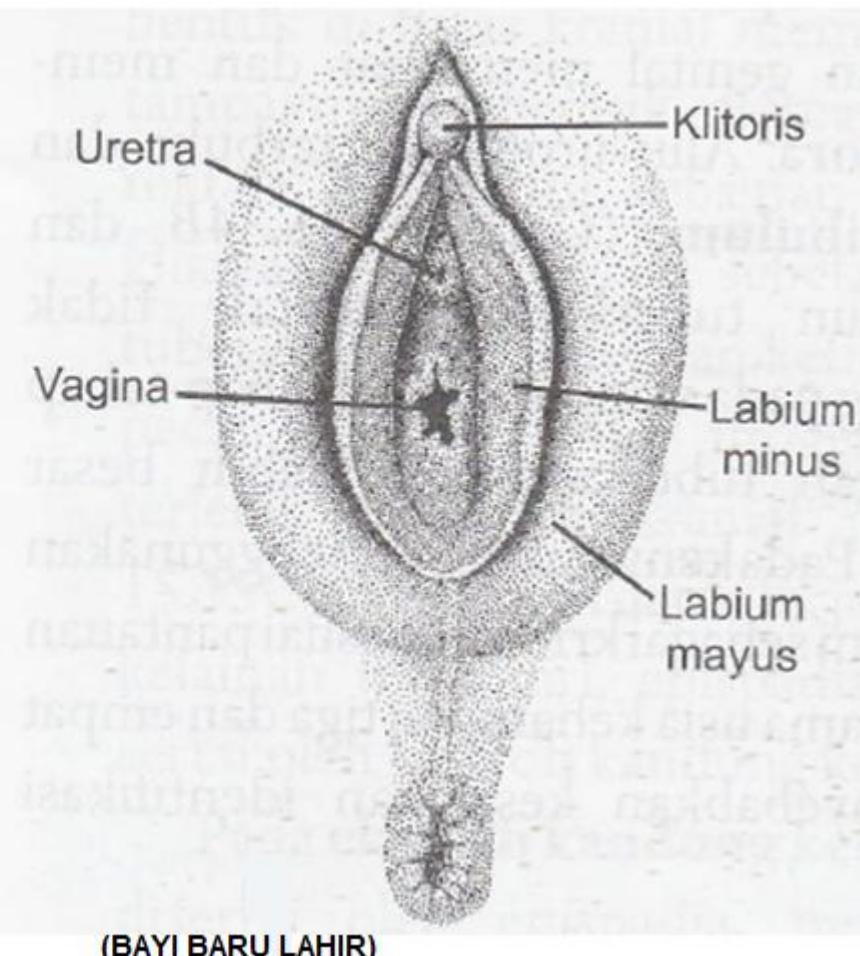
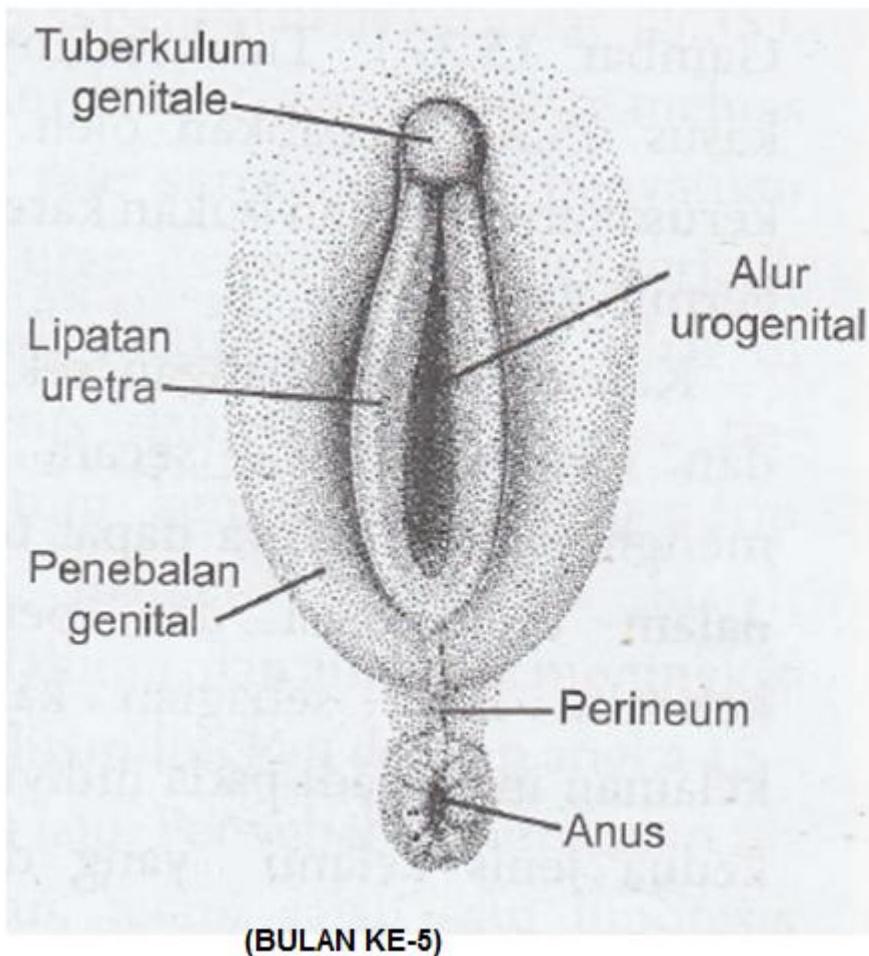
HIPOSPADIA



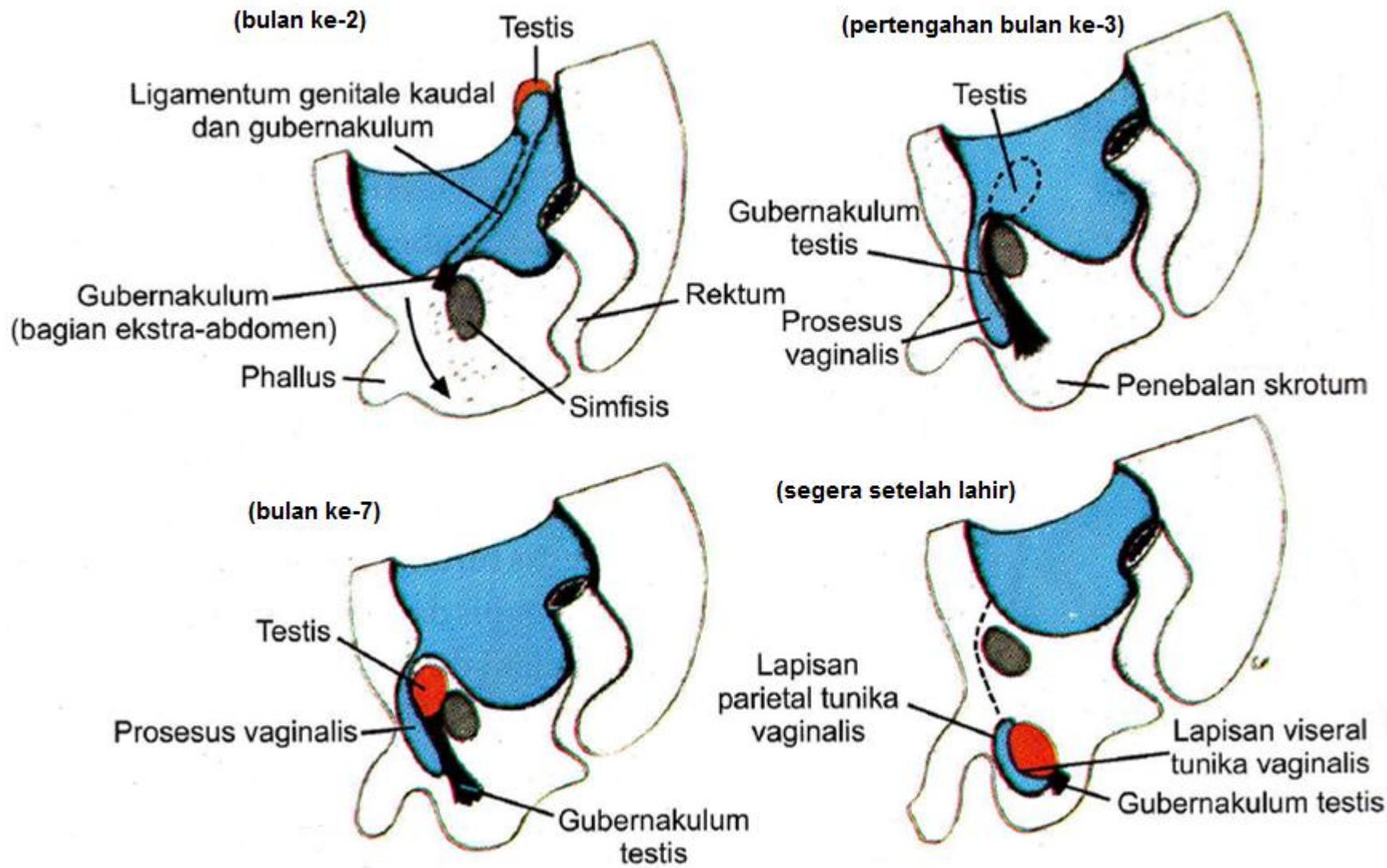
EPISPADIA & EKSTROFI KANDUNG KEMIH



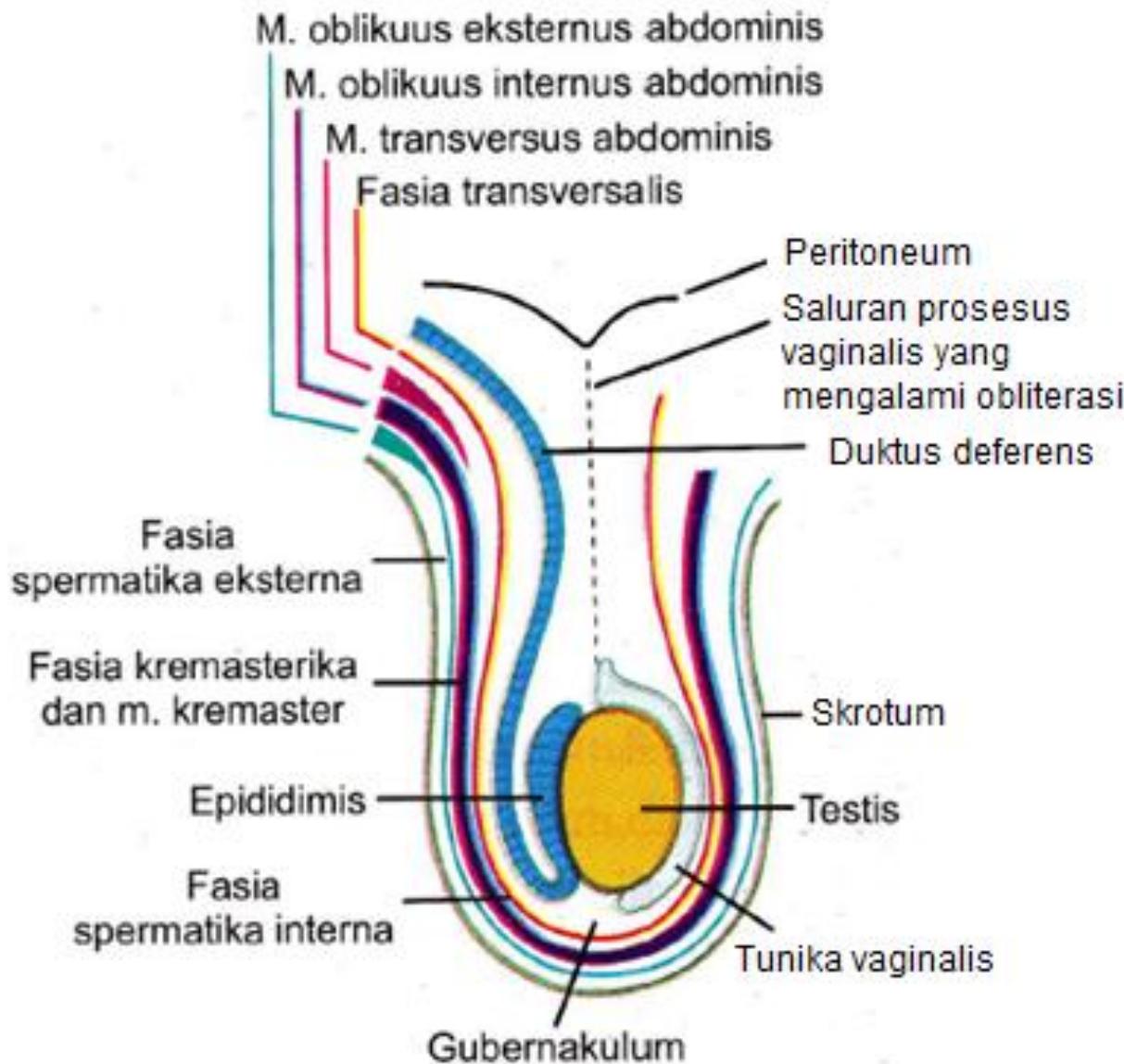
Perkembangan Genitalia Eksterna (WANITA)



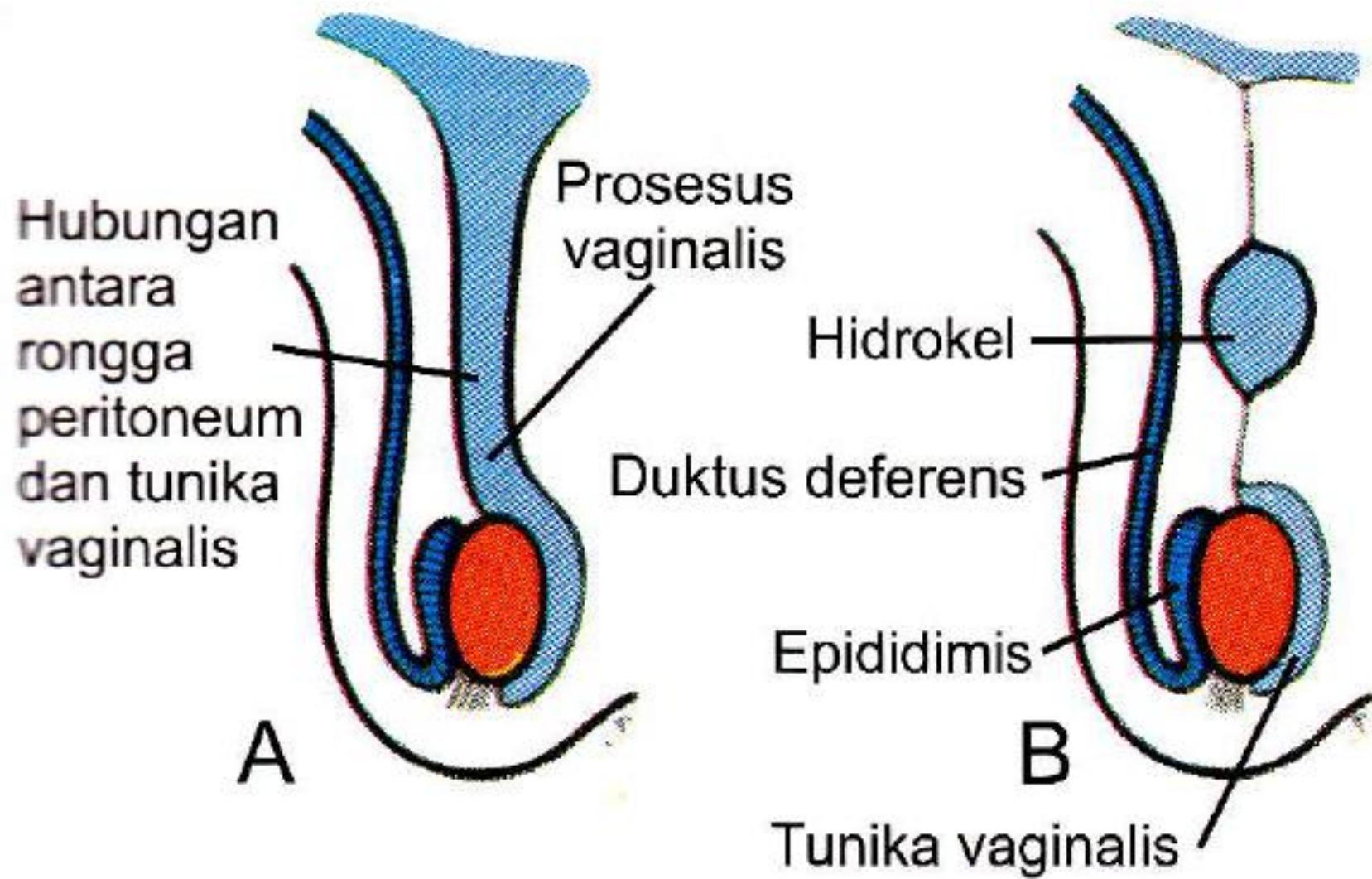
PENURUNAN TESTIS



Selubung Testis & Skrotum



Kelainan Lapisan Sekitar Testis



TERIMA KASIH