

FEMALE UG SYSTEM

Female reproductive system overview

1. produce eggs (ova)
2. secrete female sex hormone - *estrogen*
3. receive sperm - internal development
4. provide sustenance for newborn

Ovaries

1. paired reproductive organs that produce
 - a. gametes (oogenesis) - 400,000 remain @ puberty
 - b. female hormone (estrogen)
2. oblong shape: 3x2x1 cm
3. located 'near' opening of uterine tube

Uterine tubes (oviducts)

1. function - carry eggs/zygotes from ovary to uterus
 - location of "most" fertilization events
2. lined with **CILIATED** columnar epithelium
3. three parts:
 - a. **infundibulum**: conical expansion (w/ fimbriae)
 - b. **ampulla**: intermediate portion of oviduct
 - c. **isthmus**: uterine part of oviduct, uterine orifice

Problem: gap between the ovary & oviduct

Importance? connects UG tract to peritoneal cavity!

1. passageway for infections into/out of peritoneal cavity
2. ectopic pregnancies: 1/250
 - a. zygote passes incorrectly into peritoneal cavity
 - b. attach to capillary bed, rupture and hemorrhage
 - c. life-threatening for mother and dooms the embryo

Uterus

1. structure
 - a. pear-shaped organ: body with fundus (free-end)
 - b. highly vascular
 - c. high degree of variability in vagina:uterine alignment
2. located anterior to rectum, superior to bladder
3. muscular wall has three layers:
 - a. inner (mucosa) - **endometrium**
 - wall thickness varies throughout menstrual cycle
 - implantation, placenta formation, fetal development
 - b. middle (muscular) - **myometrium** (smooth muscle)
 - c. outer (serous) - **perimetrium** (visceral peritoneum)
4. muscular neck at base of uterus - **cervix**
 - a. cervical canal - typically blocked with mucous
 - b. cervix surrounded by the cervical fornix:
 - diaphragm:** ring fits into fornix, dome covers cervix
 - c. posterior region of fornix is very thin
 - prone to rupture, can open to peritoneal cavity

Vagina

1. Muscular canal 3.5" – 4.0" long (birth canal)
2. Located posterior to bladder, anterior to rectum
3. Cervix/cervical orifice at superior end
4. Vaginal wall is composed of several layers:
 - a. inner - (mucosa) stratified squamous epithelium
 - b. middle - (muscularis) longitudinal/circular muscles
 - c. outer - (fibrous) connection to other pelvic organs
5. Vaginal orifice in vestibule of the vulva
6. Orifice initially covered by thin membrane - hymen

Female external genitalia - Vulva

1. **Mons pubis** - adipose pad overlies pubic symphysis
2. **Labia (lips) majora**
 - a. paired fleshy masses of skin/glands
 - b. protects more delicate structures of vulva
3. **Labia minora**
 - medial to labia majora, smaller, vascular, distensible
4. **Clitoris** (glans)
 - a. homologue of the penis (hemotumescent = erectile)
 - b. glans clitoris has a small prepuce (hood)
 - c. crura is also erectile
5. **Vestibule** – anatomical gutter between labia minora
 - a. urethra does not perforate the glans (unlike males)
 - b. urethral orifice lies anterior to vaginal orifice
6. **Vestibular glands**
 - a. found in lateral walls of vestibule
 - b. prevents dehydration of vulva, lubricates vagina

Episiotomy

1. vaginal orifice diameter insufficient for neonate?
2. perineum must be cut surgically to enlarge the opening
3. controlled cut more easily repaired than random tear

Support for female reproductive tract

1. **Broad ligament** (paired):
 - suspends entire tract from body wall
 - a. mesometrium - mesentery of the uterus
 - b. mesosalpinx - mesentery of the uterine tubes
 - c. mesovarium - mesentery of the ovaries
2. **Round ligament** (paired)
 - a. binds uterus to anterior wall of pelvis
 - b. descends into the labia majora (*gubernaculum*)
3. **Suspensory ligament of the ovary** (paired)
 - a. ties ovary to pelvic wall
 - b. supports ovarian NAVL's
4. **Ovarian ligament** (paired):
 - binds ovary to uterine wall

Mammary glands

1. Exocrine glands
 - a. heavily modified sweat glands - 15-20 lobes
 - b. milk production = lactation
2. Breast mass:
 - a. intimately associated with skin - suspensory ligaments
 - b. poorly attached to chest wall - relatively mobile
3. Nipple
 - a. termination of glandular tissue mass at skin surface
 - b. areola - pigmented skin
 - c. sebaceous glands - (prevent dehydration)