

Female Reproductive System: You Need To Know

- I. Introduction: Principle Organs
 - A. Ovaries
 - B. Oviducts
 - C. Uterus
 - D. Vagina
 - E. External Genitalia

- II. Puberty in Females
 - A. Time
 - B. Changes
 - 1. Pelvis widens
 - 2. Selective fat deposition – hips, thighs, buttocks, breasts
 - 3. Hair growth – axillary, pubic
 - 4. Menstrual cycle initiated

- III. Ovaries
 - 1. Production of “ova”
 - 2. Production of estrogen and progesterone
 - 3. Location
 - 4. Attachment by broad ligament, round ligament

- IV. Oviducts, uterine tubes, Fallopian tubes
 - 1. Muscular ducts lined with ciliated columnar epithelium
 - 2. 4 inches long
 - 3. Dilated end – ampulla
 - 4. Fimbriae – location and function
 - 5. Oviduct function
 - 6. Ectopic tubal pregnancy
 - 7. Ectopic abdominal pregnancy

- V. Uterus
 - A. Structure
 - 1. Thick walled hollow muscular structure
 - 2. Length – 3 inches in non-pregnant female
 - 3. Location – anterior to rectum; posterior to bladder
 - 4. Fundus, body, cervix
 - 5. Myometrium important in expulsion of fetus during labor
 - 6. Influence of oxytocin
 - B. Sectioned Uterus and Layers
 - 1. Serous membrane
 - 2. Myometrium – muscle layer of uterus, three ill-defined layers of circular, longitudinal, and spiral muscle
 - 3. Endometrium – inner layer of mucous membrane, highly vascular

- C. Changes in endometrium during the menstrual cycle
1. Follicular phase of growth phase concurrent with growth of primary, secondary, and Graafian follicles, growth is stimulated by estrogens, rapid growth of endometrial tissues occur
 2. Luteal phase or secretory phase concurrent with active corpus luteum growth is stimulated by progesterone and estrogen, continued growth of endometrium plus enlargement of spiral arteries and endometrial glands
 3. Ischemic phase – endometrium becomes necrotic, corpus luteum has involuted
 4. Menstrual stage – sloughing off of necrotic endometrium

VI. Vagina

1. Fibromuscular tube 3-4 inches long
2. Anterior to rectum and posterior to bladder and urethra
3. Female organ of copulation
4. Sight of deposition of semen
5. Birth canal
6. Fornices – (2 longitudinal and 2 transverse)
7. pH 4-6 inhibits most microbial growth; low pH is created by lactobacillus
8. Hymen – vascularized mucus membrane which may partially occlude vaginal orifice in virginal females

VII. Histology of the Ovary

- A. Primary Follicles
1. 20,000 – 250,000 in ovary at birth
 2. During a female's reproductive years only 300-500 reach maturity
 3. Every 28 days numerous primary follicles initiate development towards secondary follicles. This development is regulated by FSH from the anterior pituitary gland.
- B. Secondary Follicles
- C. Maturation of Graafian Follicles
1. Follicular cells
 2. Secondary oocyte
 3. Follicular fluid
- D. Ovulation
- E. Corpus Luteum, theca interna (estrogen and progesterones), theca externa
- F. Corpus Luteum of pregnancy – function for first three months and its function is then taken over by placenta
- G. Corpus Albicans – white scar

VIII. Draw Location

- Ovaries
- Oviducts
- Uterus

IX. Development of Haploid Ova

Time	Name	Structure	Chromosome#
Intrauterine 2-4 months	Oogonia	Primitive female cells From epidermis of ovary	46
Intrauterine 4-7 months	Primary Oocyte	Enters prophase I of Meiosis	46
Birth	Primary Oocyte	Completed prophase I of Meiosis	46
Resting Stage Until Sexual Maturity			
Follicular Development	Secondary Oocyte	Meiosis completed in Mature follicle	23
Ovulation	Secondary Oocyte	Meiosis II initiated but Stops at metaphase II	23
Fertilization	“Ovum”	Meiosis II completed	23 + sperm “23”

X. External Genitalia

1. Mons Pubis – fat pad anterior to pubic symphysis

Function:

2. Labia Majora – homologue of scrotum, pigmented after puberty, prominent folds
3. Labia Minora – more medial folds, thinner than labia major
4. Clitoris – homologue of penis, prepuce, cavernous erectile tissue
5. Greater Vestibular Glands – opening lateral to vagina, site of gonococcal infection
6. Perineum