

Structured Notes According to GYNAECOLOGY & OBSTETRICS

Revision friendly **Fully Colored Book/Structured Notes**

For Best results, watch the video lectures along with reading notes



© Dr. Prassan Vij
(Author)

All rights reserved of these books are reserved under Indian Copyright Act, 1956. No part of this publication may be reproduced stored in a retrieval system or transmitted, In any form or by any means, electrical, chemical, mechanical, optical, photocopying, recording or otherwise, without the prior permission of the copyright owners.

Photocopying the whole book/uploading PDFs or images of the book without the due permission of the copyright owner is punishable under the copyright act as it weighs against the fair use policy because completely copying and distributing the work for free online and physically would hinder the economic viability of creating and maintaining the source.

Any person/ organization found doing photocopy/PDF circulation will face, strict legal actions without any prior notice.

For best result you are advised to study these books/structured notes along with Dr. Prassan Vij's videos on PrepLadder app. For maximum gain, revision of these books/structured notes/books is being done multiple times. At the time of examination, going through- structured Notes is advisable rather than reading any reference book.

In case of any discrepancy between book and videos, Dr. Prassan Vij's videos on PrepLadder should be considered.

The copyright of "**Gynaecology & Obstetrics Notes by Dr. Prassan Vij**" belongs to the author and any attempt to reproduce or replicate it in any form will result in a legal action without prior warning.

"The content, information provided herein are as provided and shared by the Author and have been produced on as-is basis. The Company disclaims all rights and liabilities in relation to the accuracy or correctness of the content, images or the information provided. The Author is solely responsible for, including without limitation, any claims, liabilities, damages, losses or suits that may arise with respect to the information provided herein

CONTENTS



GYNAECOLOGY & OBSTETRICS

UNIT 1 - GYNECOLOGY

1.	Menstrual Physiology Part-1	8
2.	Menstrual Physiology Part-2	13
3.	Ovarian Hyperstimulation Syndrome	20
4.	Tests of Ovulation	23
5.	Endometriosis	25
6.	Hormonal Replacement Therapy	31
7.	Ovarian Tumors	37
8.	Polycystic Ovarian Syndrome	47
9.	Cervical Carcinoma	54
10.	Post Menopausal Bleeding	67
11.	Vulvar Carcinoma	68
12.	Fibroids	72
13.	Pubertal Changes	79
14.	Contraception	85
15.	Gametogenesis	99
16.	Mullerian Abnormalities	103
17.	Abnormal Uterine Bleeding	109
18.	Intersex	114
19.	Infertility	121
20.	Urinary Fistula	133
21.	Emergency Contraceptives	137
22.	Asherman Syndrome	140
23.	Amenorrhea	143
24.	Adenomyosis	147
25.	Pelvic Inflammatory Disease Tubercular (PID)	149
26.	Endometrial Carcinoma	157

UNIT 2 - OBSTETRICS

27.	Post Partum Hemorrhage (PPH)	178
28.	Placenta : Separation and Complications	185
29.	Placenta and Cord	189

30.	Rh Isoimmunization	193
31.	Twin Pregnancy	199
32.	Molar Pregnancy and Gestational Trophoblastic Disease	207
33.	Antepartum Haemorrhage	214
34.	Pregnancy Induced Hypertension	219
35.	Gestational Diabetes Mellitus	130
36.	Growth Restriction	135
37.	Basic Labour Definitions and Cardinal Movements	139
38.	Medical Illness Complicating Pregnancy And Covid	145
39.	Parturition Stages of Labour Partogram	251
40.	Fetal Skull Maternal Pelvis and Important Dimensions	259
41.	Malpositions and Malpresentations	263
42.	Instrumental Delivery	271
43.	Induction of Labour	274
44.	Episiotomy and Perineal Tears	279
45.	Puerperium	283
46.	Cesarean Section	289
47.	Infections in Pregnancy	296
48.	Ectopic Pregnancy	310
49.	Drugs in Pregnancy	315
50.	Anaemia in Pregnancy	219
51.	Vomiting in Pregnancy	322
52.	Abortions	325
53.	Physiological Changes in Pregnancy	339
54.	Diagnosis of Pregnancy	346
55.	Prenatal Diagnosis	349
56.	Preterm Labour	356
57.	PNDT Act	364
58.	Fetal Circulation	368
59.	Fetal Surveillance	371
60.	Amniotic Fluid Dynamics	380
61.	Sterilization Surgeries : Tubectomy and Vasectomy	385
62.	Special Cases in Obstetrics	390
63.	Liver diseases in Pregnancy	397
64.	Tuberculosis in Pregnancy	403
65.	Antenatal Care	406

UNIT 3 - DRUGS USED IN OBSTETRICS AND GYNAECOLOGY

66. Drugs used in Obstetrics and Gynaecology	419
---	------------

UNIT 4 - INSTRUMENTS

67. Instruments	249
------------------------	------------

Previous Year Questions	443
--------------------------------	------------

Chanting Lines	445
-----------------------	------------



Menstrual Physiology Part-1

1. Ovulation
 - 1.1 Dysmenorrhea
 - 1.2 Treatment of Dysmenorrhea

Menstrual Physiology Part-2

1. Primordial Follicles
 - 1.1 Oocyte
 - 1.2 Ovarian Reserve
 - 1.3 Menstrual Cycle
 - 1.4 In Vitro Fertilisation

Must Know

Must Know

Ovarian Hyperstimulation Syndrome

1. Idea of IVF
 - 1.1 Increase in vascular permeability means
 - 1.2 Types of OHSS

1.3 Predisposing Factors

Must Know

1.4 Classification

Good to Know

1.5 Treatment of OHSS

Good to Know

Tests of Ovulation

1. Tests of ovulation

Endometriosis

1. Endometriosis
 - 1.1 Etiology: Retrograde Menstruation
 - 1.2 Age of Presentation
 - 1.3 Associations of Endometriosis
 - 1.4 Sites of Presentation
 - 1.5 Pathology
 - 1.6 Symptoms of Endometriosis
 - 1.7 Findings on Genital Examination

Good to Know

Must Know

Good to Know

Good to Know

1.8 Diagnosis

Must Know

1.9 Revised American Society for Reproductive Medicine (ASRM) Staging System

1.10 Treatment

Must Know

1.11 Medical Management

Hormonal Replacement Therapy

1. Menopause

1.1 Features at Menopause

1.2 Features at Menopause due to lack of estrogen

Must Know

2. Hormone Replacement Therapy

Must Know

2.1 Contraindications to HRT

2.2 Treatment of Hot Flashes

2.3 Role in Coronary Artery Disease

2.4 Role of HRT in Vaginal Atrophy

Ovarian Tumors

1. Normal Ovary

2. Ovarian Surface Epithelial Cancers

Good to Know

2.1 Presentation

2.2 Diagnosis

2.3 Risk of Malignancy Index (RMI)

2.4 Treatment

2.5 Ovarian Cancer Staging – FIGO Staging

2.6 Chemotherapy

2.7 Radiotherapy

2.8 Guidelines: Management of Ovarian Cancer

Must Know

2.9 Types of Epithelial Ovarian Tumors

3. Borderline Epithelial Ovarian Tumors

4. Germ Cells Tumors

4.1 Dysgerminoma

4.2 Yolk Sac/ Endodermal Sinus Tumor & Embryonal Tumors Common Features

5. Sex Cord Tumors

Good to Know

6. Hirsutism

7. Non-Neoplastic Ovarian Cysts

8. Krukenberg Tumor

9. Ovarian Tumor Markers

Polycystic Ovarian Syndrome

1. POLYCYSTIC OVARIAN SYNDROME

2. Normal ovary	Must Know
2.1 Diagnosis	Good to Know
2.2 Phenotypes	
2.3 Syndrome	Must Know
2.4 Treatment	Must Know

Cervical Carcinoma

1. Cervical Carcinoma

1.1 Etiology and risk factors	Must Know
1.2 HPV Vaccines	Must Know
1.3 Cervical Dysplasia	Good to Know
1.4 Symptoms of CA Cervix	
1.5 Staging	Good to Know
1.6 Treatment protocol	
1.7 Management of Ca cervix	Must Know

Post Menopausal Bleeding

1. Post Menopausal Bleeding	Good to Know
------------------------------------	---------------------

Vulvar Carcinoma

1. Vulvar Cancer	Good to Know
1.1 Types of Ca Vulva	Must Know
1.2 Sites	
1.3 Presentation	Good to Know
1.4 Diagnosis	
1.5 Lymphatic Drainage of Vulva	Must Know
1.6 Staging	
1.7 Treatment	
1.8 Prognosis: 5-year survival	

Fibroids

1. Fibroids	Must Know
1.1 Etiology and risk factors	
1.2 Pathology	

- 1.3 Morphology of Fibroids
- 1.4 Pathological Classification of Fibroids

1.5 FIGO Classification **Must Know**

2. Broad Ligament Fibroids **Good to Know**

- 2.1 Symptoms
- 2.2 Diagnosis

2.3 Principles of Treatment **Must Know**

Pubertal Changes

- 1. Puberty changes depend upon
 - 1.1 Puberty Changes
 - 1.2 Recall
 - 1.3 Specific events of Puberty in boys

1.4 Influences on puberty **Good to Know**

Contraception

- 1. Medical Eligibility Criteria
- 2. Failure Rates
- 3. Hormonal Contraception

3.1 Combined Oral Contraceptive Pills (COCP) **Must Know**

3.2 Minipill/ Progesterone Only Pill (POP) **Must Know**

3.3 Saheli (Centchroman)

- 4. IUCD (Intra Uterine Contraceptive Devices)

4.1 Copper Devices / 2 Generation IUCDs / CU 380 A **Good to Know**

4.2 Hormone Containing IUCDs / 3 Generation IUCDs **Must Know**

- 5. Implants
- 6. Nuva Ring / Vaginal Ring
- 7. Sponge / Today
- 8. Injectable Progesterone
- 9. Barrier Contraceptives

9.1 Condoms **Good to Know**

9.2 Diaphragm / Dutch Cap **Good to Know**

9.3 EVRA Patch

- 10. Natural Methods of Preventing Pregnancies
- 11. Long Acting Reversible Contraceptives (LARC)
- 12. Contraception in Special Situations
- 13. Post Placental IUCD

Gametogenesis

1. Sperm Pathway
 - 1.1 Maturation of Spermatids
 - 1.2 Oogenesis

Mullerian Abnormalities

1. Mullerian Defects
2. Formation of Internal Genitalia
3. **Female Genital Tract Development and the fate of the male duct in the female system** **Must Know**
4. Mullerian Duct Anomalies
 - 4.1 **Cryptomenorrhea** **Must Know**
 - 4.2 ESHRE Classification

Abnormal Uterine Bleeding

1. Normal patterns of bleeding
 - 1.1 **Other patterns of bleeding** **Good to Know**
2. **Causes of abnormal uterine bleed** **Good to Know**
 - 2.1 PALM-COEIN Classification
 - 2.2 **DUB (Dysfunctional Uterine Bleeding)** **Good to Know**
 - 2.3 **Management of Abnormal Uterine Bleeding** **Good to Know**
 - 2.4 **Surgical Management** **Must Know**

Intersex

1. **Formation of Human Sex** **Good to Know**
2. **Mullerian Agenesis and Testicular Feminization Syndrome** **Good to Know**
3. Adrenal steroidogenesis
4. Congenital Adrenal Hyperplasia (CAH)
5. Hermaphroditism
6. **Gonadal Dysgenesis** **Must Know**

Infertility

1. **Infertility** **Must Know**
 - 1.1 **Investigation** **Must Know**
 - 1.2 Intrauterine Insemination
 - 1.3 In Vitro Fertilisation
 - 1.4 Intra cytoplasmic sperm injection (ICSI)

1.5 Azoospermia

Good to Know

1.6 Sperm Extraction Techniques

1.7 Events of fertilisation

Urinary Fistula

1. Types of Urinary Fistulas

2. Sites of Ureteric Injury

Must Know

2.1 Presentation

2.2 Treatment

2.3 Diagnosis

Must Know

Emergency Contraceptives

1. Interception / Emergency Contraception / Post-Coital Contraception

1.1 Drugs Used in Emergency Contraception

Must Know

1.2 Other Options for Emergency Contraceptives

Must Know

1.3 Criteria for Drug of Choice for Emergency Contraceptives

Asherman Syndrome

1. Etiology

Must Know

1.1 Diagnosis

Must Know

1.2 AFS classification (American Fertility Society)

1.3 Treatment

Good to Know

Amenorrhea

1. Recall

1.1 Delayed Puberty

Must Know

2. Primary Amenorrhea

Must Know

3. Secondary Amenorrhea

Must Know

Adenomyosis

1. Adenomyosis / Endometriosis Interna

1.1 Presentation

1.2 Diagnosis

Must Know

1.3 Treatment

Pelvic Inflammatory Disease (PID)

1. Pelvic Inflammatory Disease

1.1 Vaginitis	Good to Know
1.2 Bacterial Vaginosis	Must Know
1.3 Trichomoniasis	Good to Know
1.4 Candidiasis	
1.5 Tubercular PID	Good to Know
1.6 Tubal Infection	
1.7 Endometritis	
1.8 Surgical treatment of TB pelvis	

Endometrial Carcinoma

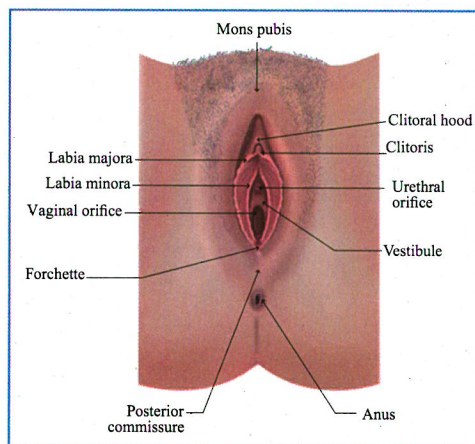
1. Endometrial Carcinoma	Must Know
1.1 Etiology: High Estrogens	
1.2 Endometrial Hyperplasia	
1.3 Diagnosis	Good to Know
1.4 Staging Laparotomy	Good to Know
1.5 Staging of Ca Endometrium: 2009 FIGO staging	
1.6 Prognostic Factors	
1.7 Treatment	Good to Know

1 MENSTRUAL PHYSIOLOGY PART-1



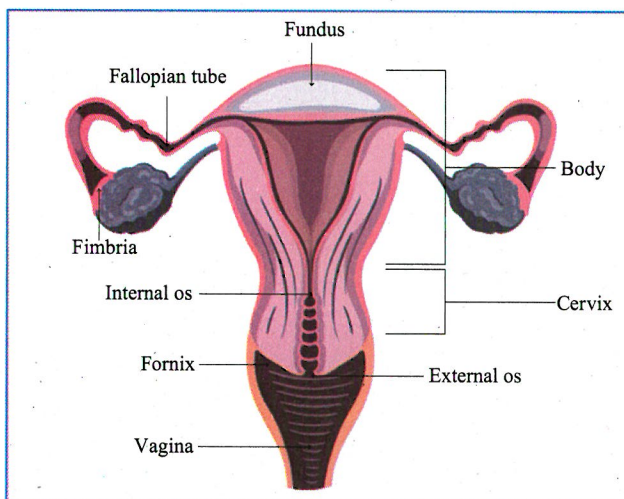
External genitalia

- Parts of vulva
 - Clitoris
 - Labia minora
 - Labia majora
- Adjacent organs
 - Vaginal opening
 - Urethral opening
 - Anus



Uterus in a Coronal section

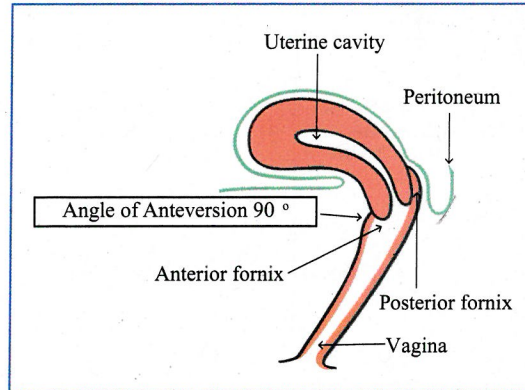
- Uterine length: Body (corpus)
 - 7-8 cm in a nulliparous woman
 - 8-10 cm in multiparous women
- Cervix is 4 cm: (Neck of the uterus)
 - <2.5 cm: short cervix
 - Incompetent OS



Uterus in a Sagittal section

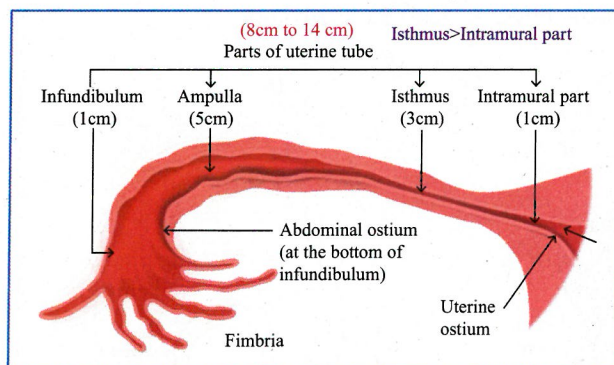
- Angle of anteversion: 90°
- Cervix points downwards & forwards
 - This helps picking up the sperms easily from the vaginal pole

- Length of the vagina:
 - Posterior: 9cm
 - Anterior: 7 cm
- Fornix; area of the vagina next to the cervix
- Semen is deposited in the posterior fornix



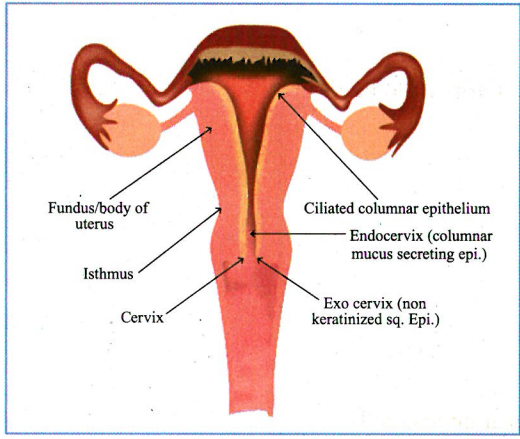
Fallopian tube

- Initiation is from the intramural part
- Fimbria is the clasp
 - Holds the ovary
 - Oocyte is caught here
- Oocyte enters the fallopian tube
 - Reaches ampulla
 - Peristaltic movement
 - Ciliary movement
 - Propels the oocyte through the fallopian tube toward the uterus
- Parts of the fallopian tube:
 - Isthmus is narrow
 - The narrowest part is the intramural part
 - The widest part is Ampulla
 - Site of fertilisation
 - The most common site of ectopic pregnancy



- Epitheliums:
 - Fallopian tube: Ciliated columnar epithelium
 - Vulva: Squamous epithelium
 - Vagina: Stratified squamous epithelium
 - On the surface of the cervix: Squamous epithelium

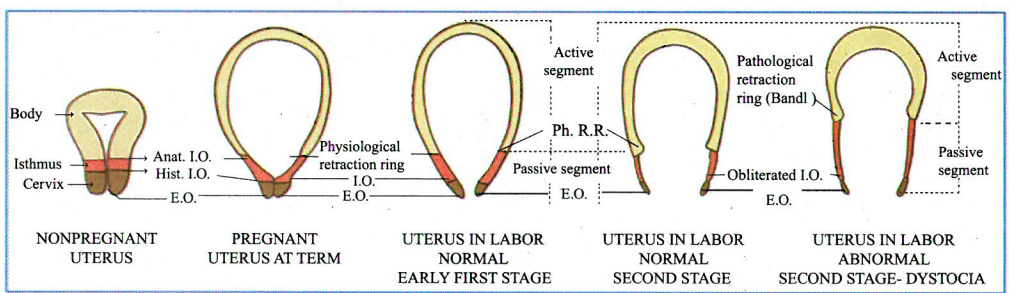
- Endometrium: Columnar epithelium
 - Has microvilli
 - Has stratum basalis and stratum functionalis



- Isthmus of the cervix
 - **Anatomical internal Os:** Ciliated columnar epithelium
 - **Histological Internal Os:** Plain columnar epithelium
- As the cervix expose into the vagina
 - The transition from columnar to squamous epithelium occurs
 - **Transitional/ transformation/ squamocolumnar junction**
 - There are active dividing cells
 - Can get acted upon by papillomavirus
 - 1st site where carcinoma cervix starts
 - Shows abnormal cells
 - Screening is done in this area by **pap smear**

Isthmus

- Isthmus length is 0.5cms in nonpregnant lady
- In a pregnant lady (at term- in labour)
 - It stretches and becomes the lower segment
 - Becomes 7 cm
- It helps the baby to move down by:
 - Upper segment contraction
 - Lower segment relaxation
- Ring formation between upper and lower segment: **Physiological retraction ring**
 - Felt on the p/v exam
- In obstructive labor
 - Uterus contracts
 - But the head doesn't move downwards
 - Upper segment bulges and goes up
 - **Pathological retraction ring/Bandl's ring**
 - **Moves higher and can be felt in both P/V and P/A.**



Ovulation

00:32:51

- Life of oocyte: 24 hrs to 48 hrs
- Embryo survives and reaches the uterine cavity on days 3-4
 - 8 cells on day 3
 - 16 cells on day 4
- Implants as earliest on day 6-10 of ovulation on **secretory endometrium**
- In terms of the menstrual cycle, ovulation is on the 14th day
 - Day 20-24 of menstrual cycle: Implantation window
- Ruptured follicle shrinks and becomes yellow body
 - Corpus luteum
 - Makes endometrium secretory.
 - Helps in implantation
- Before follicle ruptures Follicle has oocyte
 - Ruptures and releases oocyte
 - Before rupture the follicle makes **estrogen from granulosa cells**
 - **Estrogen → Proliferation of endometrium**
- Follicles are there for around 46 or 47 years of age
- In a 17-year-old sexually inactive girl
 - Oocyte dies in 24 hrs
 - Follicle ruptures and shrinks into corpus luteum
 - Progesterone secretion from the corpus luteum starts.
 - Endometrium is secretory
- By day 10 of ovulation, the corpus luteum starts to degenerate
 - **Complete degeneration of corpus luteum is by 14-15 of ovulation**
- Progesterone withdrawal
 - Shedding of Endometrium
- Cervix is so tight
- A lot of contraction is required to cause menstruation (painful)
 - Uterine contractions cause Dysmenorrhea
- Prostaglandins are released due to the rupture of the follicle
 - These prostaglandins contract the uterus and open the cervix
 - Causes complete emptying
 - Causes pain
- On the day of ovulation
 - Follicular artery bleeding
 - Collection of blood in the Pouch of Douglas
 - Pain of ovulation (**Mittelschmerz**)
- Ovulatory cycles: Painful
 - Shedding occurs due to the progesterone withdrawal
 - Regular withdrawal
- Anovulatory cycles: Painless
 - No ovulation
 - No prostaglandins
 - No Mittelschmerz
 - No progesterones in anovulatory cycles
 - Endometrium keeps on growing
 - Becomes ischemic and then sheds
 - No specific time to shed
 - Irregular withdrawal

Dysmenorrhea

01:02:05

- Pain during periods
 - Starts half an hour prior to the onset of periods
 - stays till 10 hrs post onset
 - **Spasmodic or primary dysmenorrhea**
 - Pain starts 3-4 days prior and stays throughout the menstrual cycle
 - Secondary/ Congestive dysmenorrhea
 - Secondary to PID, endometriosis, adenomyosis

Membranous Dysmenorrhea

- Menstrual blood is fluid **due to uterine fibrinolysin**
- Lack of local fibrinolysins
 - Endometrium is shed like a cast of the uterine cavity
 - Extremely painful

Treatment of Dysmenorrhea

01:09:13

- 1st line
 - NSAID + Ibuprofen/ Naproxen/ Mefenamic acid
- Anti spasmodic
 - Dicyclomine
 - Drotaverine
- Combined OCPs
 - Induce anovulatory cycles which inturn reduces pain during menstruation.
- Dilate the cervix (under anesthesia)
 - Hegar dilators
- GnRH analogues
 - Depot form
 - Downregulation of pituitary
 - Stop periods
- Presacral nerve ablation
 - **By laser or thermal methods**
 - Laparoscopic Uterosacral Nerve Ablation (LUNA)

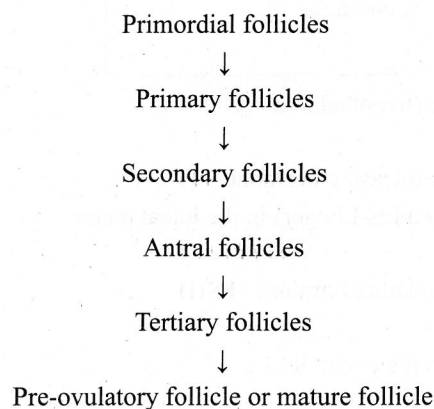


- Size of the ovary: $3 \times 3.5 \times 2.5-5$ cms
- The volume of ovary: a prolate ellipsoid: Length \times breadth \times width $\times 5/9$
 - $>10\text{mm}^3$ is a large volume ovary (seen in PCOS)
- Mature / Dominant follicle:
 - Has **one egg/ovum** per month
 - Size: 18-20 mm size
- Antral follicles: Fluid-filled other small follicles
 - Size: 2-6mm
 - 6-7 per ovary per month
- Primordial follicles: 1000/month recruited

Primordial Follicles

00:04:10

- Other Name: **Pre-antral follicles**
- Size: 0.03-0.05 mm
- 1000 are recruited per month
- Egg with 1 layer of **flat granulosa cells**
- Most of the primordial follicles degenerate; some will become the primary follicles.
 - Size: 0.1 mm
 - Still 1 egg with 1 layer of cuboidal granulosa cells
- Most of the primary follicles degenerate. Some will get converted to secondary follicles
 - Size: 0.2 mm
 - Many layers of granulosa cells
- Antral follicles: Fluid-filled follicles
 - Size: 2-6 mm, 6-7/month
 - One will become the tertiary follicle and then the pre-ovulatory/ mature follicle.
 - Dominant follicle: Mature granulosa cells will make estrogen
 - Size: 20 mm
 - Fluid filled
 - Other Names: Mature, **Graafian follicle**, pre-ovulatory
 - One dominant follicle → Rupture → Oocyte.



- A set number of follicles are present in the ovary
- Primordial follicles: 6-7 million at 20 weeks of intrauterine life

- Start forming from the 8th week of intrauterine life
- 1-2 million at birth
- 3-4 lakhs at the level of puberty
- Wave of atresia causes killing of follicles
 - Reduce the follicular number
 - Follicles with granulosa cell lining will survive the wave of atresia

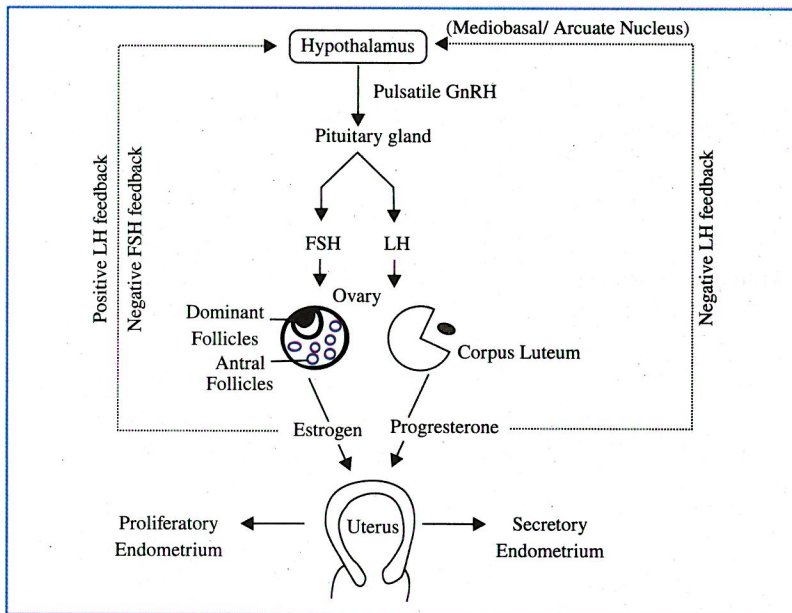
At Puberty
↓
Ovulation
↓
1000 primordial follicles are utilized per month

- 3,60,000 primordial follicles are utilized in 30 years of menstrual life
 - Each year: 12,000 follicles are utilized
 - 36 years: $36 \times 12000 = 4,32,000$ follicles are utilised
 - $36 \times 12 = 432$ eggs are utilized
 - Normal value: 400-500 eggs in their life

Oocyte

PYQ: NEET PG 2019

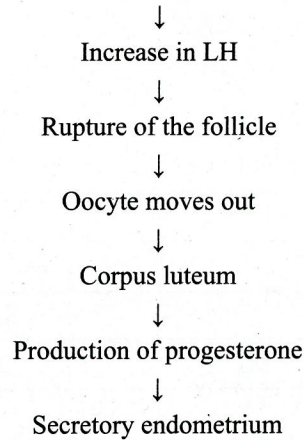
00:18:37



Mediobasal or arcuate nucleus (hypothalamus)

↓
Pulsatile release of gonadotropin-releasing hormone
(1 in 60 mins-Fast) in the follicular phase (1/90 mins-Longer) in the luteal phase
↓
Pituitary release of the follicular stimulating hormone (FSH)
↓
Growth of the follicle with the egg in it
↓
Oestrogen
↓
Proliferation

Oestrogen-positive **feedback** on the brain

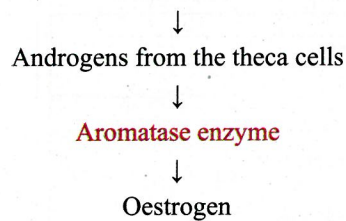


- Purpose of FSH: Produce estrogen
- Purpose of LH: Produce progesterone
 - Ovulation → Corpus luteum → Progesterone

Follicles

- Has developing oocyte and granulosa cells
- Granulosa cell will make the oestrogen
 - Under the influence of FSH

Basal levels of LH stimulate theca cells.



- Two cell- two gonadotropin theory
 - Two cells: Follicular and theca cells
 - Two gonadotropins: FSH, LH
- Normal level of FSH: 2-6 IU
 - Makes adequate estrogen
 - >10 IU: Menopausal women
 - >40 IU: **Diagnostic of menopause**
 - >40 IU before 40 years: **Premature ovarian failure**
 - Average age of menopause in India: 47-48 years
 - World average of menopause: 51-52 years

 PYQ: AIIMS 2018

Ovarian Reserve

00:35:50

- Capacity to conceive
 - Good: Young women
 - Poor: Older women
- Around 35 years: Good ovarian reserve
- Best time for pregnancy: 20-25 years

- Good: 25-35 years
- >35 years: Quality of egg is average
 - More spontaneous abortions
 - More anomalies
 - More aneuploidies
- >40 years: 40% chance of abortions

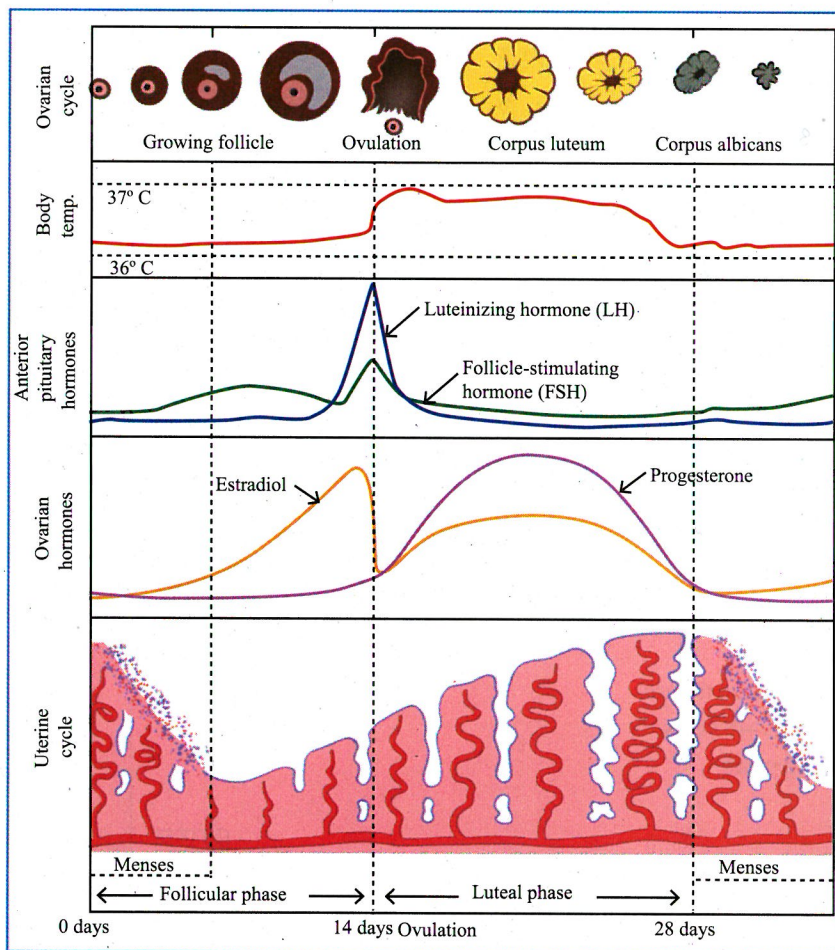
Good	Parameters	Poor
Young women	Age	Older women
3 × 3.5 × 2.5	Size of ovary	Smaller
6-7/Ovary	Antral follicular count on USG	≤3/ovary
2-6	Serum FSH	>10
45-200 pg/ml	Serum Inhibin B (Made from granulosa cells)	<45 pg/ml
2-6 ng/ml	Serum Antimullerian hormone (Made from granulosa cells)	<1 ng/ml

- Poor parameters in younger women: Poor ovarian reserve

Menstrual Cycle

00:47:29

PYQ: FMGE 2019, 2020, 2021



- **1st day of menstrual cycle:** First day of bleeding
 - Serum FSH is high and becomes low