HISTORY AND PHYSICAL EXAMINATION IN AN OBSTETRIC PATIENT

(HOW TO CALCULATE AOG AND ESTIMATED DATE OF DELIVERY)

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OBSTETRICS AND GYNECOLOGY

REPRODUCTIVE ENDOCRINOLOGY AND INFERTILITY

MINIMALLY INVASIVE SURGERY

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REFERENCES

- Thompson JE. Chapter 14 The Pregnant Woman. In: Bickley LS (ed); Bates' Guide to Physical Examination and History Taking, 7th edition (1999)
- Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, Casey BM, Sheffield JS (eds). Williams Obstetrics 24th edition. 2014.
- Comprehensive Gynecology 7th edition, 2017 (Lobo RA, Gershenson DM, Lentz GM, Valea FA *editors)*

Outline

- Components of an Obstetric History
- Determining Gravidity and Parity
- Calculating fetal age of gestation (AOG)
- Calculating Estimated Date of Delivery (Naegele's rule)
- Components of an Obstetric Physical exam

PREGNANCY HISTORY

Obstetric history

- Obtaining an accurate history is important to confirm a woman's suspicion of pregnancy, make accurate fetal dating, assess general health of the mother and fetus
- Directed toward risk factors known or suspected to diminish the health of either the woman or her developing fetus

Thompson JE. Chapter 14 The Pregnant Woman. In: Bickley LS (ed); Bates' Guide to Physical Examination and History Taking, 7th edition (1999)

Box 7.1 Components of Effective Physician Communication

Be culturally sensitive.
Establish rapport.
Listen and respond to the woman's concerns (empathy).
Be nonjudgmental.
Include both verbal and nonverbal communication.
Engage the woman in discussion and treatment options (partnership).
Convey comfort in discussing sensitive topics.
Abandon stereotypes.
Check for understanding of your explanations.
Show support by helping the woman to overcome barriers to care and compliance with treatment.

Mendiratta V, Lentz GM. Chapter 7 History, Physical Examination, and Preventive Health Care; In: Comprehensive Gynecology 7th edition, 2017 (Lobo RA, Gershenson DM, Lentz GM, Valea FA *editors)*

History Outline

1. Sociodemographic details (Name, age, address, marital status, occupation/Source of income)
2. Chief complaint:

   examples: “regular prenatal check-up”, “abdominal pain”, “bloody or water discharge”
3. History of present pregnancy

   Examples: When amenorrhea was noted; when assisted reproductive technique was performed; when pregnancy test was done

Components of History

3. Past Medical or Family history of chronic or genetic diseases (Diabetes Mellitus, Hypertension, cardiac conditions, Asthma, etc)
4. Past Obstetric history (gravidity and parity, birth outcmes such as birthweight, gender, and major complications of pregnancy, labor or birth; history of premature birth or growth-retarded infant, etc)
5. Personal/social history (exposure to teratogenic chemicals/drugs, toxic substances, smoking history, alcohol or illicit drugs use)
6. Menstrual history (regularity of menses, last menstrual period (LMP)
7. Past Surgical/Gynecologic history (history of OCPs use, gyne infections)
8. Antenatal course (symptoms of pregnancy such as nausea, vomitting, breats tenderness, pelvic pain, fatigue, change in urinary frequency, change in bowel habits; intake of Folic acid, Down's screening; previous admissions)

Determining the patient's gravidity and parity: G_P_ (F-P-A-L)

- Gravidity: number of times the woman has become pregnant (this should include preterm births, ectopic pregnancies, molar pregnancies and abortions)
- Parity: indicates the number of pregnancies reaching viable gestational age **(> 20 wks),** INCLUDING stillbirths
  - *The number of fetuses does not determine the parity.*
  - *Twin pregnancy carried to viable gestational age is counted as 1*
- FPAL = F: number of fullterm babies

  P: number of preterm babies

  A: number or abortions, ectopic pregnancy, molar pregnancy

  L: number of living children

EXAMPLES:

- G_1P_0 = FIRST PREGNANCY (thus no need to indicate FPAL)
- G3P2 (2002) = currently on 3rd pregnancy, with 2 previous live term births, currently alive
- G3P2 (2000) = currently on 3rd pregnancy, with 2 previous live term births, but died thereafter
- G3P2 (0202) = currently on 3rd pregnancy, with 2 previous live preterm births, currently alive
- G2P1 (0010) = currently on 2nd pregnancy, first pregnancy was an abortion (or ectopic/molar pregnancy)
- G2P2 (2002) = non-pregnant woman with 2 previous live, term pregnancies, both children currently alive

Examples (multiple pregnancies)

- A woman currently on her 2nd pregnancy, had a previous twin pregnancy that was carried to term, and currently alive:

  G2P1 (2002)

- A woman who just gave birth to her twin babies on her first pregnancy:

  G1P1 (2002)

Common terms used to describe parity

- Gravida: a woman who is pregnant
- Primigravida: a woman on her first pregnancy
- Multigravida: a woman who has been pregnant more than once
- Nulligravida: a woman who has never been pregnant (G_0)
- Primipara: a woman who has given birth to only one child (> 20 weeks aog)
- Multipara: a womam who has given birth more than once (> 20 weeks AOG)
- Nullipara: a woman who has never given birth, or has never had a pregnancy progress beyond 20 weeks

Determining fetal age

- Calculating number of weeks AOG based on LMP
- If patient has irregular menses or does not remember her LMP:

1. Uterine size
2. Quickening
3. First trimester ultrasound scan

Calculating the age of gestation (AOG)

- LMP: January 3, 2021
- Date today: May 1, 2021

January: 31 days – 3 =	*28 days*
February:	*28 days*
March:	*31 days*
April:	*30 days*
May:	*1 day*
TOTAL:	*118 days*

118 ÷ 7 days =
16 6/7 wks

Calculating the estimated date of delivery (EDD)

- Naegele's rule (using the Last Menstrual period/LMP) – used only if patient has regular menses and is sure of her LMP

Naegele's rule

- add 7 days to the first day of the last period and subtract 3 months, then add 1 year
- For example:
  - *LMP: July 5, 2016*
  - *EDD: July 5 + 7 days ➔ July 12 → July 12 minus 3 months → April 12 → + 1 year → April 12, 2017*

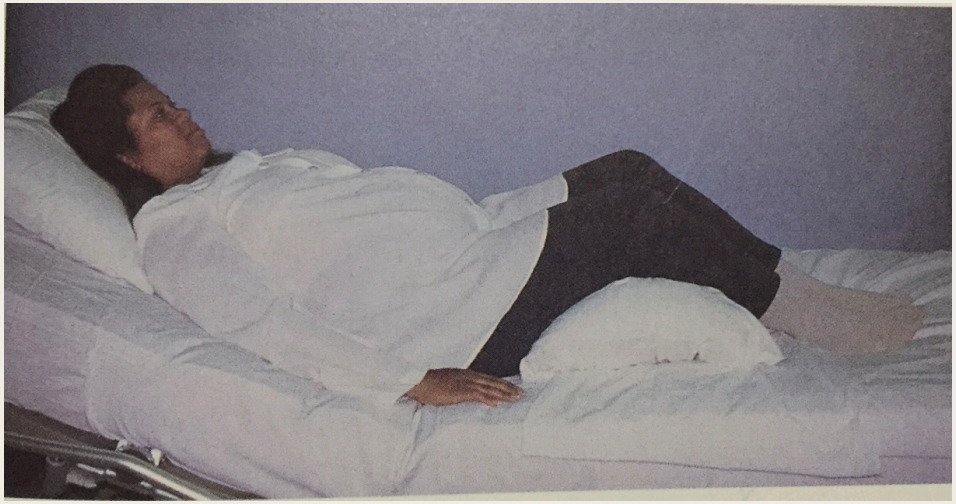
OBSTETRIC PHYSICAL EXAMINATION

General Approach

- Make sure to always provide comfort and sense of privacy
- Have the needed equipment readily at hand
- Provide gown and drapes for abdominal and pelvic exam
- Instruct the patient to empty her bladder prior to examination

A. Positioning

Semi-sitting position with the knees bent supported by a pillow affords the greatest comfort, as well as protection from the negative effects of the weight of the gravid uterus on abdominal organs and vessels



Thompson JE. Chapter 14 The Pregnant Woman. In: Bickley LS (ed); Bates' Guide to Physical Examination and History Taking, 7th edition (1999)

- B. Equipment
  - The examiner's hands are the "primary equipment" for examination of the pregnant woman (should be warmed); avoid tender areas of the body until the end of the examination
  - Speculum
  - Tape measure
  - Stethoscope/ fetal doppler

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General examination

1. Appearance (inspection of overall health, nutritional status., emotional state, neuromuscular coordination)
2. Weight, Height, BMI
3. Vital signs (BP, pulse rate, temperature)

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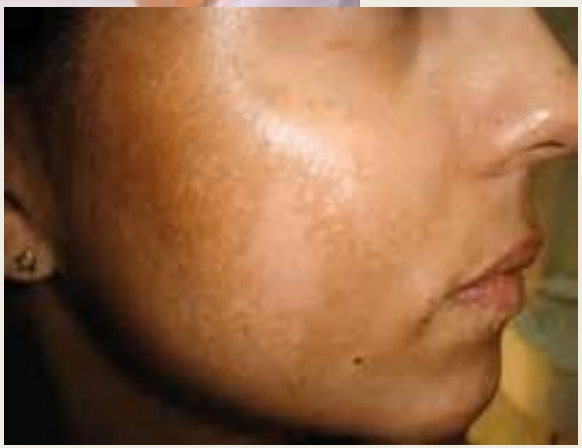
Head and Neck

Skin pigmentation changes



CHLOASMA/"MELASMA GRAVIDARUM" -- irregular brownish patches of varying size appear on the face and neck —the so-called *mask of pregnancy.*

Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, Casey BM, Sheffield JS (eds). Williams Obstetrics 24th edition. 2014.

Head and Neck

- Hair: note texture, moisture and distribution; dryness, oiliness and minor generalized hair loss may be noted
- Eyes: anemia of pregnancy may cause pallor
- Nose: nasal congestion is common among pregnant women; nosebleeds also common
- Mouth: inspect gums and teeth; gingival enlargement with bleeding is common
- Thyroid: symmetrical enlargement may be expected; marked enlargement is not normal during pregnancy

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THORAX AND LUNGS

- Inspect thorax for pattern of breathing;
- There are usually no abnormal physical signs, except some women who might experience labored breathing

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HEART

- Palpate the apical impulse; In advanced pregnancy, it may be slightly higher than normal because of dextrorotation of the heart due to the higher diaphragm
- Auscultate the heart; soft blowing murmurs are common, reflecting the increased blood flow in normal vessels

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BREASTS

- Inspect breasts and nipple for symmetry and color; nipples and areola become bigger and darker; Montgomery glands prominent.
- Compress nipples with finger and thumb → may express colostrum from the nipples.

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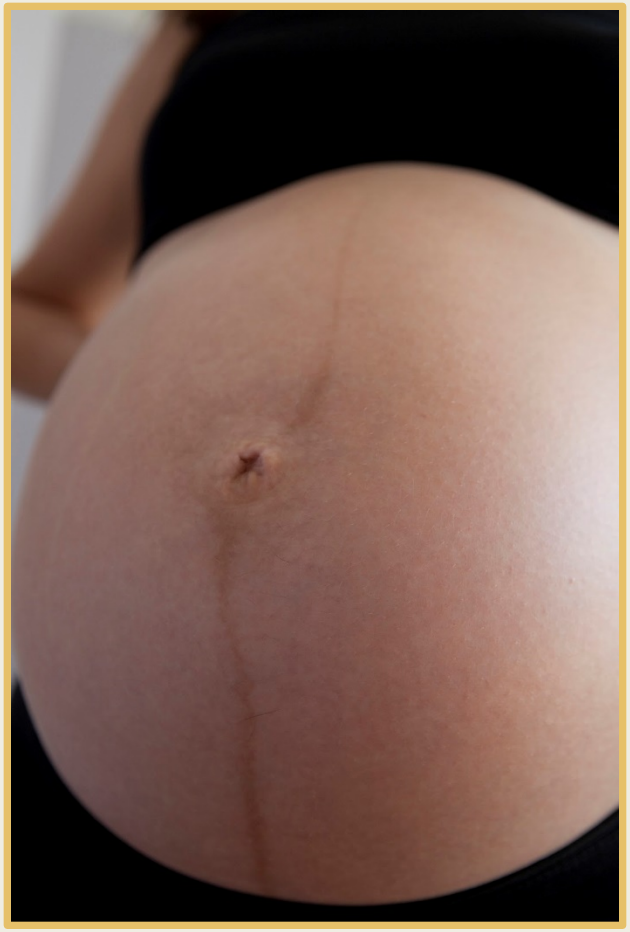
Abdomen

Inspection: skin changes

- Linea Nigra : darkening of the linea alba (midline of the abdominal skin from xiphoid to symphysis pubis)
- → due to stimulation of melanophores by increase in melanocyte stimulating hormone



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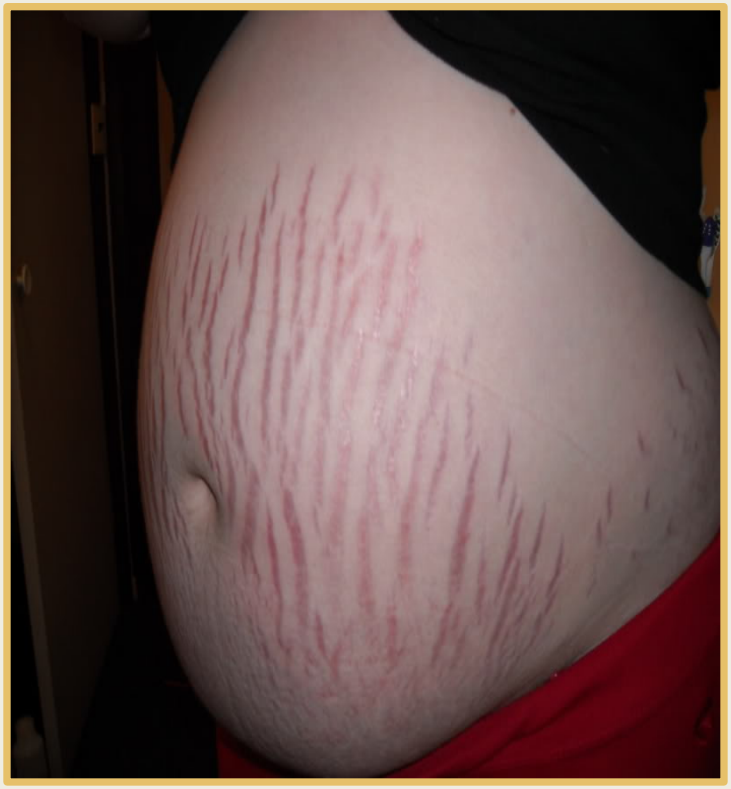
Abdomen

Skin pigmentation changes

- **Striae gravidarum:** "stretch marks"
- → separation of the underlying collagen tissue (secondary to stretching of the abdomen) and appear as irregular scars
- → reddish or purplish → becomes silvery after delivery
- associated risk factors are weight gain during pregnancy, younger maternal age, and family history.



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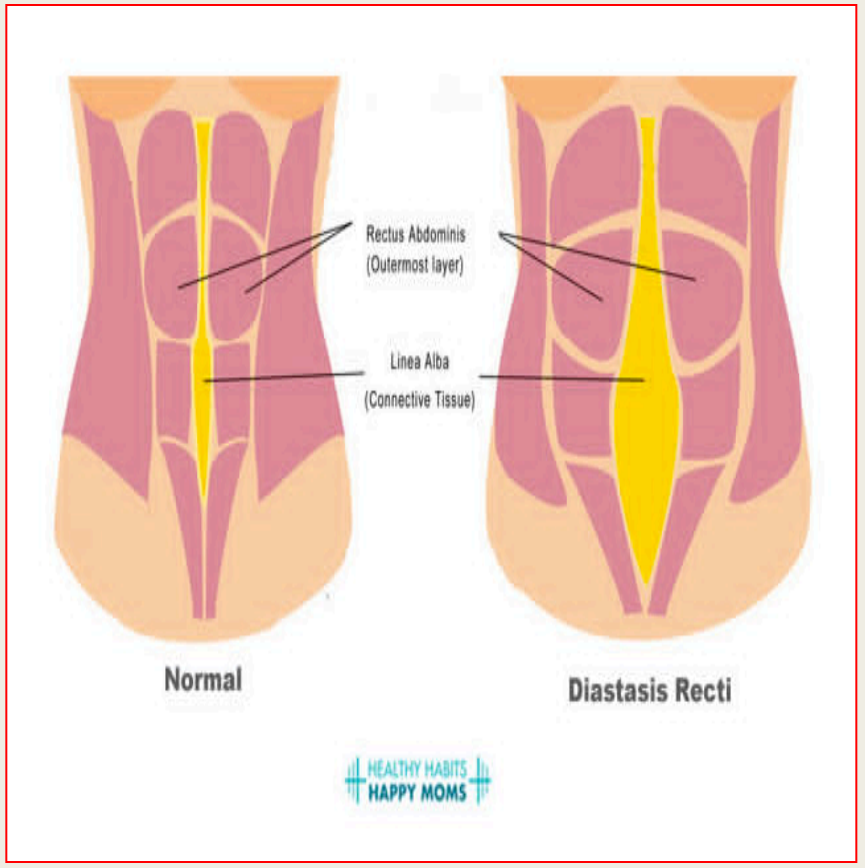
Abdomen

Skin changes

- Occasionally, the muscles of the abdominal walls do not withstand the tension to which they are subjected.
- As a result, rectus muscles separate in the midline, creating ***diastasis recti***
- If severe, a considerable portion of the anterior uterine wall is covered by only a layer of skin, attenuated fascia, and peritoneum to form a ventral hernia.



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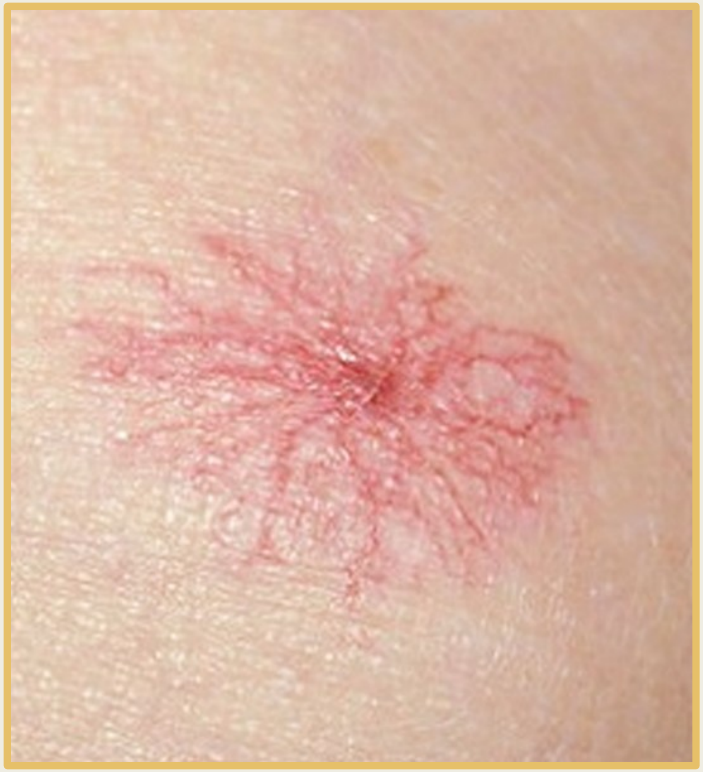
Abdomen

Skin pigmentation changes

- Spider telangieactasia : vascular stellate marks resulting from high levels of estrogen
- → blanch when pressure is applied
- → palmar erythema is an associated sign
- Typically develops in face, neck, upper chest and arms



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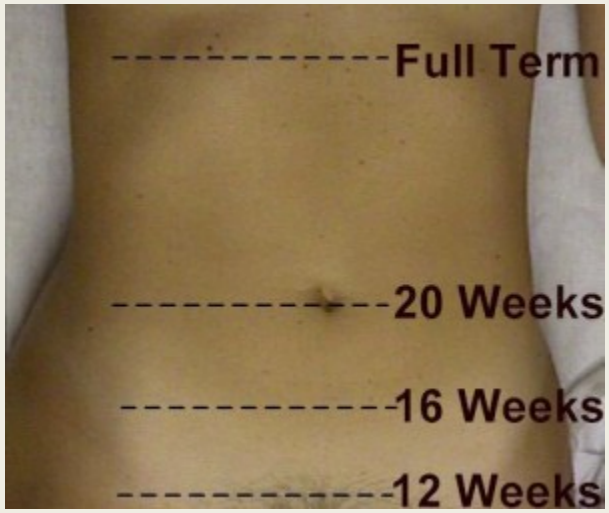
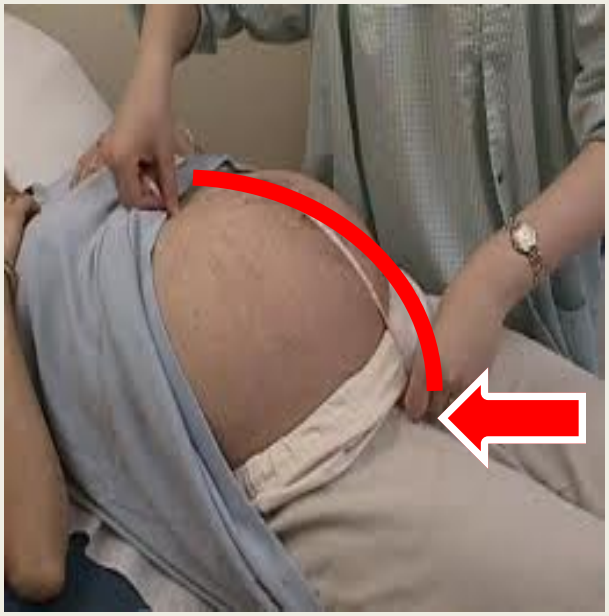
Abdomen

Palpation: Abdominal Enlargement

- 0 to 12 weeks AOG: uterus is a pelvic organ
- 12 weeks AOG: uterus at symphysis pubis
- 16 weeks AOG: midway between symphysis pubis and umbilicus
- 20 weeks AOG: umbilical level





- Linear measurement from the symphysis pubis to the uterine fundus on an empty bladder correlates with AOG at 16-32 weeks (FUNDIC HEIGHT)
- example: 20 weeks AOG = 20 cm

Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, Casey BM, Sheffield JS (eds). Williams Obstetrics 24th edition. 2014.

Abdomen

Palpation

- Perception of fetal movement by the examiner
  - *Examiner may feel fetal movement after 24 weeks AOG (felt by the mother around 18 weeks - "**quickening**")*
- Uterine contractility:
  - *abdomen feels tense or firm to the examiner, especially if the patient is in labor, or near term ("Braxton-Hicks contractions")*
- Some fetal parts become palpable, espescially if mother is non-obese

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Leopold's maneuver

- Palpation
- Abdominal exam to determine fetal presentation

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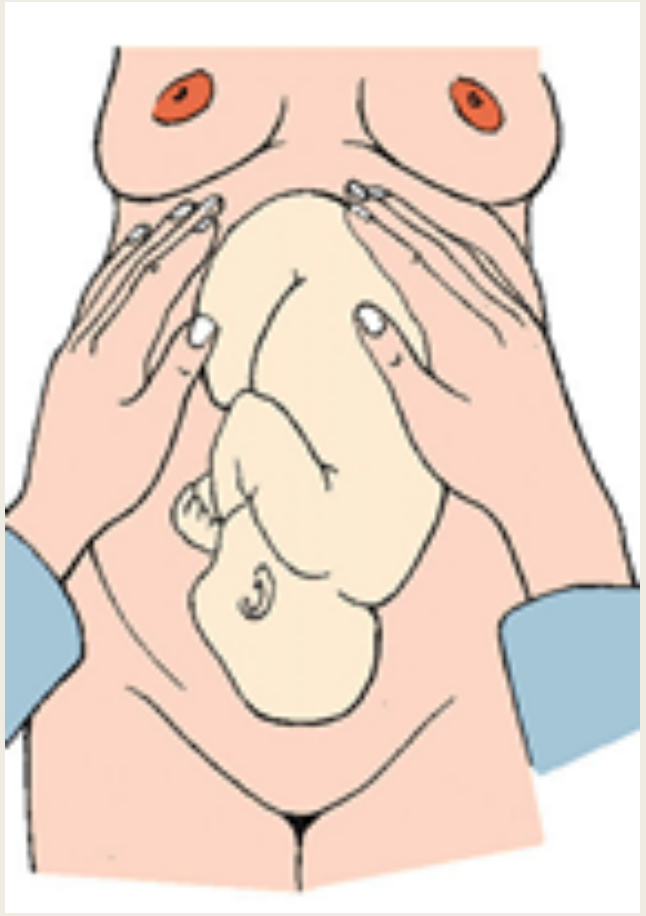
Leopold's maneuvers

1. **Leopold's maneuver #1 (LM1)**



- "Fundal grip"
- Uterine fundus is palpated to detemine which fetal part occupies the fundus

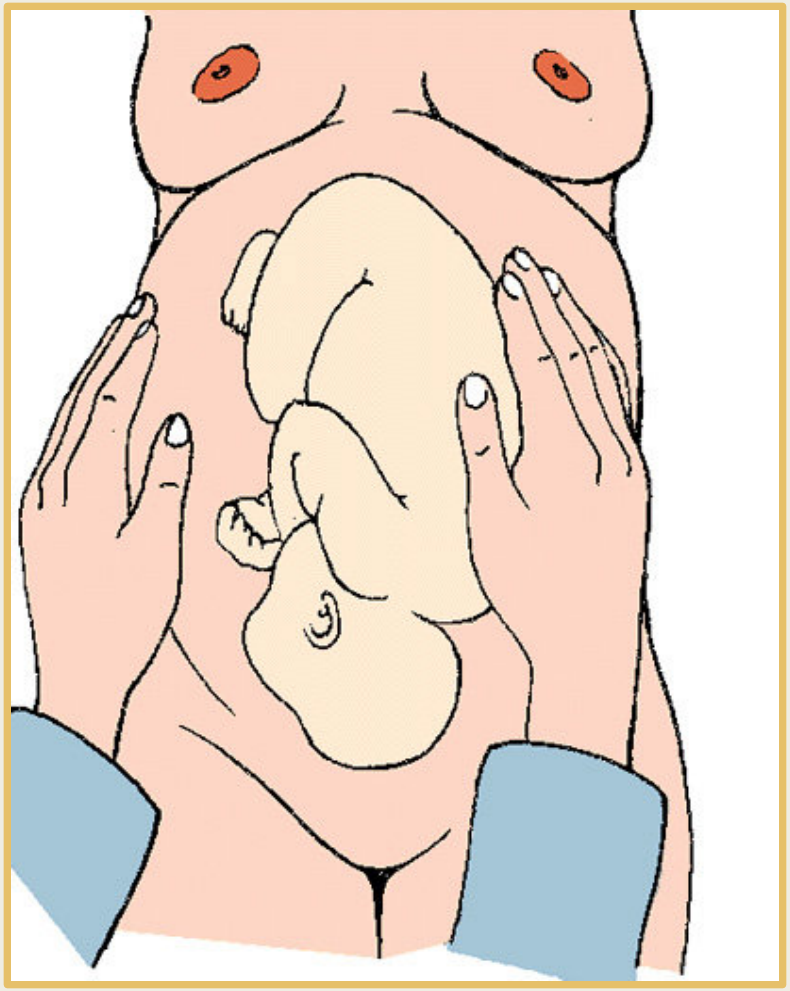
- Fetal head should be round and hard, ballottable
- Breech presents as a large nodular mass

Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, Casey BM, Sheffield JS (eds). Williams Obstetrics 24th edition. 2014.

Leopold's maneuvers

2. Leopold's maneuver #2 (LM2)

- "Umbilical grip"
- Palpation of paraumbilical areas or the sides of the uterus
- To determine which side is the fetal back



- Fetal back feels like a hard, resistant, convex structure
- Fetal small parts feel nodular, irregular

Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, Casey BM, Sheffield JS (eds). Williams Obstetrics 24th edition. 2014.

Leopold's maneuvers

3. Leopold's maneuver #3 (LM3)

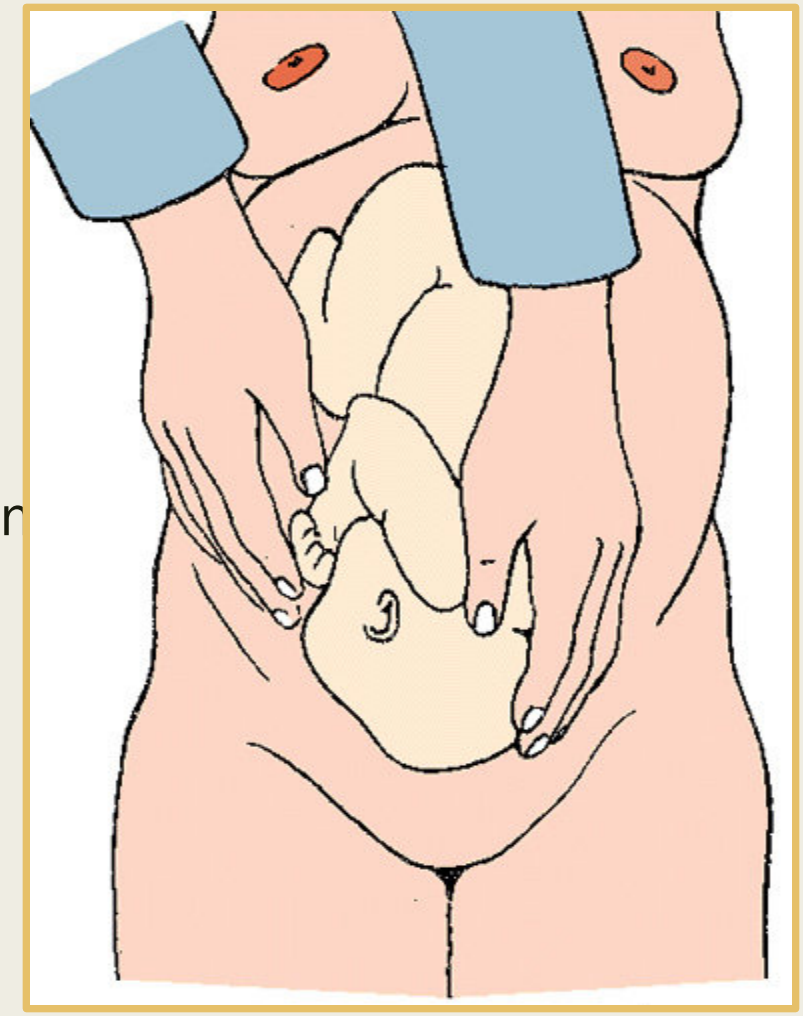
- "Pawlik's grip"
- Suprapubic palpation using thumb and fingers just above the symphysis pubis, to *determine fetal presentation and station*
- the differentiation between head and breech is made as in LM1

- **If presenting part is not engaged, a movable structure can be palpated*

Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, Casey BM, Sheffield JS (eds). Williams Obstetrics 24th edition. 2014.

Leopold's maneuvers

4. Leopold's maneuver #4 (LM4)



- "Pelvic grip"
- Palpation of the bilateral lower quadrants to determine engagemer of the fetal presenting part
- Fetal part is engaged: examiner's hands diverge
- Fetal head is not engaged: examiner's hands converge
- If fetal head is felt on same side of the fetal small parts→ fetal head is well flexed

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Abdomen

Auscultation: Identification of fetal heart beat; heard at fetal back

- FHR is usually at a range of 110-160 bpm
- Detected through stethoscope at 18 weeks AOG
- Detected though fetal Doppler at 10-12 weeks AOG

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Extremities

- Inspect hands and legs for edema.
- Palpate for pretibial, ankle and pedal edema
- Physiologic edema is more common in advanced pregnancy and in women who stand a lot.
- Pathologic edema is often grade 3+ and often associated with pregnancy-induced hypertension
- Check for leg varicosities

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Genitalia

Inspection

- Note hair distribution, color, scars
- Parous relaxation of the introitus and noticaeble enlargement of labia and clitoris are normal
- Scars from previous episiotomy or perineal lacerations may be present
- Inspect anal area for varicosities (hemorrhoids)
- Palpate Bartholin's and skene's glands
- Check for cystocoele or rectocoele

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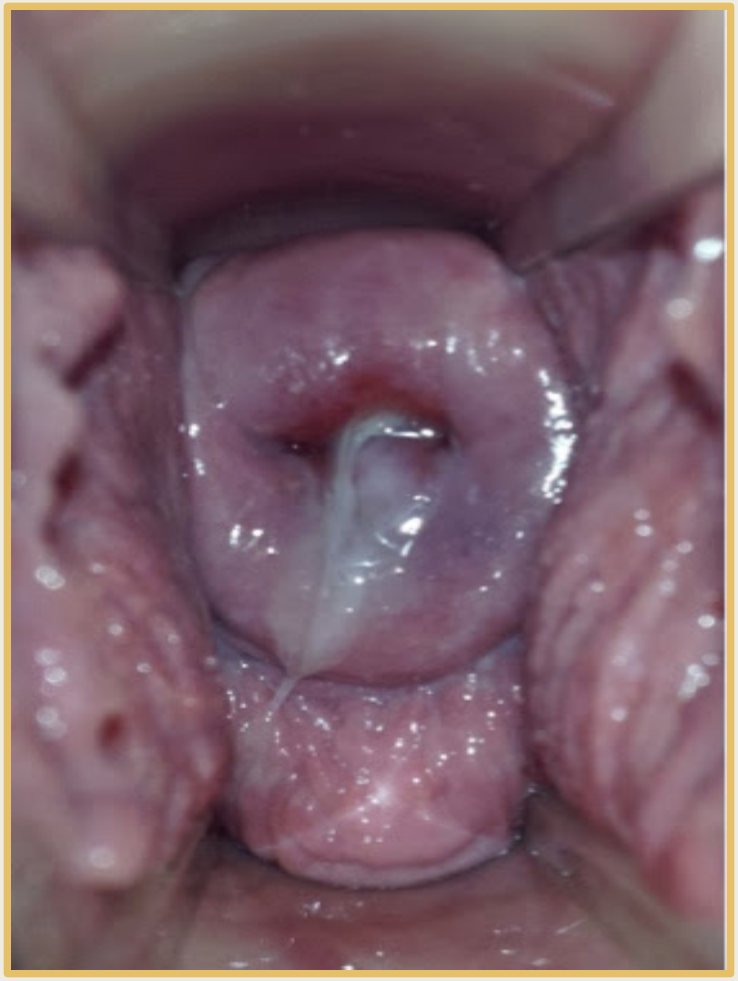
GENITALIA

Speculum exam: Changes in the Vaginal

Mucosa

"Chadwick's sign" – vaginal mucosa becomes congested and violaceous, or bluish to purplish in color



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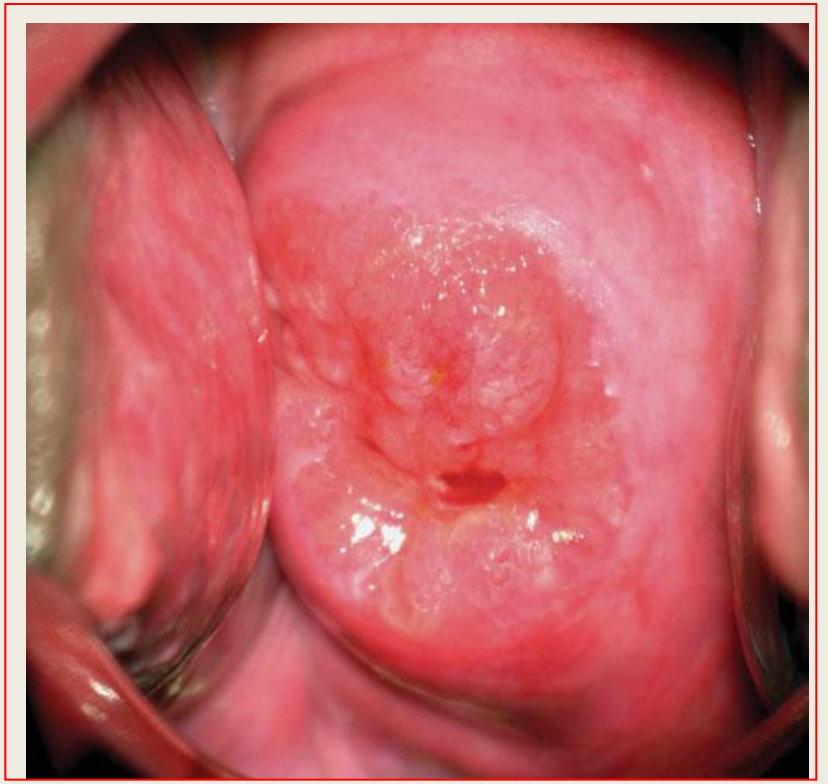
Genitalia

Speculum examination: cervical changes

- cervical glands undergo marked proliferation, and by the end of pregnancy, they occupy up to one half of the entire cervical mass.
- These normal pregnancy-induced changes represent an extension, or ***eversion***, of the proliferating columnar endocervical glands.
- This tissue tends to be red and velvety and bleeds even with minor trauma, such as with Pap smear sampling.



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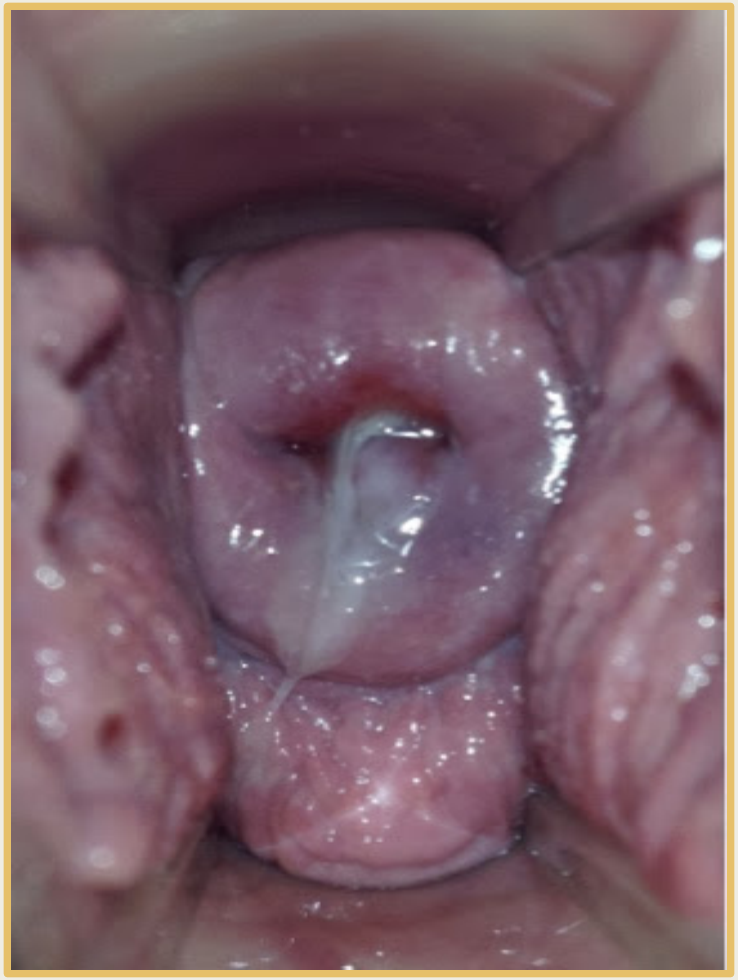
Genitalia

Speculum examination:

Take note also of :

1. vaginal discharge (watery, whitish foulsmelling, curdlike,bloody, etc)
2. Lesions (warts, foreign body, tumorous growths, etc)

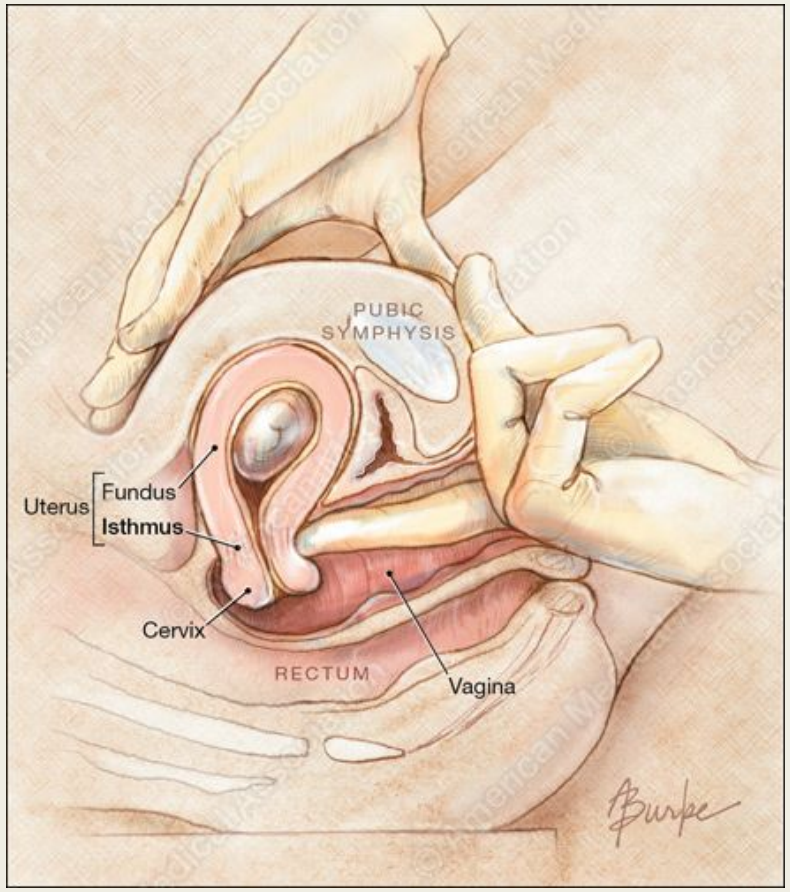


Genitalia

- Bimanual/internal examination

Hegar's sign : softening of the uterine isthmus, resulting in its compressibility on bimanual examination; observed by the 6th to 8th week AOG

Goodell's sign : cyanosis and softening of the cervix; May occur as early as 4 weeks AOG



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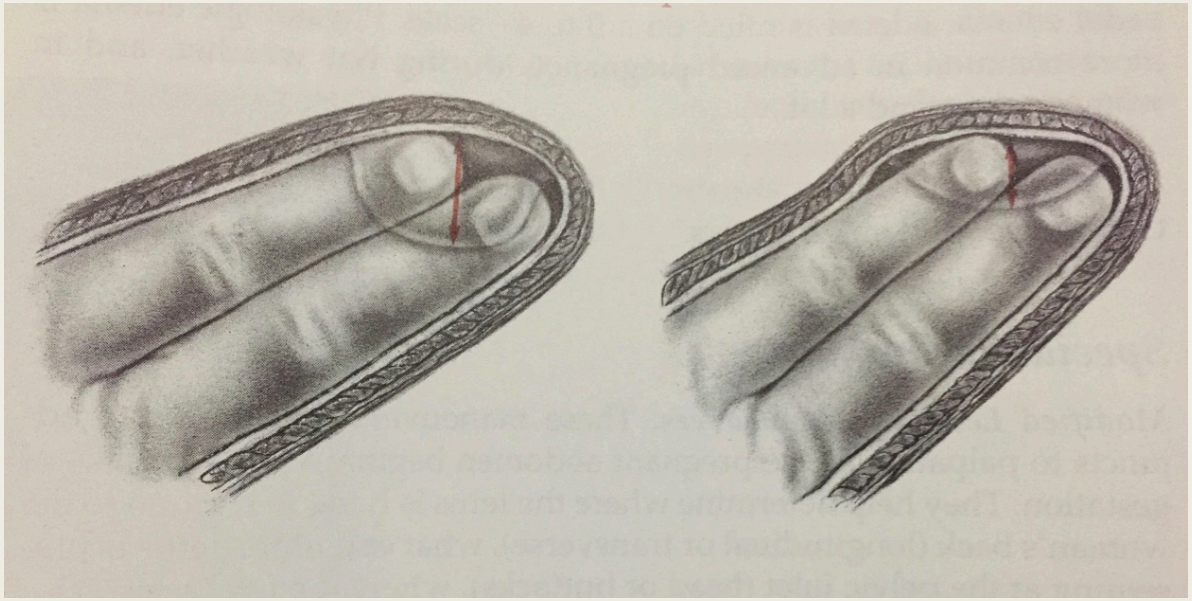
Genitalia

Internal examination:

- Estimate the length of the cervix by palpating the lateral surface of the cervix from the cervical tip to the lateral fornix.
- Prior to 34-36 weeks, cervix should retain its normal length of about 1.5 – 2cm
- A shortened (*"effaced"*) cervix prior to 32 weeks may indicate preterm labor



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Genitalia

Internal examination:

- Note if cervix is closed or dilated
- If dilated, take note of the following:
  - *estimate the approximate size of dilatation in centimeters*
  - *Note the fetal station*
  - *fetal presenting part (ex: cephalic, breech)*
  - *Bag of waters intact?*

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Concluding the visit

- Once the examination is completed, instruct patient to get dressed
- Review findings with patient
- Answer patient's questions
- Advise necessary laboratory/ancillary procedures patient may need
- Reinforce the importance of regular prenatal check-ups
- Record all findings in the chart/record

Summary

- Components of an Obstetric History
- Determining Gravidity and Parity
- Calculating fetal age of gestation (AOG)
- Calculating Estimated Date of Delivery (Naegele's rule)
- Components of an Obstetric Physical exam

Thank you!

youtube channel: Ina Irabon

www.wordpress.com: Doc Ina OB Gyne