

# FETAL POSITION

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Obstetrics and Gynecology

Reproductive Endocrinology and Infertility

Laparoscopy and Hysteroscopy

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# REFERENCE

- Cunningham FG, Leveno KJ, Bloom SL, Dashe JS, Hoffman BL, Casey BM, Sheffield JS, Spong CY (eds). William's Obstetrics 25<sup>th</sup> edition; chapter 9 Prenatal care
- Sumpaico WW, Ocampo-Andres IS, Blanco-Capito LR, Diamante An, Gamilla ZN. (eds). Textbook of Obstetrics 3<sup>rd</sup> edition. Chapter 15 Diagnosis of Pregnancy

# OUTLINE

1. Fetal attitude
2. Fetal lie
  - transverse
  - longitudinal
3. Fetal presentation
  - Cephalic
  - breech
  - compound
  - shoulder
4. Fetal position
5. Leopold's maneuvers

# THE PASSENGER

- **Fetal attitude:**
  - Fetal posture or habitus
  - Relationship of the fetal head to fetal back or extremities
  - “universal flexion”
  - *As a rule, the fetus forms an ovoid mass that corresponds roughly to the shape of the uterine cavity -- fetus becomes folded or bent upon itself in such a manner that the back becomes markedly convex; the head is sharply flexed so that the chin is almost in contact with the chest; the thighs are flexed over the abdomen; and the legs are bent at the knees.*
- Cunningham FG, Leveno KJ, Bloom SL, Dashe JS, Hoffman BL, Casey BM, Sheffield JS, Spong CY (eds). *William's Obstetrics* 25<sup>th</sup> edition; chapter 9 Prenatal care

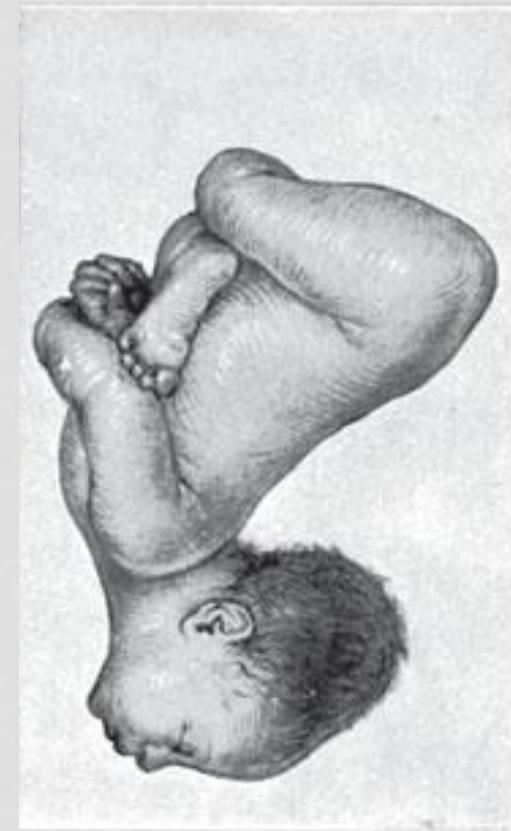


# FETAL ATTITUDE

**Head flexed**

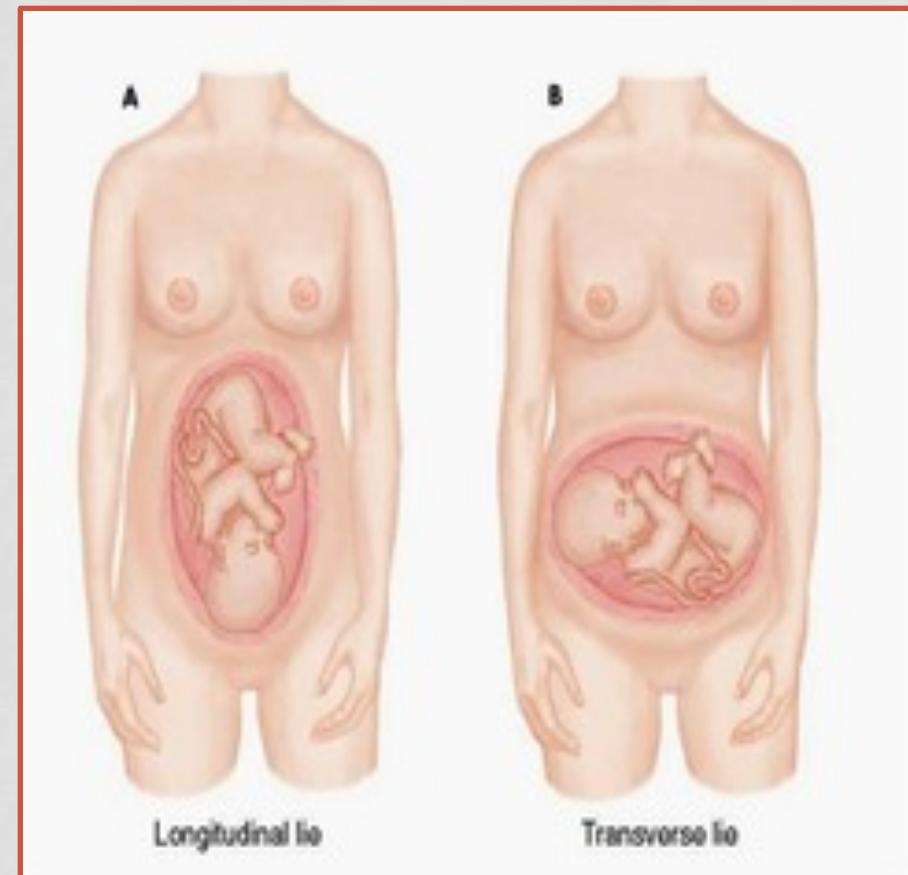


**Head extended**



# THE PASSENGER

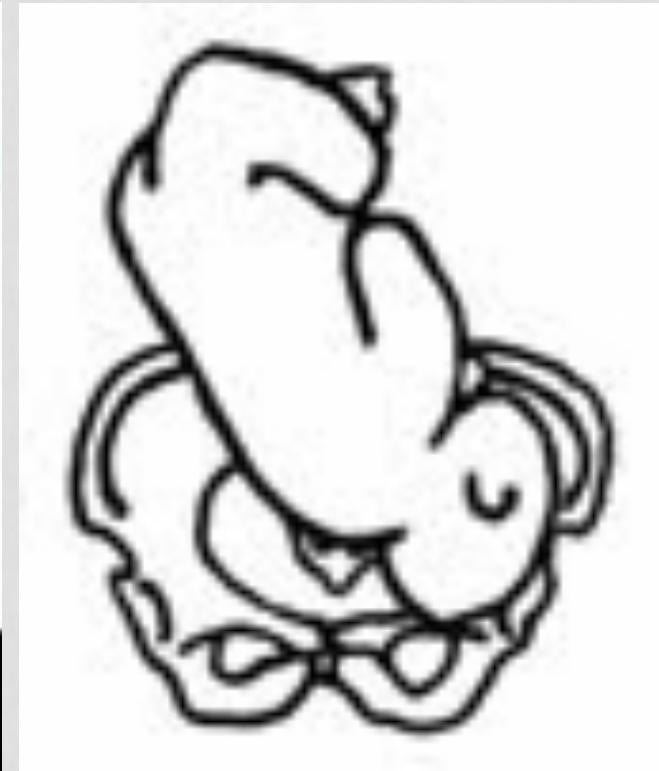
- **Fetal Lie:**
- Relationship of the long axis of the fetus to the long axis of the maternal abdomen



- Cunningham FG, Leveno KJ, Bloom SL, Dashe JS, Hoffman BL, Casey BM, Sheffield JS, Spong CY (eds). William's Obstetrics 25<sup>th</sup> edition; chapter 9 Prenatal care
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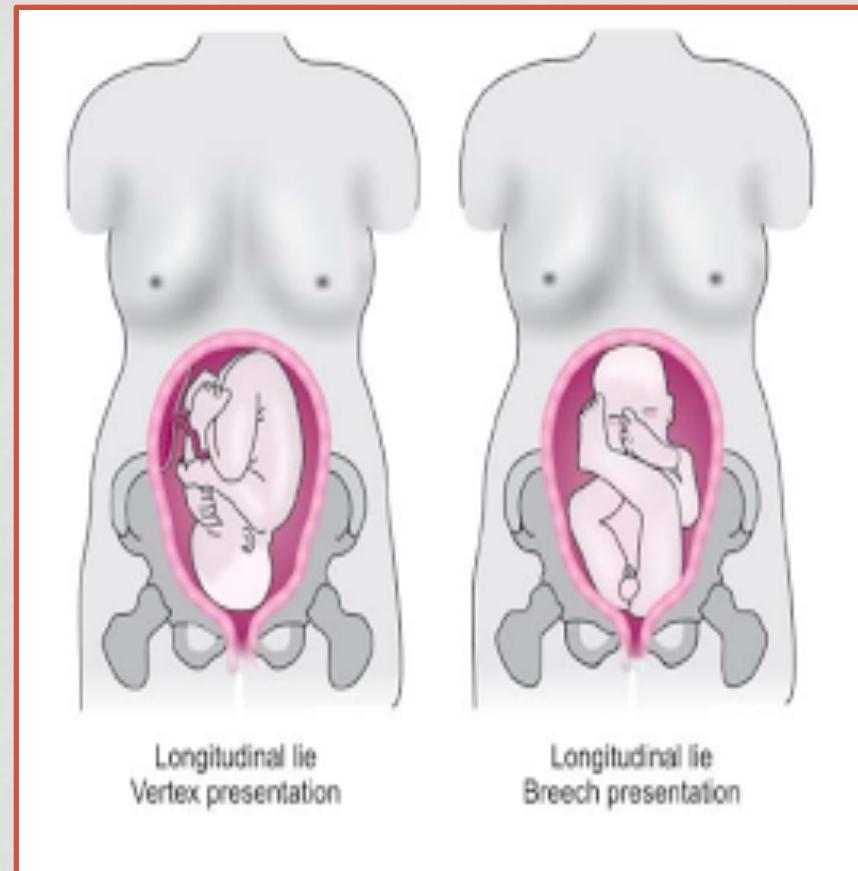
- Fetal lie: oblique



- Cunningham FG, Leveno KJ, Bloom SL, Dashe JS, Hoffman BL, Casey BM, Sheffield JS, Spong CY (eds). William's Obstetrics 25<sup>th</sup> edition; chapter 9 Prenatal care
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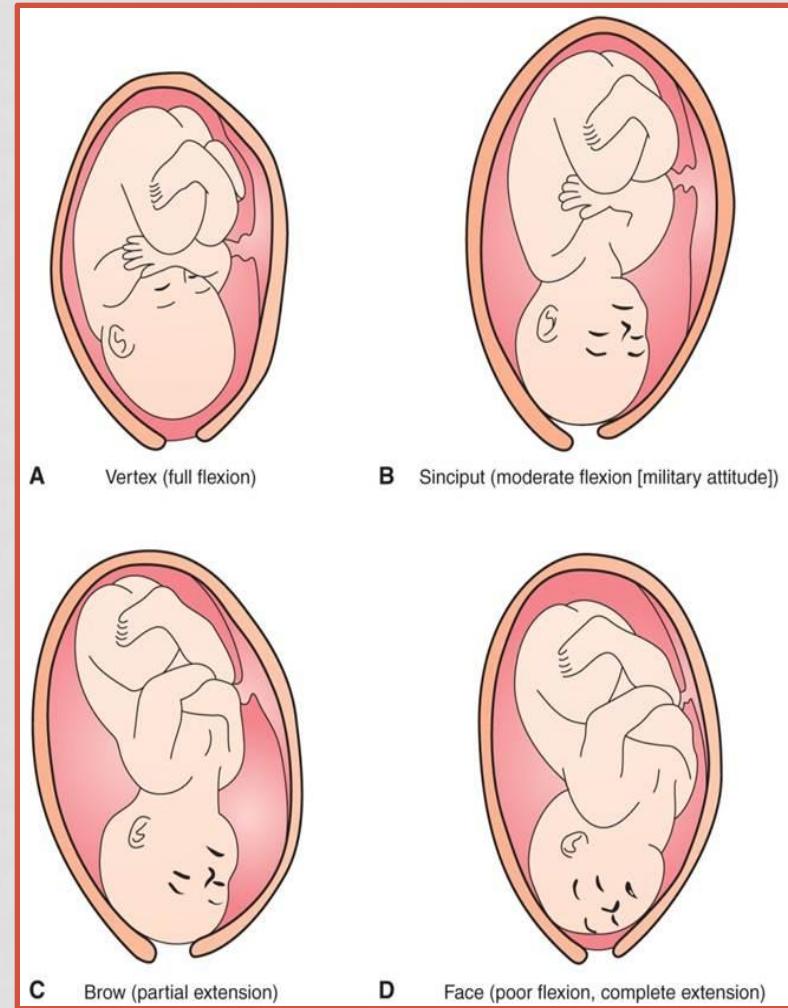
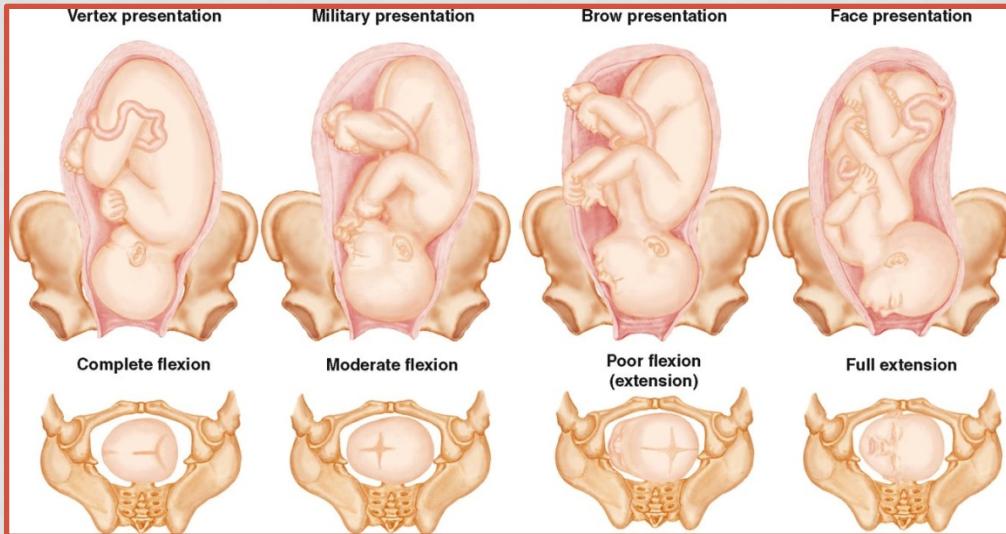
- **Fetal presentation**
- Portion of the body of the fetus that is foremost within the birth canal or in closest proximity to it
- Cephalic, breech, shoulder, compound



- Cunningham FG, Leveno KJ, Bloom SL, Dashe JS, Hoffman BL, Casey BM, Sheffield JS, Spong CY (eds). William's Obstetrics 25<sup>th</sup> edition; chapter 9 Prenatal care
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# THE PASSENGER

- Cephalic presentation
  - 1. Vertex/occiput
  - 2. Sinciput/military
  - 3. Brow
  - 4. Face



# CEPHALIC PRESENTATION

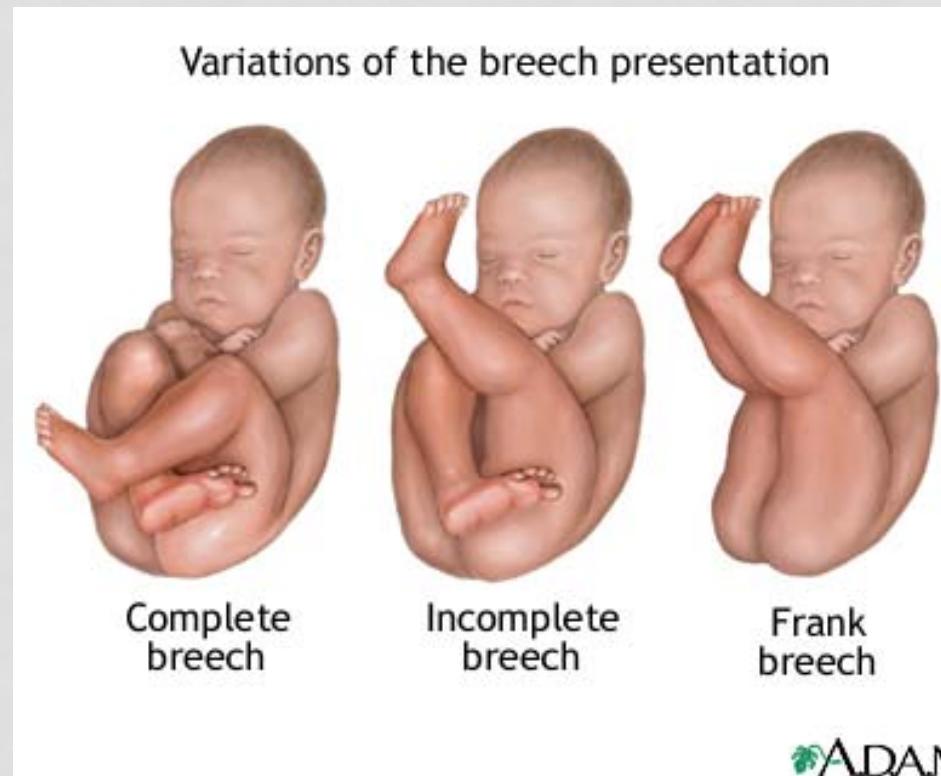
- vertex or occiput presentation - occipital fontanel is the presenting part
- Face presentation - face is foremost in the birth canal; fetal neck may be sharply extended so that the occiput and back come in contact.
- Sinciput presentation- fetal head partially flexed, with the anterior (large) fontanel, or bregma, presenting
- Brow presentation –fetal head partially extended, with the brow presenting

• Cunningham FG, Leveno KJ, Bloom SL, Dashe JS, Hoffman BL, Casey BM, Sheffield JS, Spong CY (eds). William's Obstetrics 25<sup>th</sup> edition; chapter 9 Prenatal care

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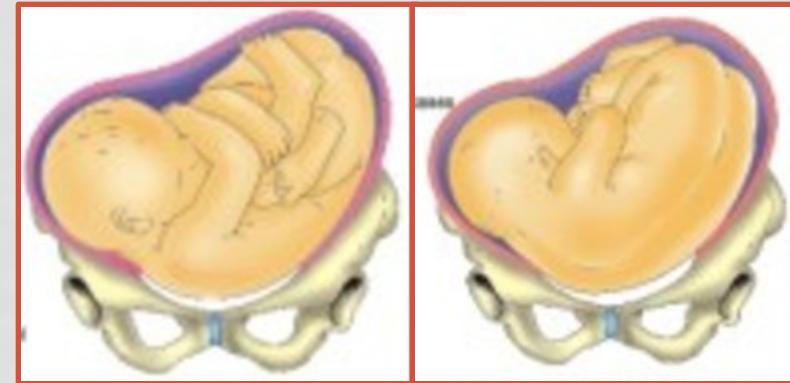
- Breech presentation  
→bitronchanteric diameter presents
- 1. Frank
- 2. Complete
- 3. Incomplete/footling



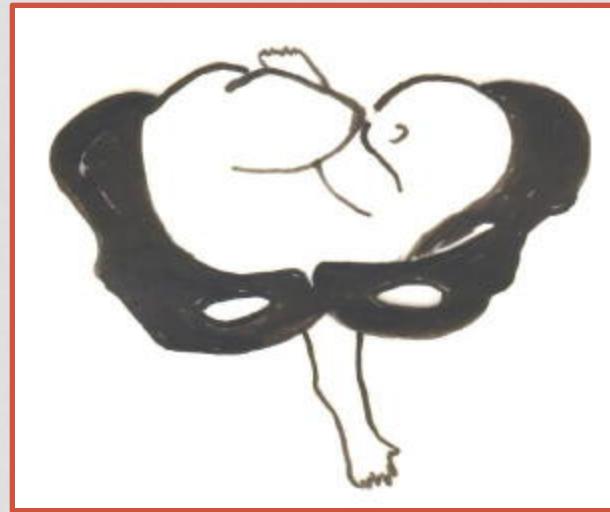
- Cunningham FG, Leveno KJ, Bloom SL, Dashe JS, Hoffman BL, Casey BM, Sheffield JS, Spong CY (eds). William's Obstetrics 25<sup>th</sup> edition; chapter 9 Prenatal care
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# THE PASSENGER

- Shoulder presentation  
shoulder or acromion is presenting  
into the pelvic inlet;  
Bisacromial diameter (11cm)  
presents



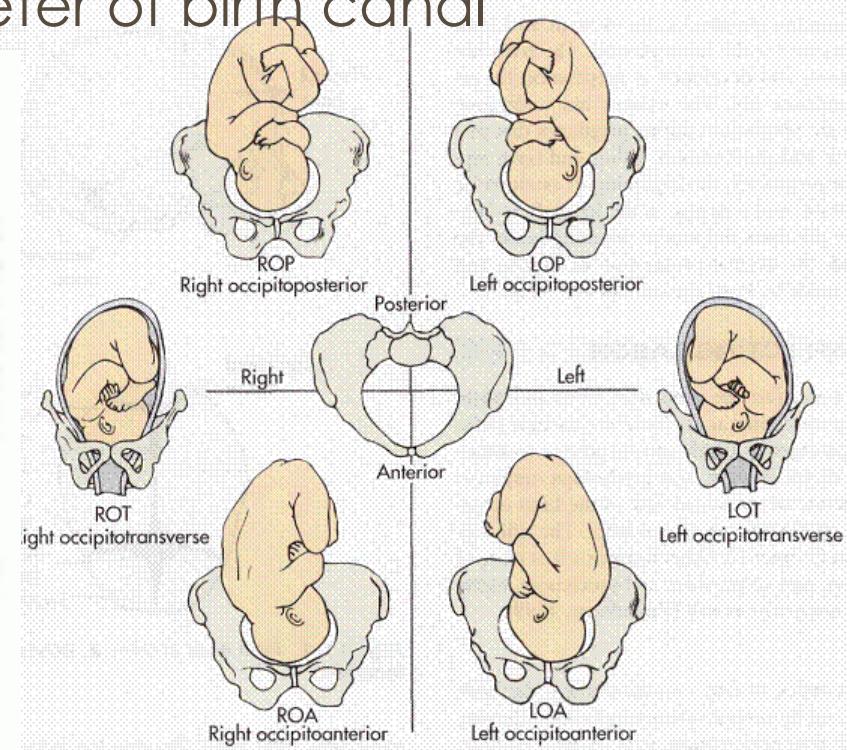
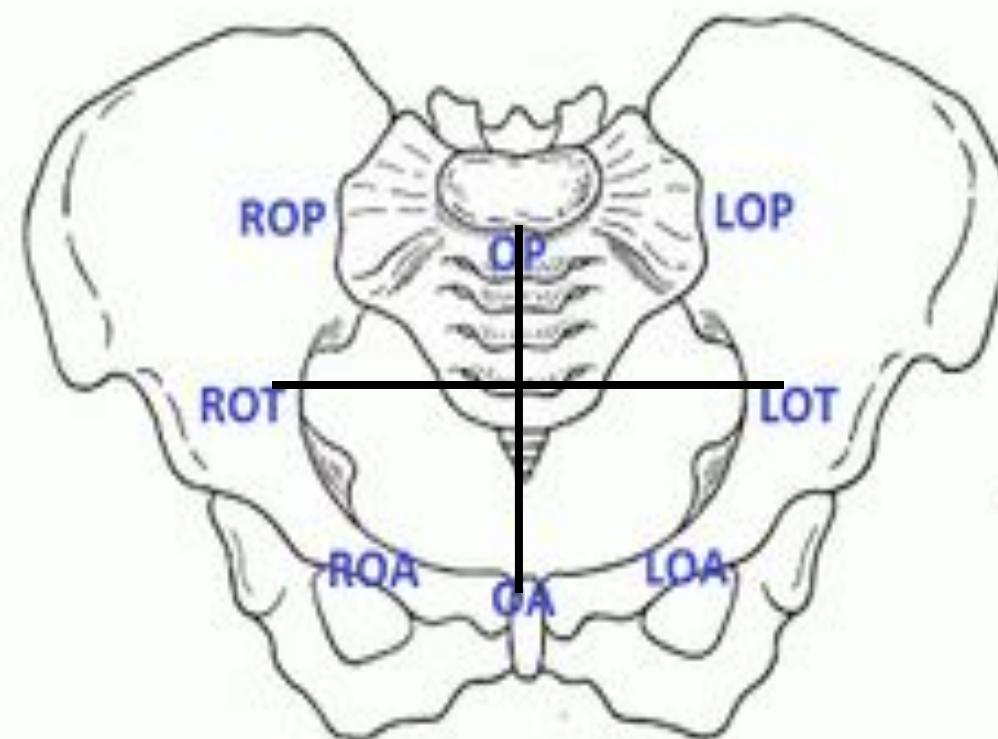
- Compound Presentation  
Fetal hand or foot prolapses  
alongside the presenting vertex or  
breech



- Cunningham FG, Leveno KJ, Bloom SL, Dashe JS, Hoffman BL, Casey BM, Sheffield JS, Spong CY (eds). William's Obstetrics 25<sup>th</sup> edition; chapter 9 Prenatal care
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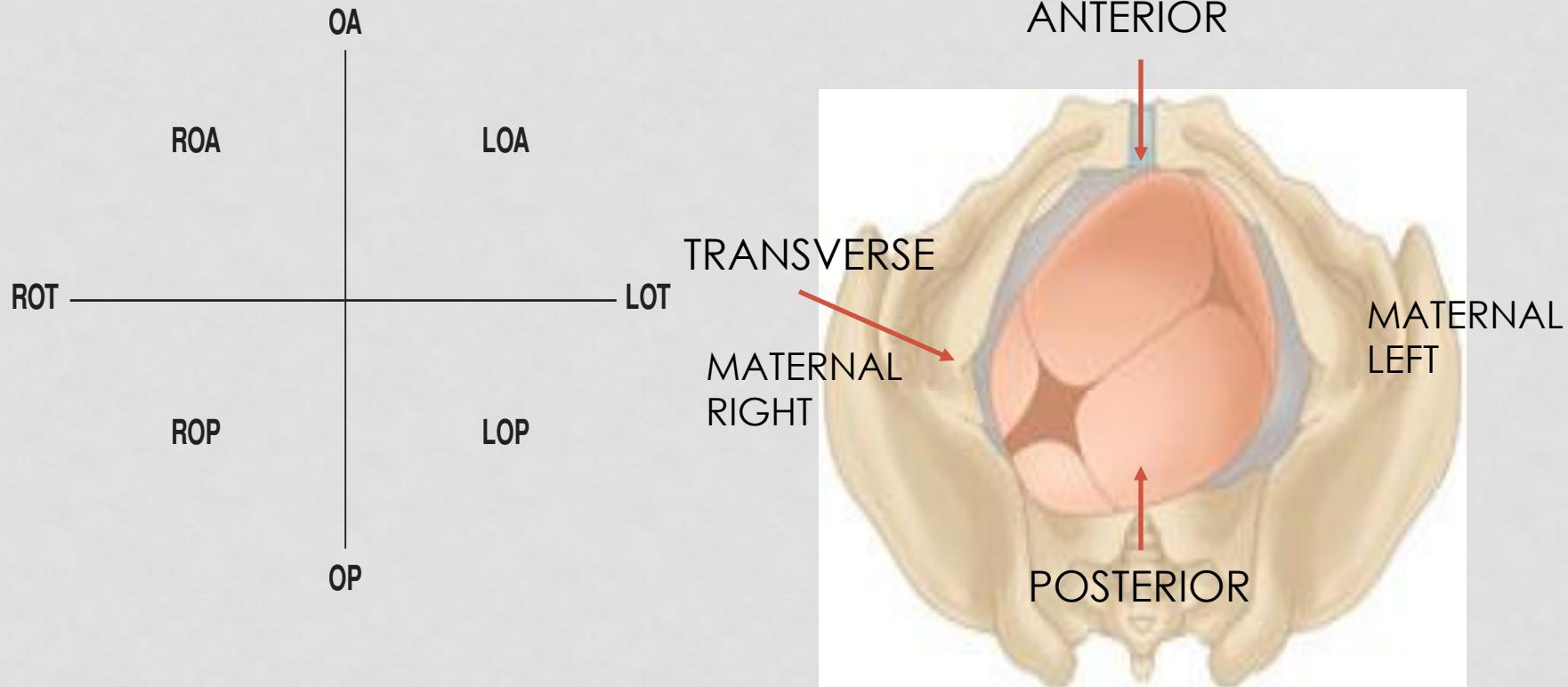
# THE PASSENGER

- Fetal position: Relationship of the chosen portion of the fetal presenting part in reference to one of the 4 quadrants or transverse diameter of birth canal



Lie: Longitudinal or vertical  
Presentation: Vertex  
Reference point: Occiput  
Attitude: Complete flexion

# FETAL POSITION



- Cunningham FG, Leveno KJ, Bloom SL, Dashe JS, Hoffman BL, Casey BM, Sheffield JS, Spong CY (eds). William's Obstetrics 25<sup>th</sup> edition; chapter 9 Prenatal care
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**LEFT OCCIPUT ANTERIOR**

# FETAL POSITION

- Approximately two thirds of all vertex presentations are in the left occiput position, and one third in the right.

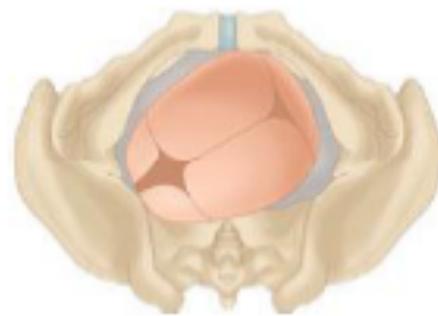
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FIG. 323.—EPISIOTOMY INCISING SKIN, FOURCHET, AND URO-GENITAL SEPTUM.

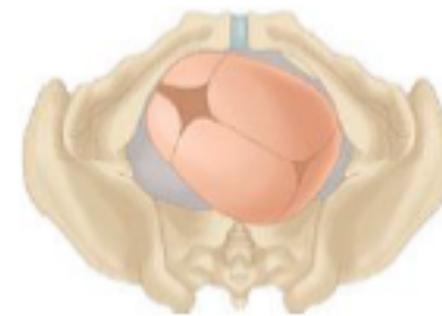
This cut exposes the fascia over the left pillar of the levator ani, which may or may not be incised, depending on the size of the child and the distensibility of the tissues.

# PRACTICE



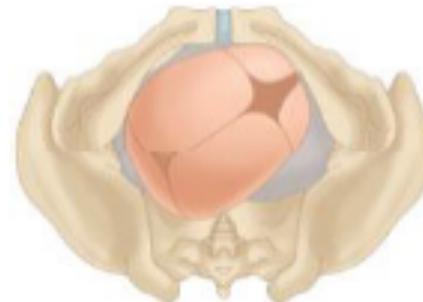
**A**

**LEFT OCCIPUT ANTERIOR**



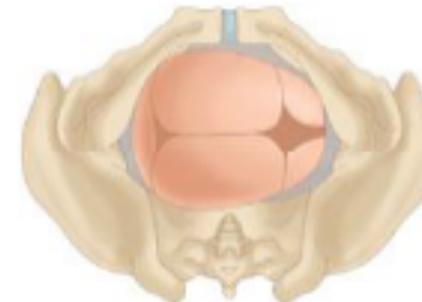
**B**

**LEFT OCCIPUT POSTERIOR**



**A**

**RIGHT OCCIPUT POSTERIOR**



**B**

**RIGHT OCCIPUT TRANSVERSE**

# FETAL POSITION

- In defining position, the following determining points are used:
- **O** – occiput (cephalic/vertex presentation)
- **M** – mentum or chin (face presentation)
- **S** – sacrum (breech presentation)
- **A** – acromion or scapula (shoulder presentation)

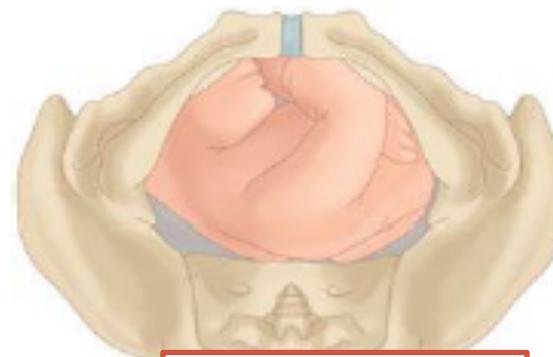
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# PRACTICE

Left mentum  
anterior

Right mentum  
anterior

Right mentum  
posterior



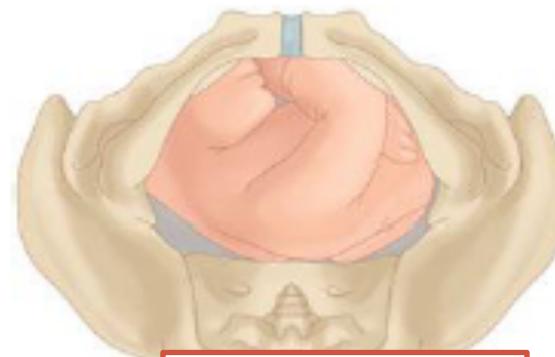
Right  
dorsoacromion

# PRACTICE

Left mentum  
anterior

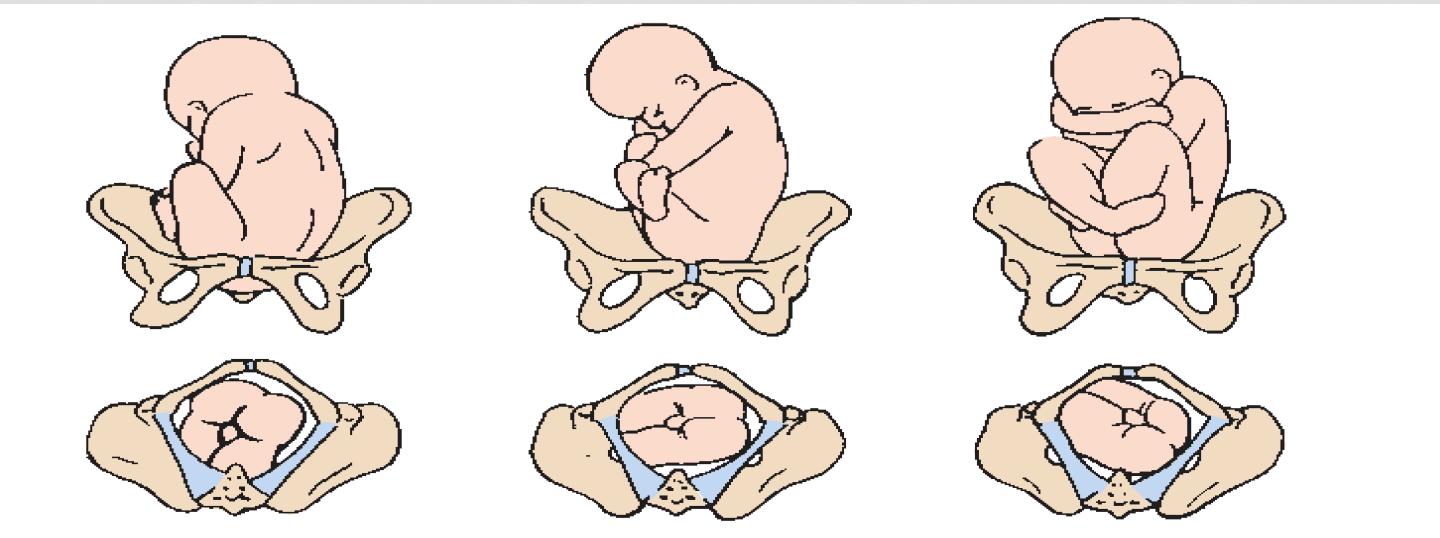
Right mentum  
anterior

Right mentum  
posterior



Right  
dorsoacromion

# PRACTICE



Left  
sacroanterior

Left  
sacrotransverse

Left  
sacroposterior

# DIAGNOSIS OF FETAL PRESENTATION AND POSITION

- **Several methods can be used to diagnose fetal presentation and position:**
  1. abdominal palpation: Leopold's maneuvers
  2. vaginal examination
  3. Auscultation
  4. Sonography/ultrasound
  5. Rarely: plain radiographs, computed tomography, or magnetic resonance imaging may be used.

- Cunningham FG, Leveno KJ, Bloom SL, Dashe JS, Hoffman BL, Casey BM, Sheffield JS, Spong CY (eds). William's Obstetrics 25<sup>th</sup> edition; chapter 9 Prenatal care
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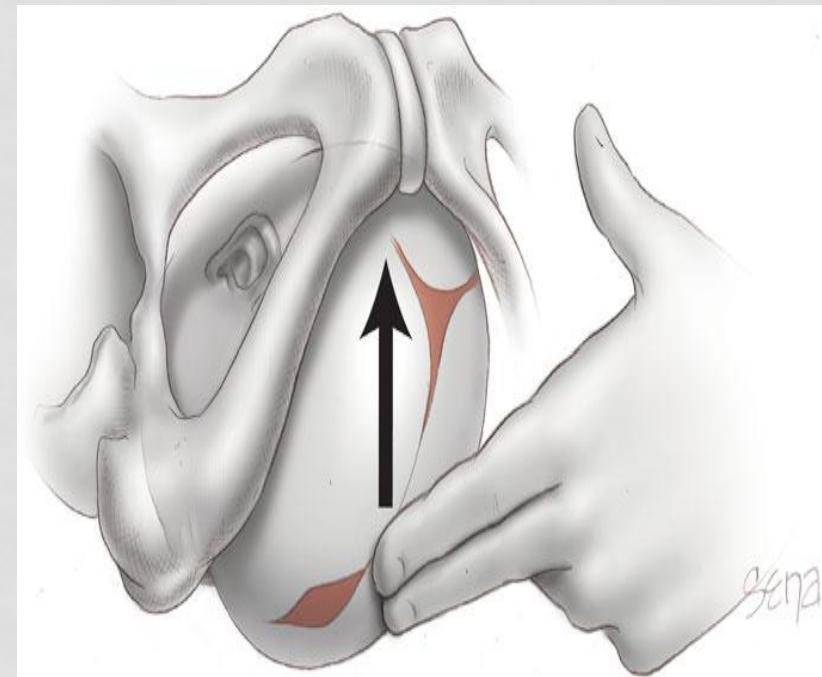
# VAGINAL EXAMINATION

- With the onset of labor and after cervical dilation, vertex presentations and their positions are recognized by palpation of the various fetal sutures and fontanelles.
- Face and breech presentations are identified by palpation of facial features and fetal sacrum

- Cunningham FG, Leveno KJ, Bloom SL, Dashe JS, Hoffman BL, Casey BM, Sheffield JS, Spong CY (eds). William's Obstetrics 25<sup>th</sup> edition; chapter 9 Prenatal care
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# VAGINAL EXAMINATION

- First, the examiner inserts two fingers into the vagina and the presenting part is found.
- Second, if the vertex is presenting, the fingers are directed posteriorly and then swept forward over the fetal head toward the maternal symphysis pubis

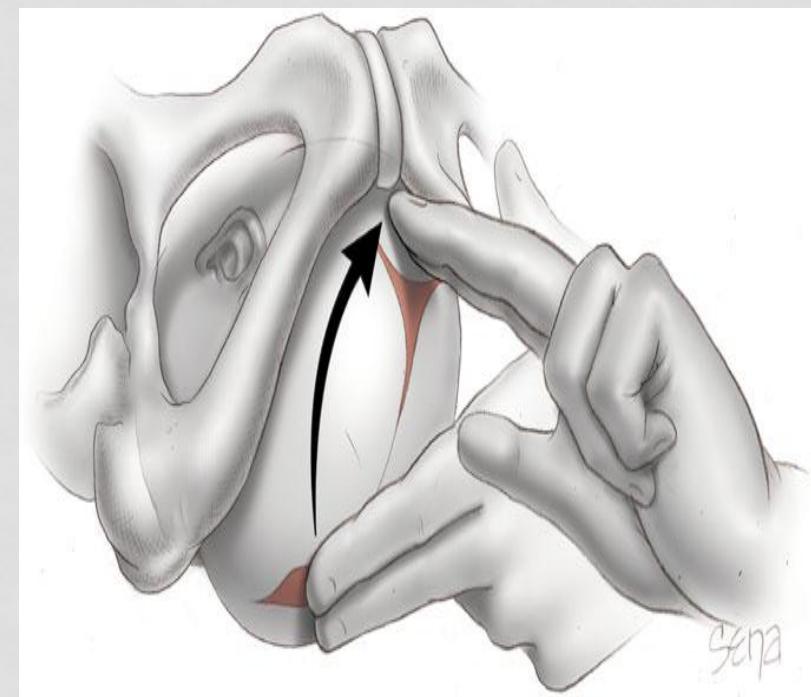


**FIGURE 22-9** Locating the sagittal suture by vaginal examination.

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- Sumpaico WW, Ocampo-Andres IS, Blanco-Capito LR, Diamante An, Gamilla ZN. (eds). Textbook of Obstetrics 3<sup>rd</sup> edition. Chapter 15 Diagnosis of Pregnancy

# VAGINAL EXAMINATION

- Next, the positions of the two fontanels are ascertained → fingers are passed to the most anterior extension of the sagittal suture, and the fontanel encountered there is examined and identified.
- With a sweeping motion, the fingers pass along the suture to the other end of the head until the other fontanel is felt and differentiated

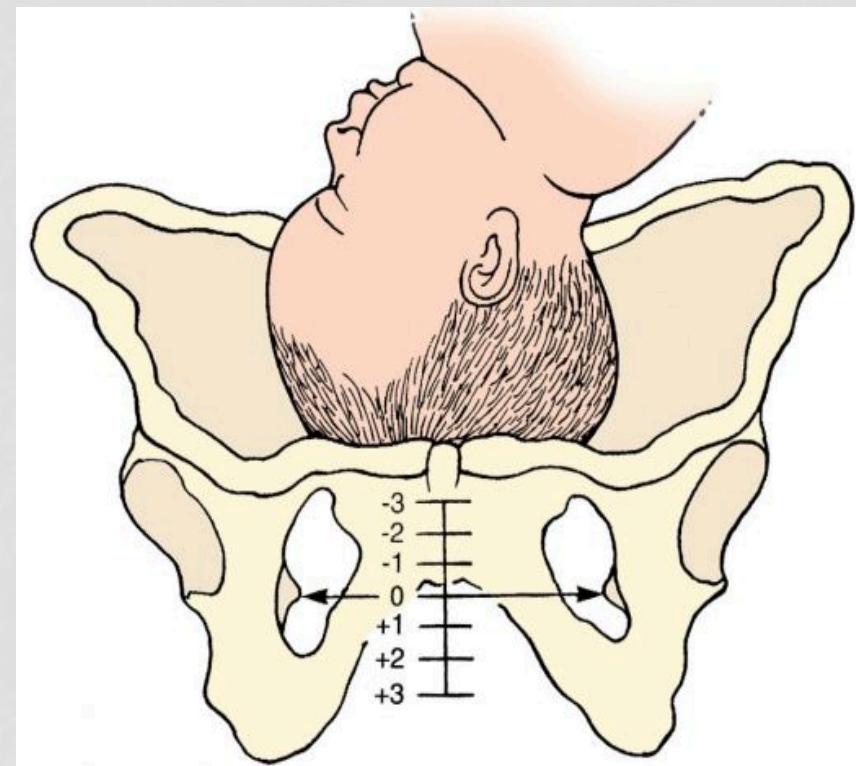


**FIGURE 22-10** Differentiating the fontanelles by vaginal examination.

- Cunningham FG, Leveno KJ, Bloom SL, Dashe JS, Hoffman BL, Casey BM, Sheffield JS, Spong CY (eds). William's Obstetrics 25<sup>th</sup> edition; chapter 9 Prenatal care
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# VAGINAL EXAMINATION

- Last, the station, or extent to which the presenting part has descended into the pelvis, can also be established at this time
- Iliac spines: station 0



- Cunningham FG, Leveno KJ, Bloom SL, Dashe JS, Hoffman BL, Casey BM, Sheffield JS, Spong CY (eds). William's Obstetrics 25<sup>th</sup> edition; chapter 9 Prenatal care
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# LEOPOLD'S MANEUVERS

# LEOPOLD'S MANEUVER

- Abdominal exam to determine fetal presentation



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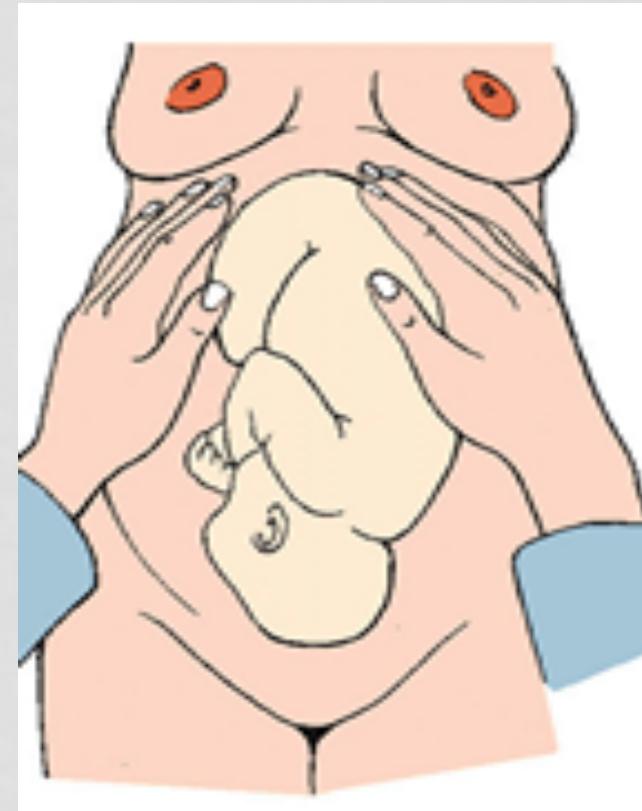
# LEOPOLD'S MANEUVER

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

- “Fundal grip”
- Uterine fundus is palpated to determine 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, Dashe JS, Hoffman BL, Casey BM, Sheffield JS, Spong CY (eds). William's Obstetrics 25<sup>th</sup> edition; chapter 9 Prenatal care
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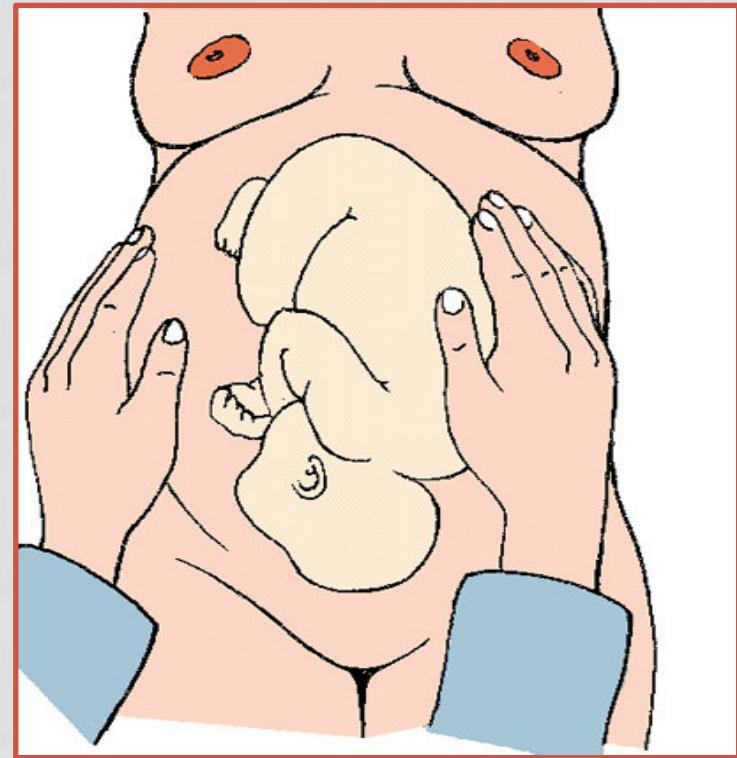
# LEOPOLD'S MANEUVER

## 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, Dashe JS, Hoffman BL, Casey BM, Sheffield JS, Spong CY (eds). William's Obstetrics 25<sup>th</sup> edition; chapter 9 Prenatal care
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# LEOPOLD'S MANEUVER

## 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*



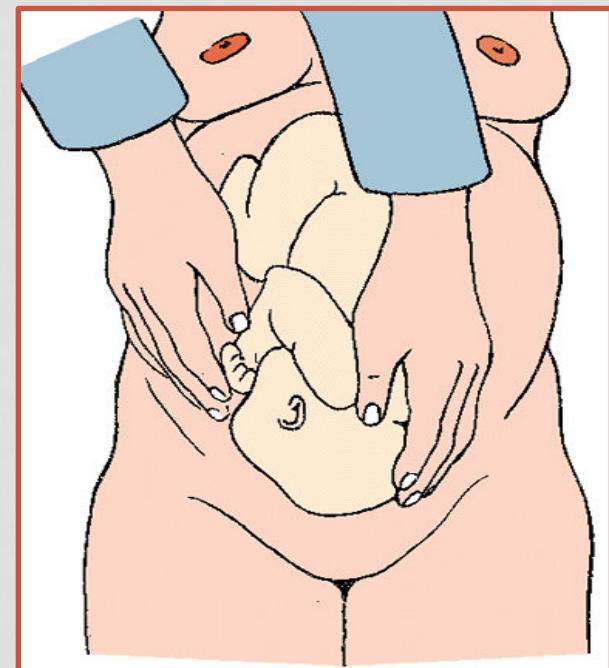
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# LEOPOLD'S MANEUVER

## 4. Leopold's maneuver #4 (LM4)

- “Pelvic grip”
- Palpation of the bilateral lower quadrants to determine engagement 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 back → fetal head is extended

- Cunningham FG, Leveno KJ, Bloom SL, Dashe JS, Hoffman BL, Casey BM, Sheffield JS, Spong CY (eds). William's Obstetrics 25<sup>th</sup> edition; chapter 9 Prenatal care
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# SUMMARY / REVIEW

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  - transverse
  - longitudinal
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  - Cephalic
  - breech
  - compound
  - shoulder
4. Fetal position
5. Leopold's maneuvers

# RX PRESCRIPTION

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# Thank you!

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