MNEMONIC

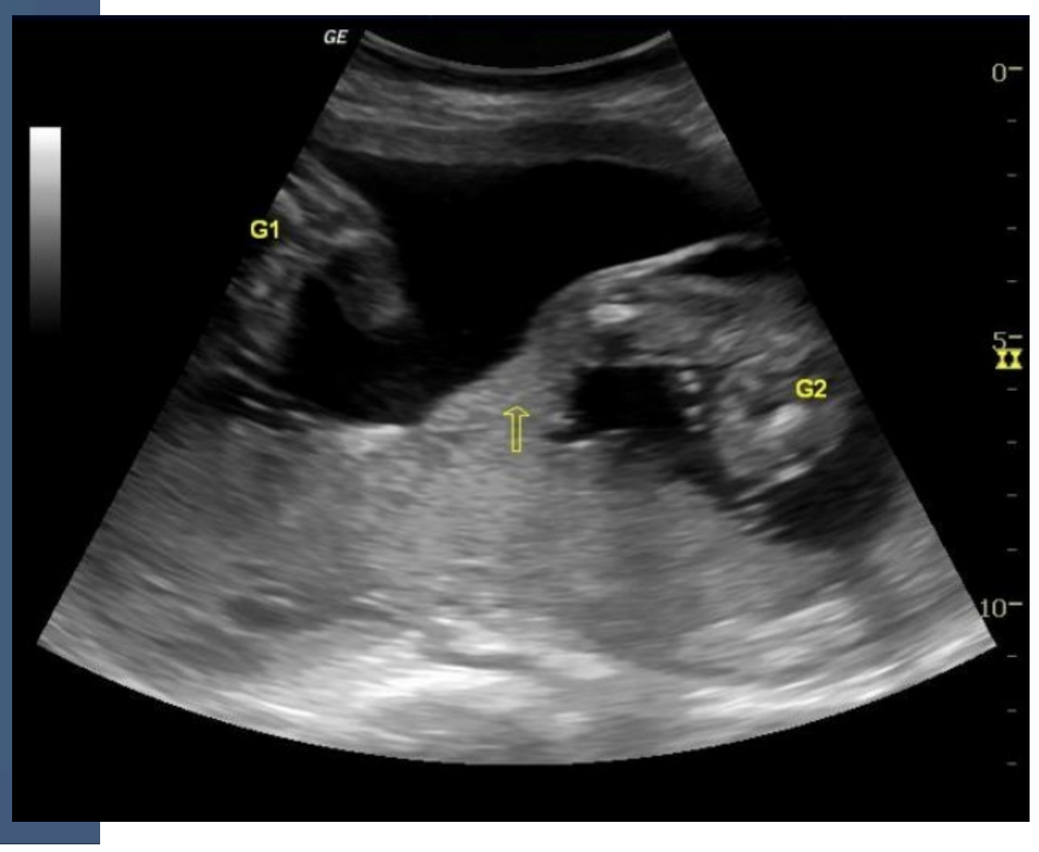
Dichorionic Diamniotic

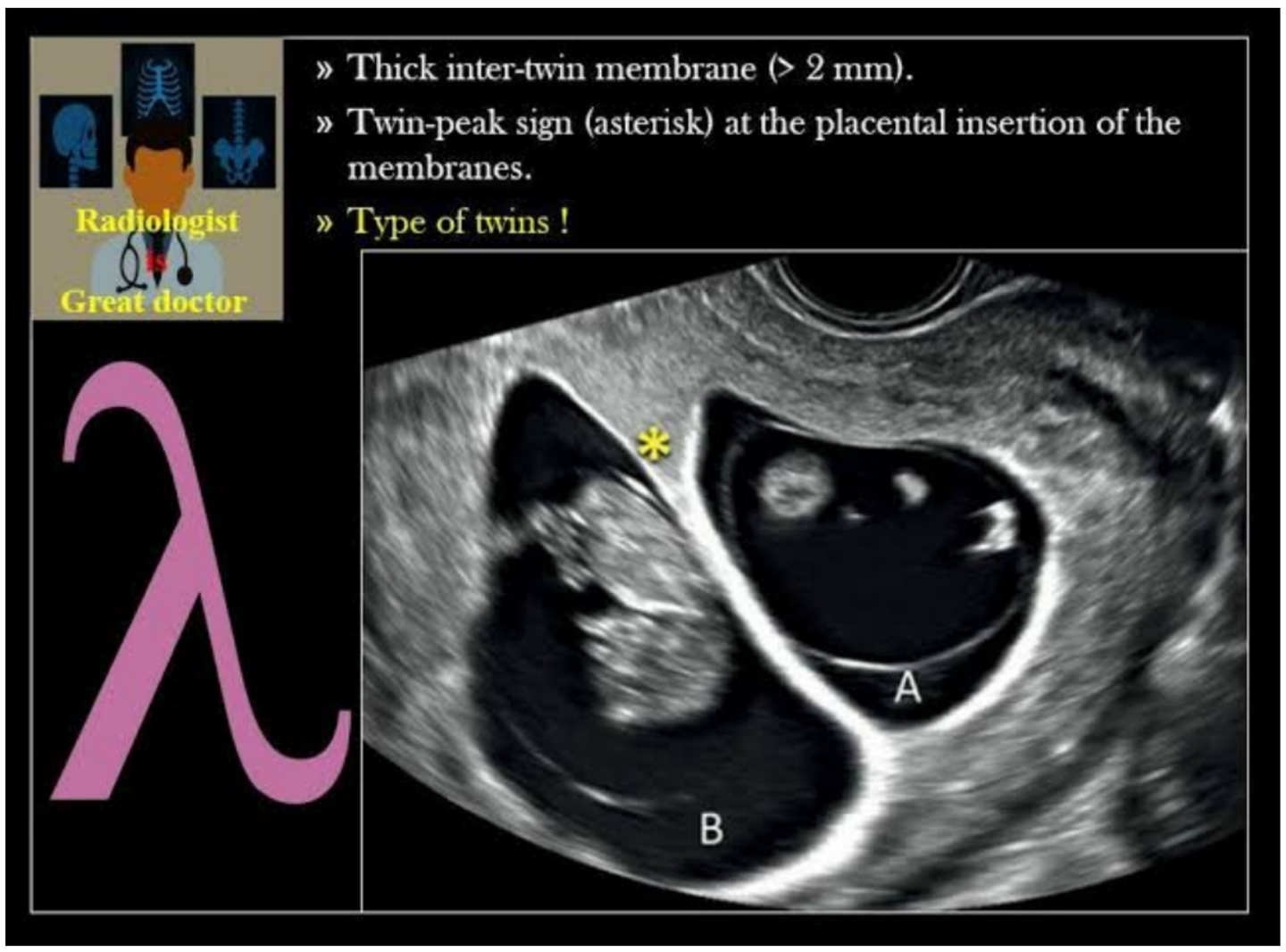
LaDDu

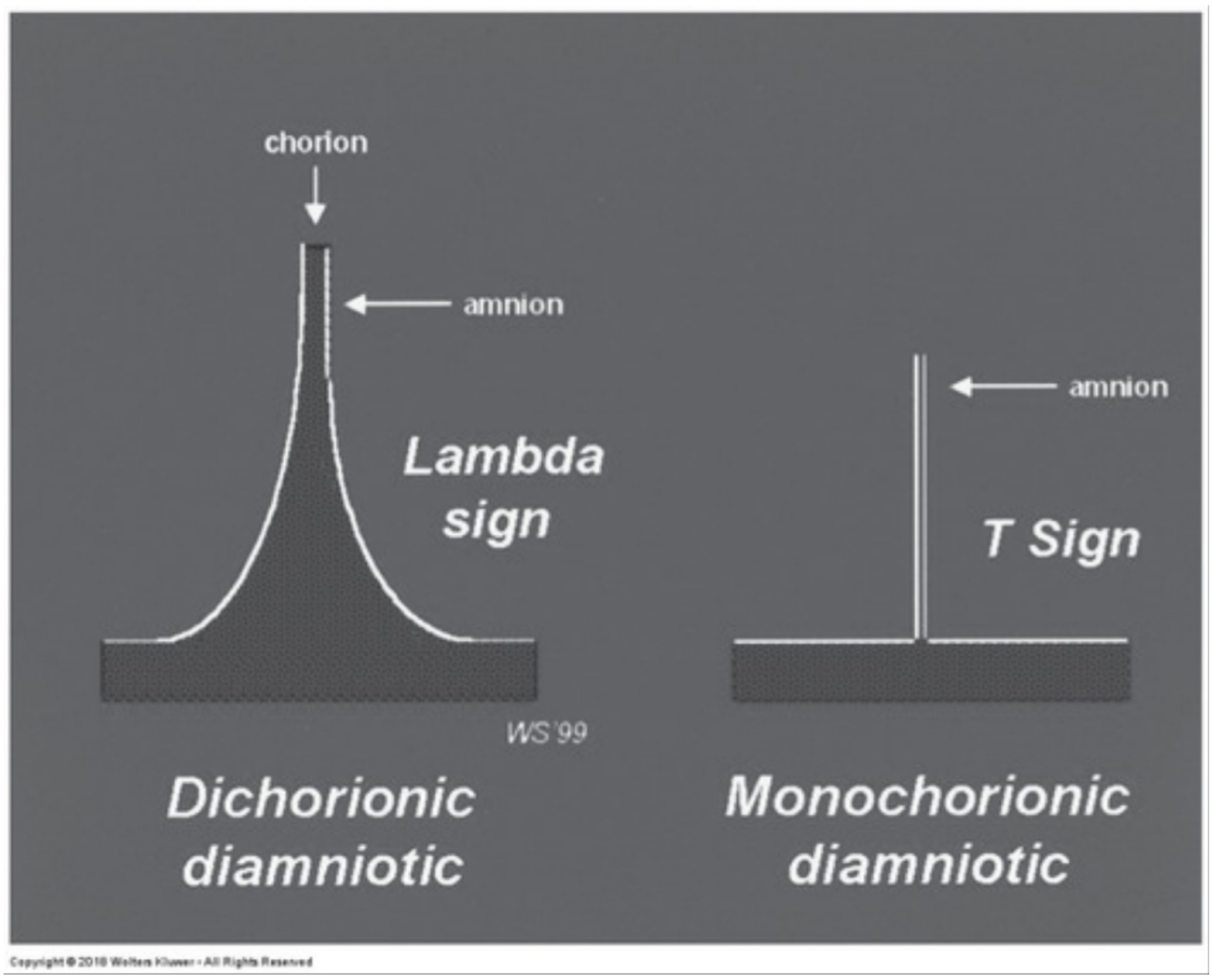
» L - Lambda sign (λ)

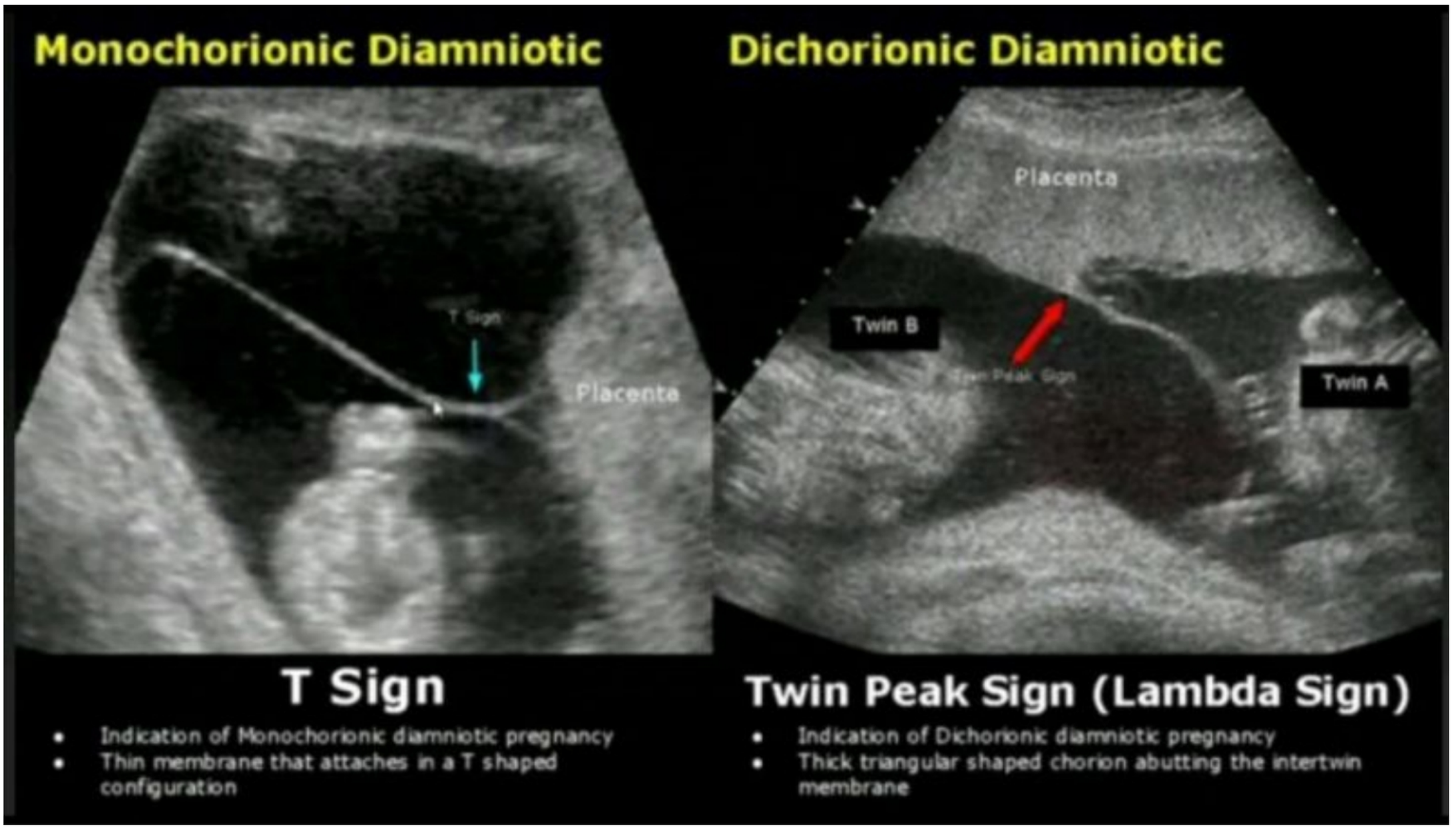
» D - Dichorionic

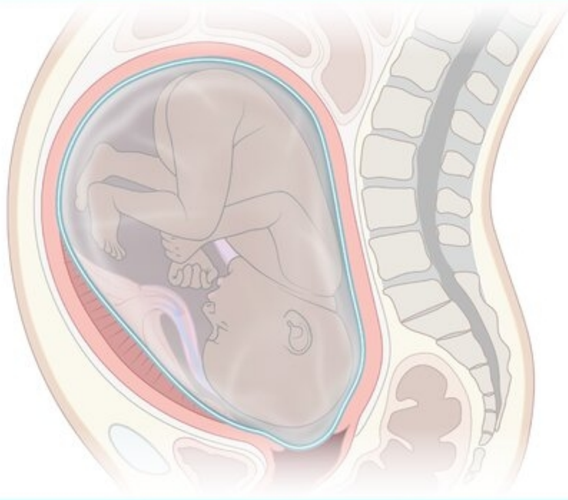
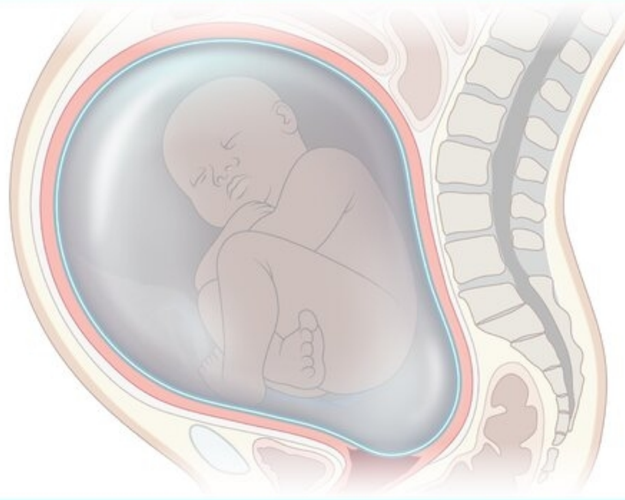
D - Diamniotic



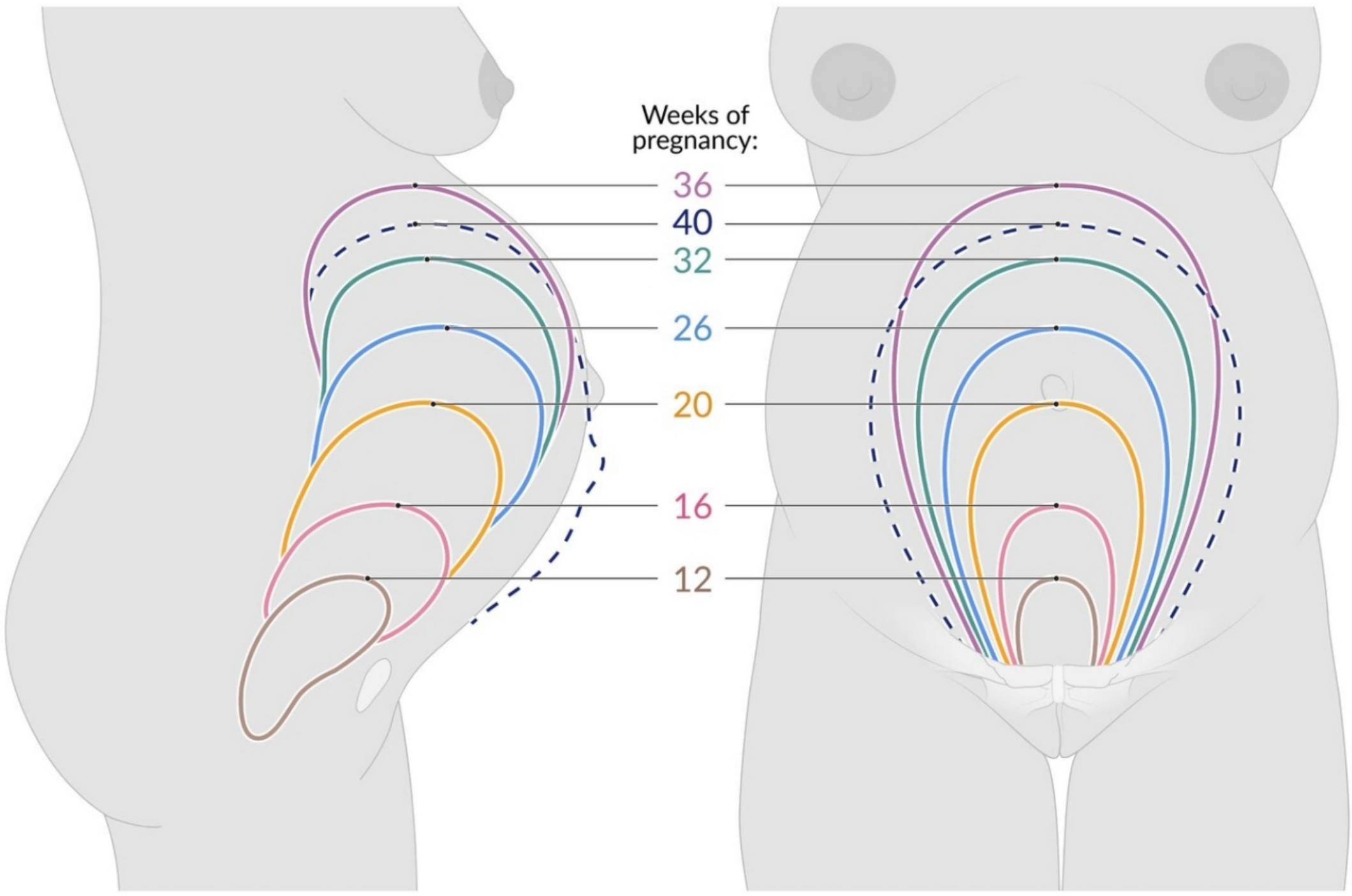




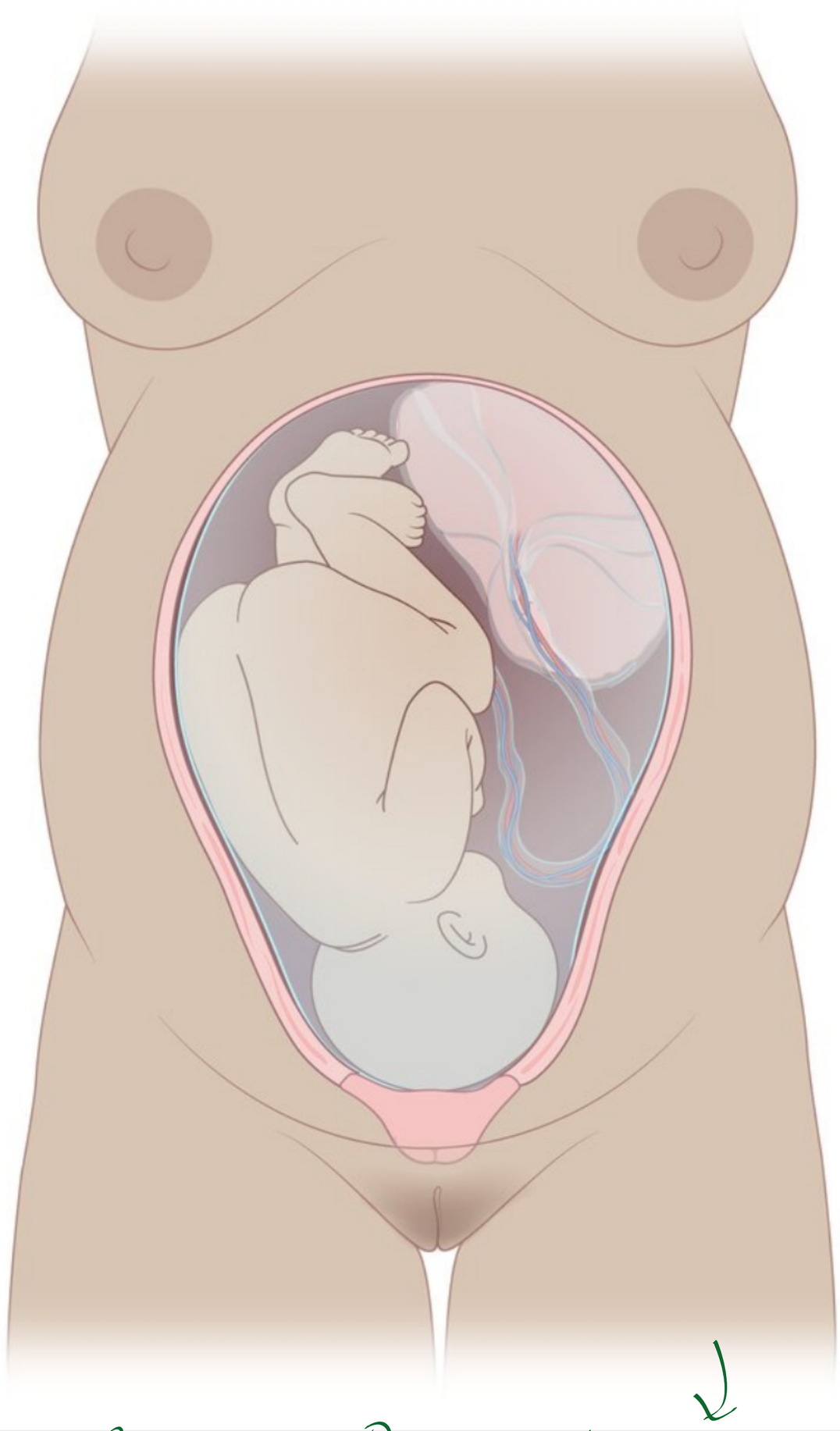


	Oligohydramnios	Polyhydramnios
		
Definition	• Amniotic fluid volume is less than expected for gestational age	• Amniotic fluid volume is more than expected for gestational age
Etiology	• Idiopathic (most common cause of mild oligohydramnios) • Fetal anomalies, e.g., urethral obstruction, bilateral renal agenesis, autosomal recessive polycystic kidney disease • Maternal conditions, e.g., placental insufficiency, late or postterm pregnancies (> 42 weeks of gestation), premature rupture of membranes	• Idiopathic (most common) • Fetal anomalies, e.g., gastrointestinal (esophageal atresia, duodenal atresia and stenosis), CNS (anencephaly, meningomyelocele), pulmonary (cystic lung malformations), twin-to-twin transfusion syndrome, fetal anemia • Maternal conditions, e.g., diabetes mellitus, Rh incompatibility
Diagnosis	• Decreased fundal height • Ultrasound: amniotic fluid index < 5 cm, fetal anomalies	• Increased fundal height • Ultrasound: amniotic fluid index ≥ 25 cm, fetal anomalies
Treatment	• Amniotransfusion • Treat underlying cause	• Amnioreduction • Treat underlying cause
Complications	• Intrauterine growth restriction • Birth complications • Potter sequence: pulmonary hypoplasia, craniofacial abnormalities, wrinkling of the skin, limb anomalies	• Fetal malposition • Umbilical cord prolapse • Premature birth

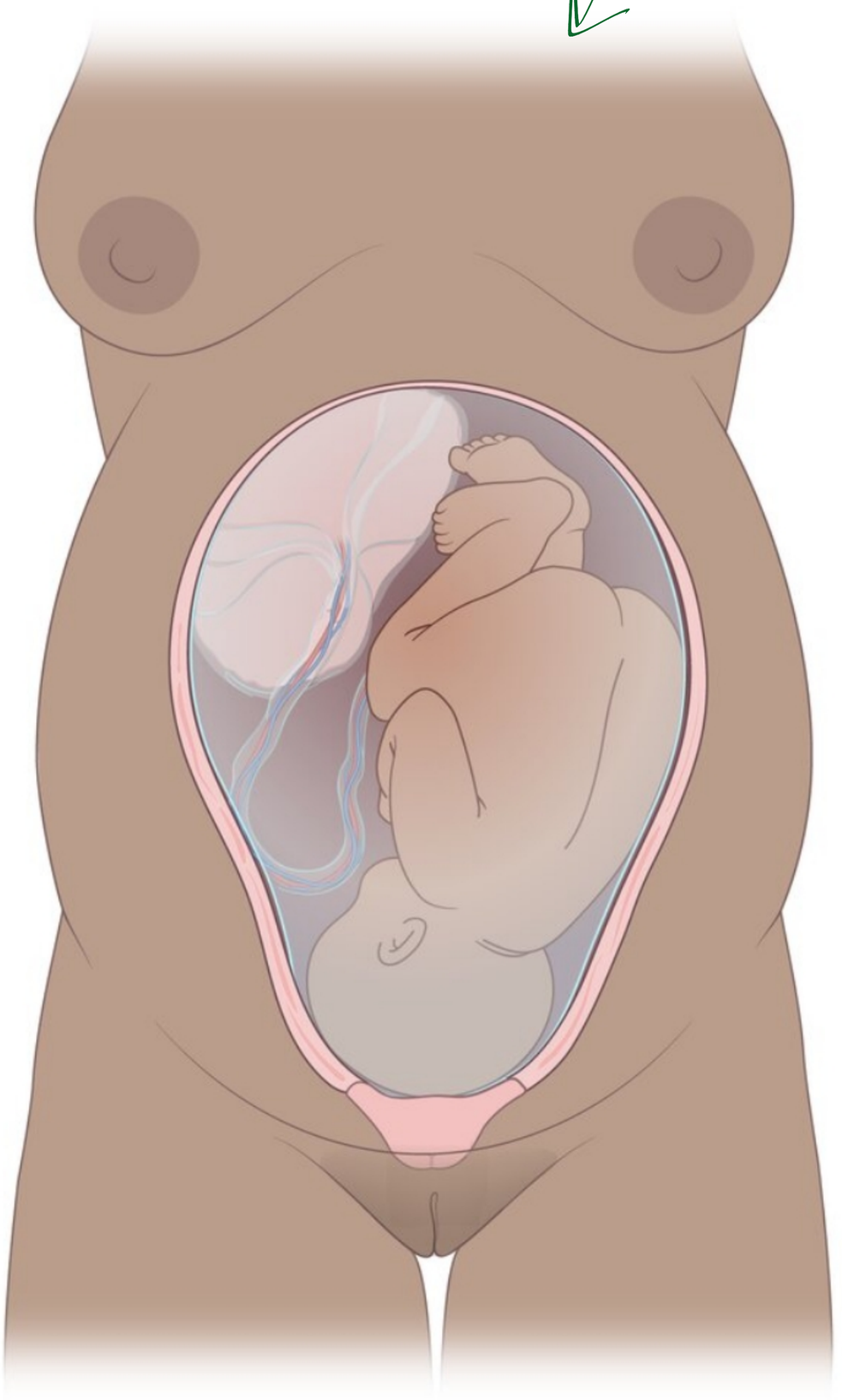
Fundal height and gestational age [11][13]	
Week of pregnancy	**Fundal height during pregnancy**
12th	Just above the symphysis
16th	Between the symphysis and navel
20– 24th	Navel
32nd	Between the navel and xiphoid
36th	Peak: at the costal arch
40th	Two finger widths below the costal arch



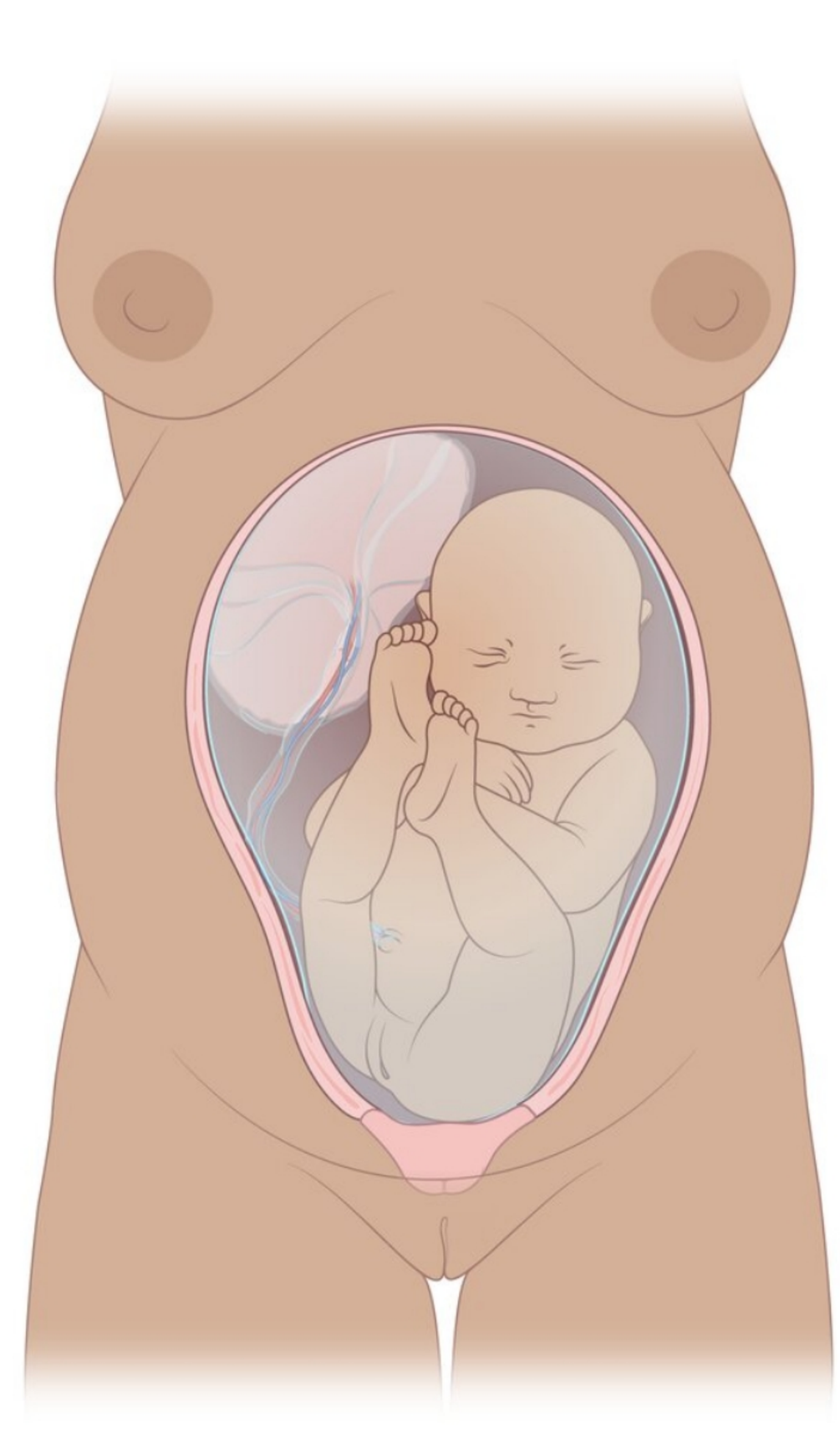
Transverse fetal lie



Cephalic Presentation
(Right occiput anterior)
Child's back faces towards
mother's right



Cephalic Presentation
(Left occiput anterior)



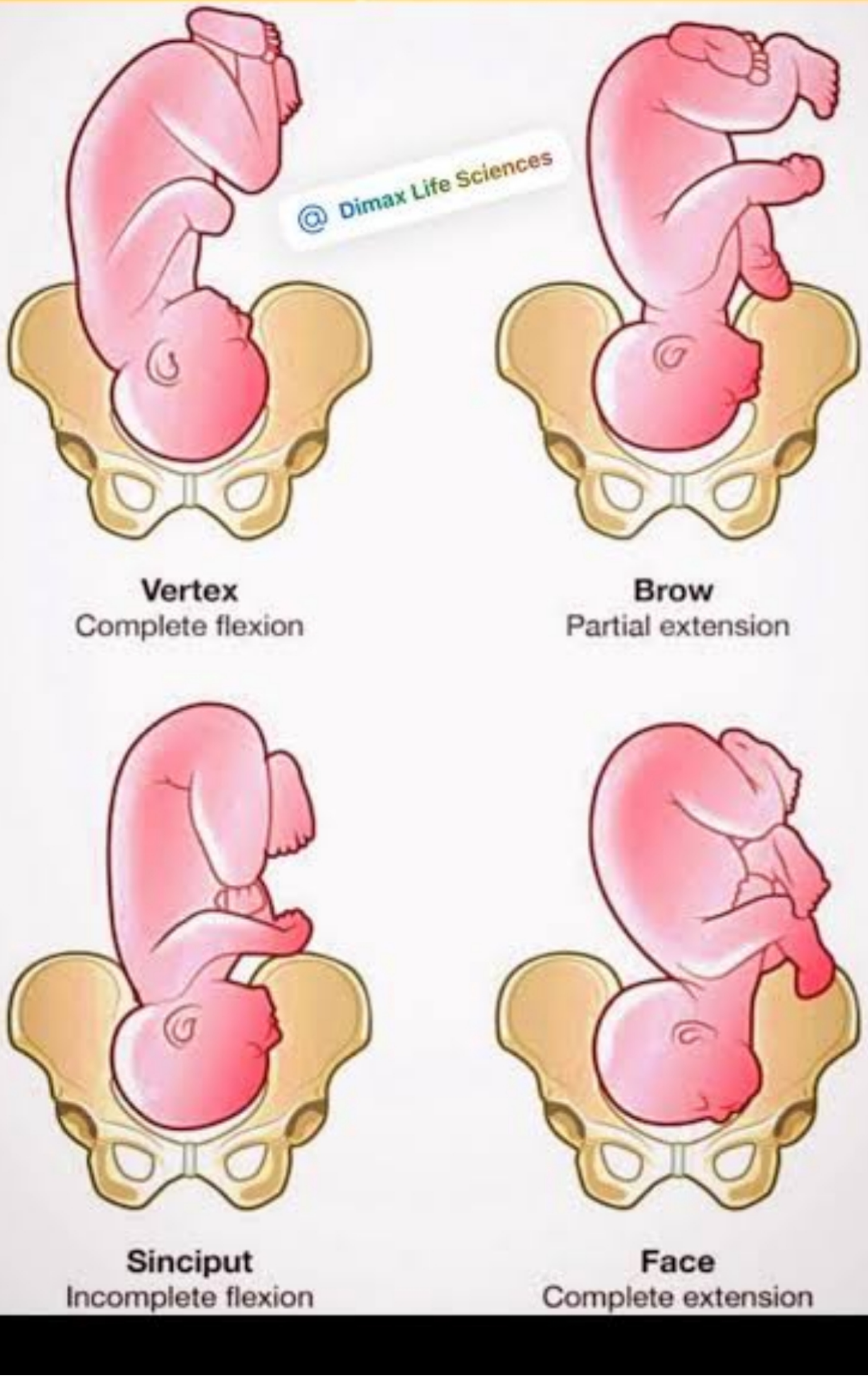
Frank Breech
(Flexed hips and extended knees)

Single Footling Breech
(one foot/leg is stretched to be delivered first)

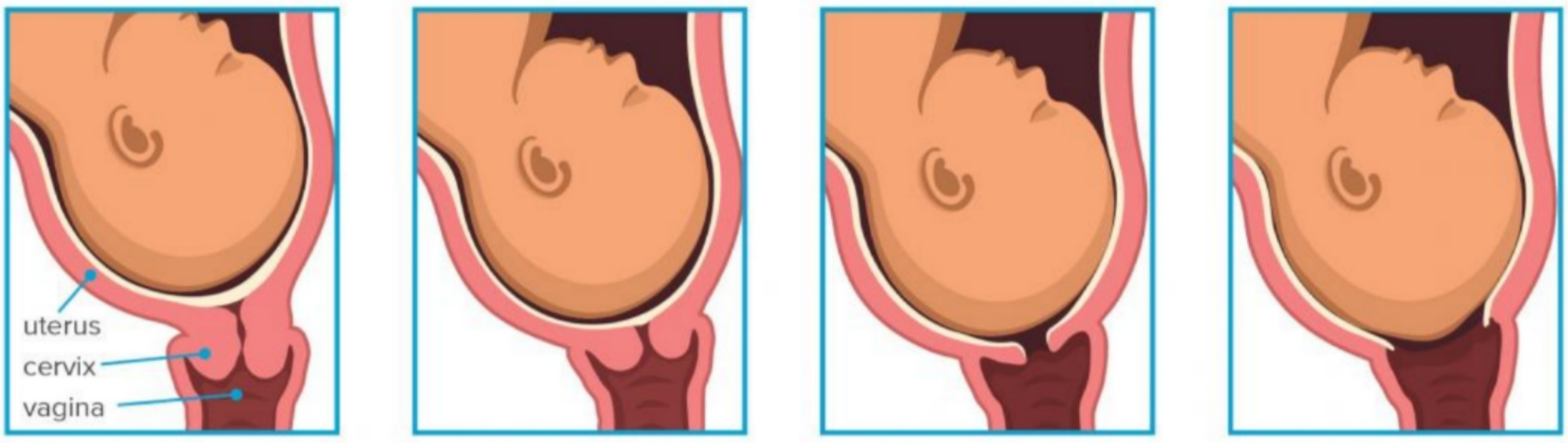
Comple Breech
(Both hips and knees are flexed with feet close to the buttocks)

Double Footling Breech
(both feet/legs are stretched to be delivered first)

Fetal attitude in cephalic presentation



Cervical Effacement

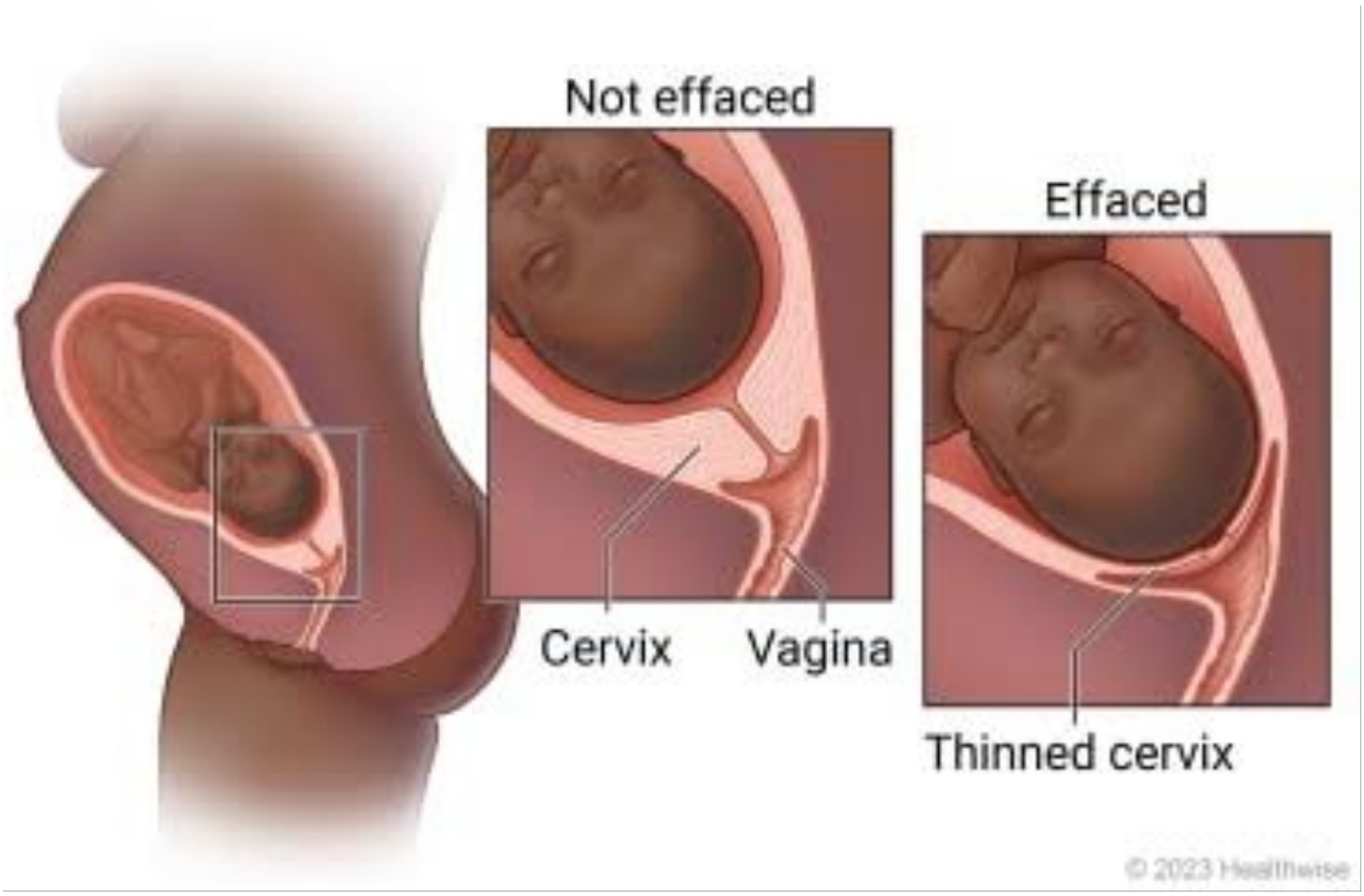


Cervix is not effaced or dilated

Cervix is 50% effaced and not dilated

Cervix is 100% effaced and dilated to 3 cm

Cervix is fully dilated to 10 cm



Leopold maneuvers [22][85]

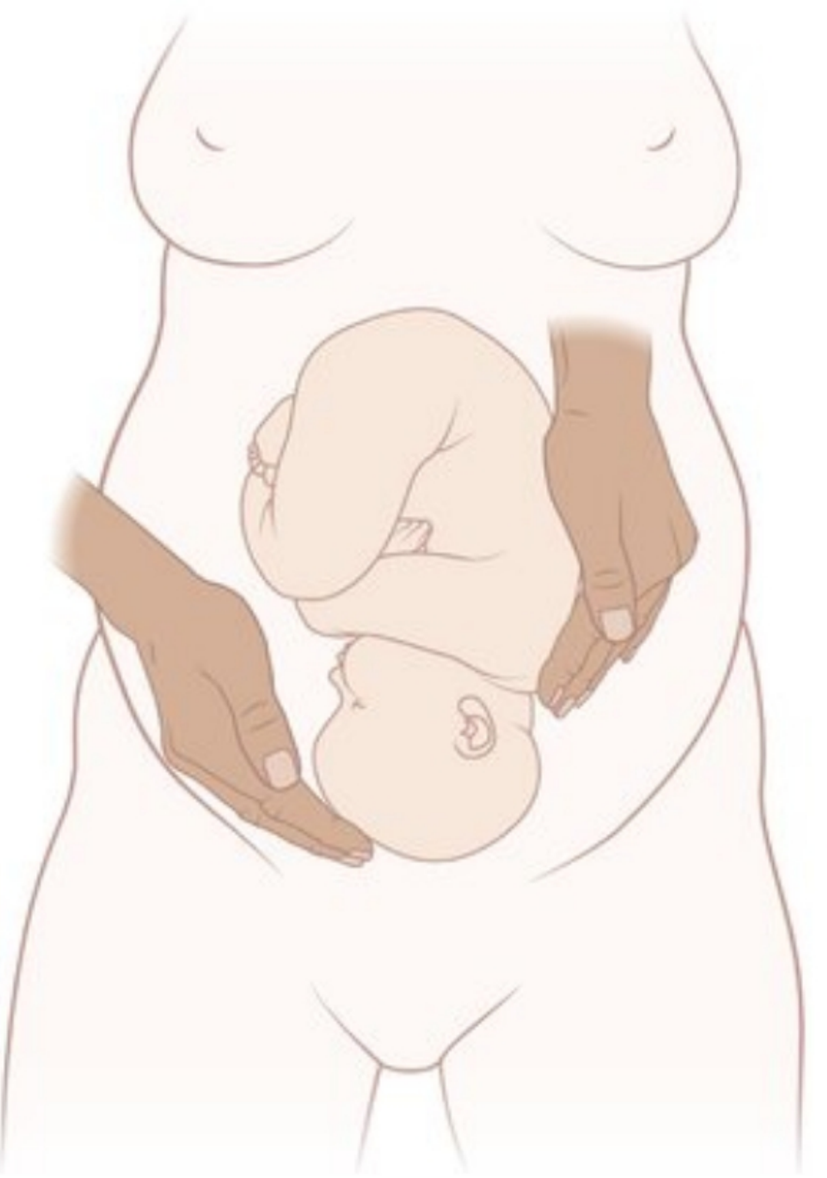
- The Leopold maneuvers consist of four abdominal palpation maneuvers used to determine fetal lie, fetal presentation, and fetal position in utero.
  1. Use both hands to palpate the uterine fundus, fetal head, and buttocks to assess:
     - Fetal lie (longitudinal/oblique/transverse)
     - Fundal height
  2. Place each hand on either side of the maternal abdomen to determine the location of the fetal back.
  3. Grasp the lower maternal abdomen above the symphysis to determine the fetal presenting part and if it is engaged.
     - In cephalic presentation, the fetal head is felt as hard, round, and ballottable.
     - In breech presentation, the buttocks are felt as a soft, less movable structure.
  4. Facing the mother's feet, use both hands to determine:
     - The cephalic prominence
     - Fetal attitude (based on the degree of flexion of the fetus's head)
- If abnormal presentation (e.g., breech) is suspected or fetal position cannot be accurately determined, proceed to ultrasound. [86][87]

Leopold's maneuvers

First maneuver

Second maneuver

Third maneuver



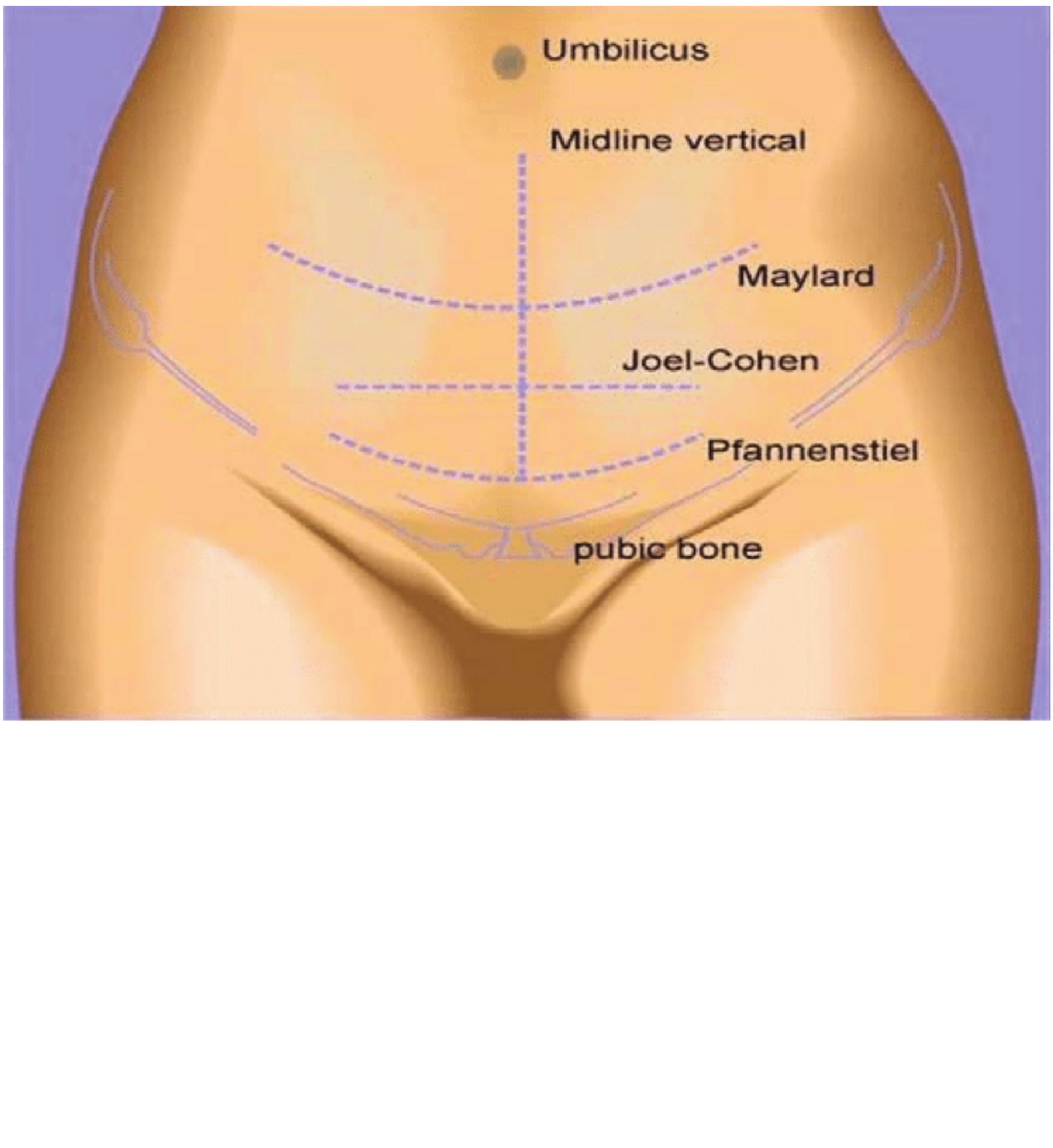
Fourth maneuver

Bishop score

Bishop score [32]				
	Score			
	0 points	1 point	2 points	3 points
Cervical position	Posterior	Midline	Anterior	
Cervical consistency	Firm	Moderately firm	Soft (ripe)	
Cervical effacement	≤ 30%	31–50%	51–80%	> 80%
Cervical dilation	Closed	1–2 cm	3–4 cm	≥ 5 cm
Fetal station	-3 cm	-2 cm	-1/0 cm	+1/+2 cm

Simpson forceps	Kielland forceps	Piper forceps	Barton forceps
			


TYPES OF CESAREAN INCISION
Midline
Joel-Cohen
Pfannenstiel
shutterstock.com · 2625600771


Umbilicus
Midline vertical
Maylard
Joel-Cohen
Pfannenstiel
pubic bone

Apgar Scoring System

Indicator		0 Points	1 Point	2 Points
A	Activity (muscle tone)	Absent	Flexed limbs	Active
P	Pulse	Absent	< 100 BPM	> 100 BPM
G	Grimace (reflex irritability)	Floppy	Minimal response to stimulation	Prompt response to stimulation
A	Appearance (skin color)	Blue Pale	Pink body Blue extremeties	Pink
R	Respiration	Absent	Slow and irregular	Vigorous cry

HIE Help Center
hiehelpcenter.org

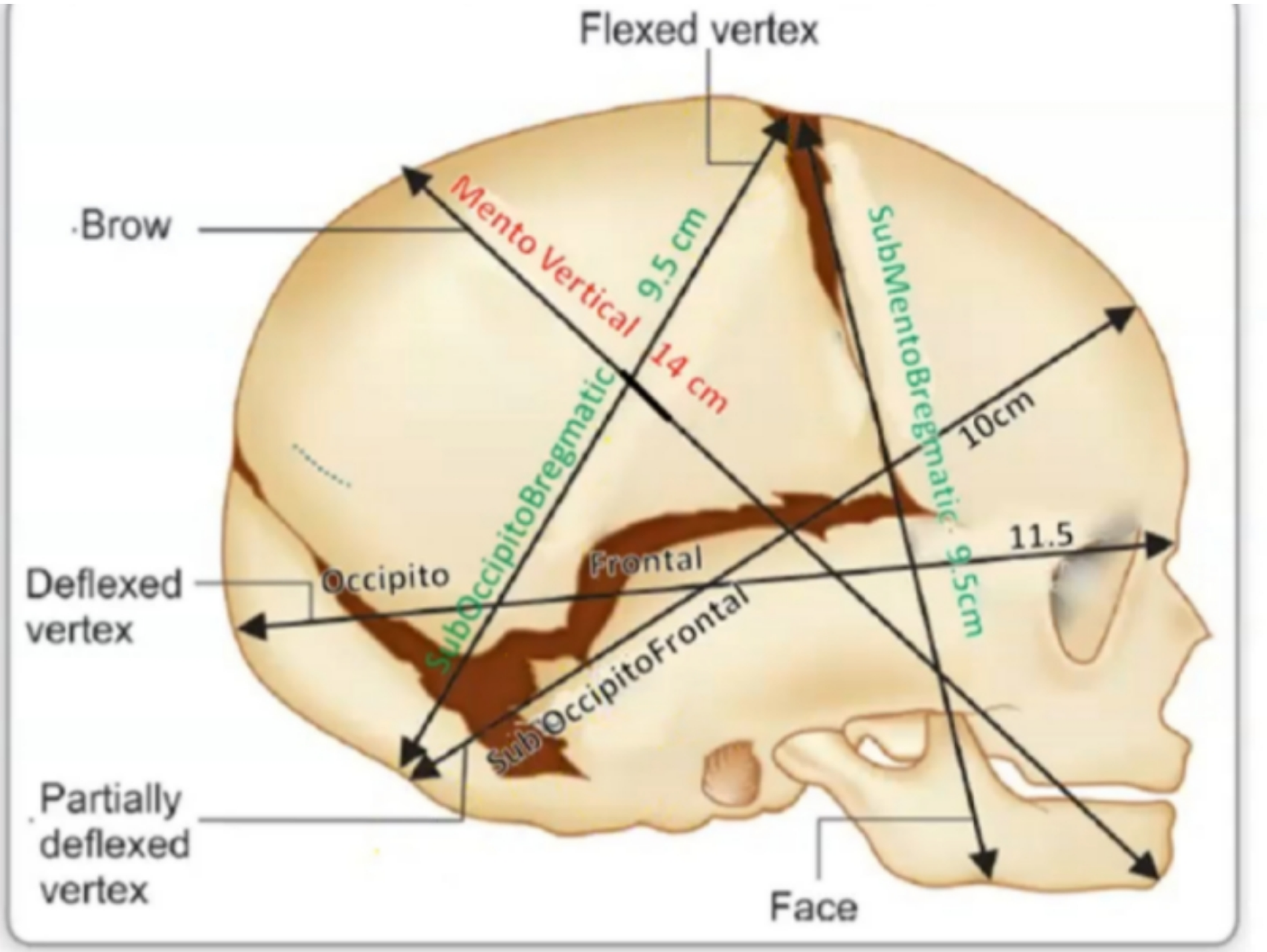
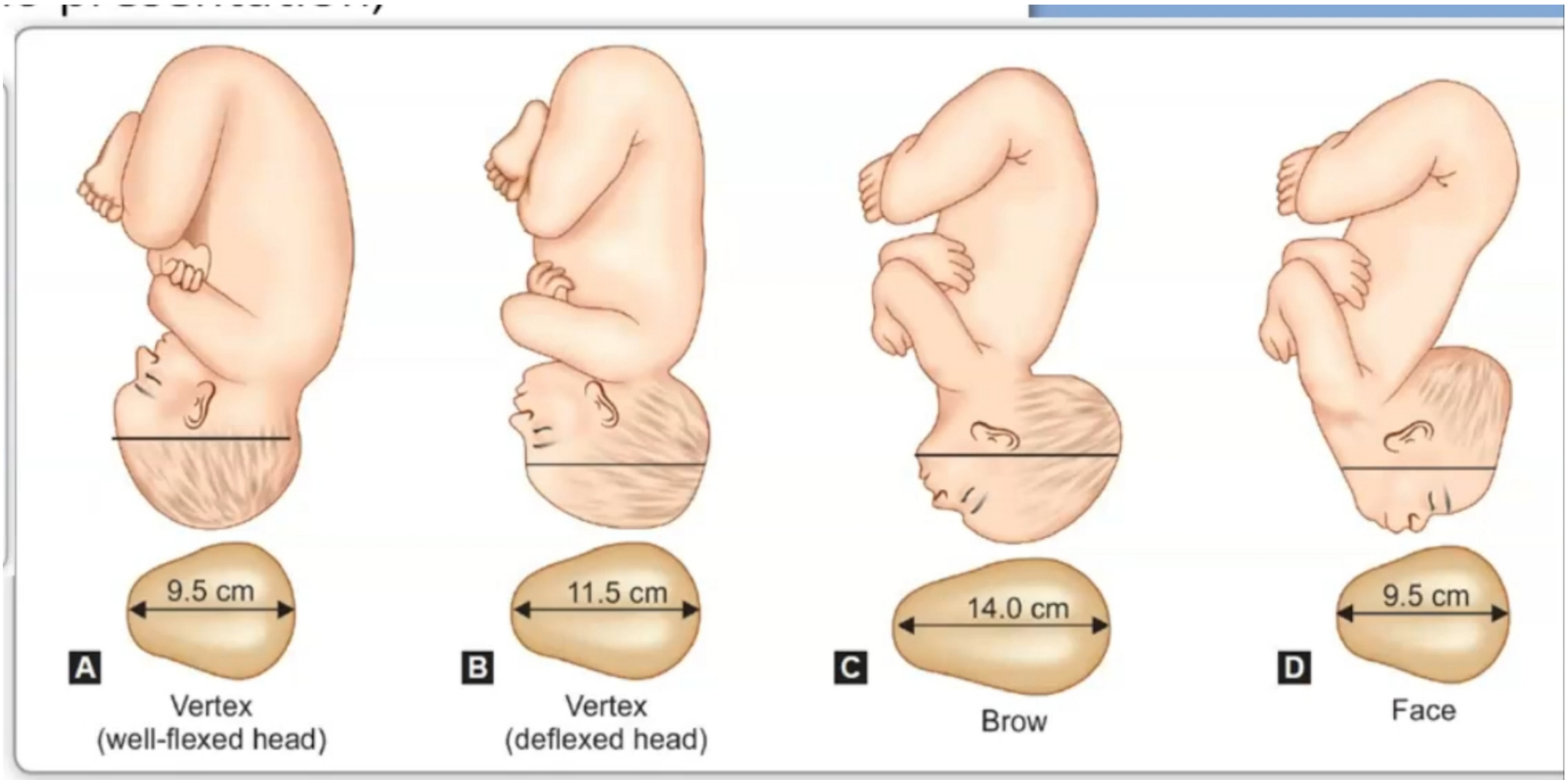


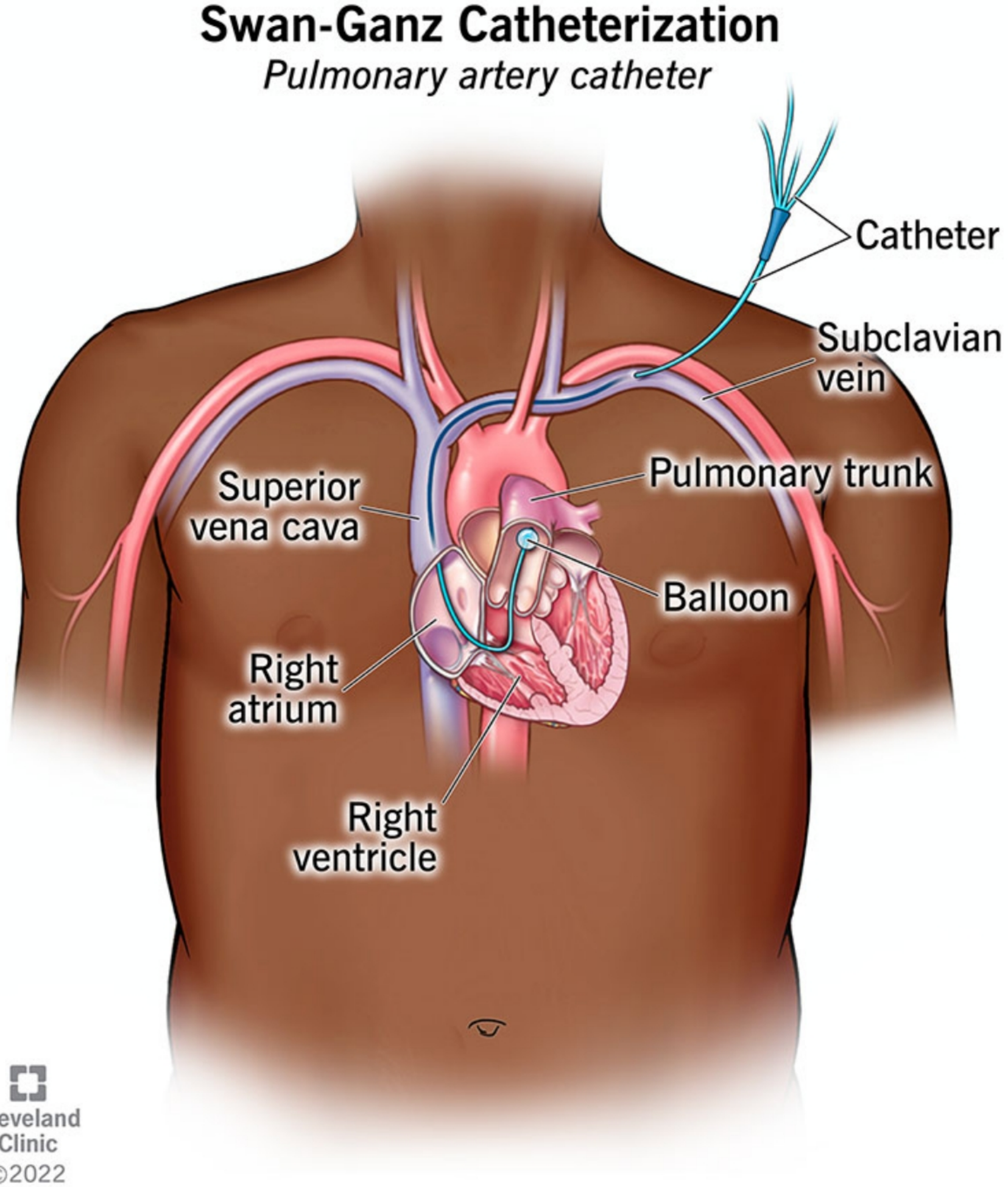
Fig. 9.3: The important landmarks of fetal skull



Figs 8.2A to D: Varieties of cephalic presentations in different attitude

Swan-Ganz Catheterization

Pulmonary artery catheter



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I.V Fluids

◄ Type of I.V fluid at the time of infusion

Type of I.V fluid at the time of infusion	What happens after administration of IV?	Example
Hypotonic	Water will move from ECF into ICF	• Distilled Water • 0.45% NaCl(1/2NS) • 0.33% NaCl(1/3NS)
Isotonic	It will remain in the ECF	• NS (0.9% NaCl) • Ringers Lactate 2/3 • DW-1/3 NS • 5% Dextrose in Water(D5W)
Hypertonic	Water will move from ICF to ECF	• 3% NaCl • 10%-50% Dextrose • D5W-1/2 NS • D5NS (5%Dextrose in NS) • Amino acid solution

◄ General rules of IV fluids

- Before giving any type of I.V fluids you have to think of:
  - type of solution
  - amount
  - rate
  - duration
  - You have to reassess the patient to see if you should continue with what you gave or not. etc.
- When your aim to **resuscitate** the patient, then you **look at the blood pressure**. On the other hand, if you want **maintain** the fluid level then you have to **assess the input and output**
- An NPO 40 year old female having a normal blood pressure waiting for a lab call should be given D5 1⁄2 NS + 20 KCl + 1 cc/kg/hr. K is added to hypotonic fluids

◄ Intravenous solutions (crystalloids vs colloids)

Crystalloids

- Intravenous solutions that contain solutes that readily cross the capillary membrane (electrolytes).
- Examples: Dextrose & electrolyte solutions

Colloids[1] (PRBC)

- Intravenous solutions (IV 300mL) that DO NOT readily cross the capillary membrane **and will stay intravascular** (non-electrolytes large molecules)
- Examples: Blood, albumin[2], plasma.

- **Pure Water CAN'T be given IV, it's a hypotonic fluid thus it will go inside the RBC causing them to swell and burst (hemolysis) and damage the lining of the capillary wall (thrombophlebitis).**

Syndrome of inappropriate ADH

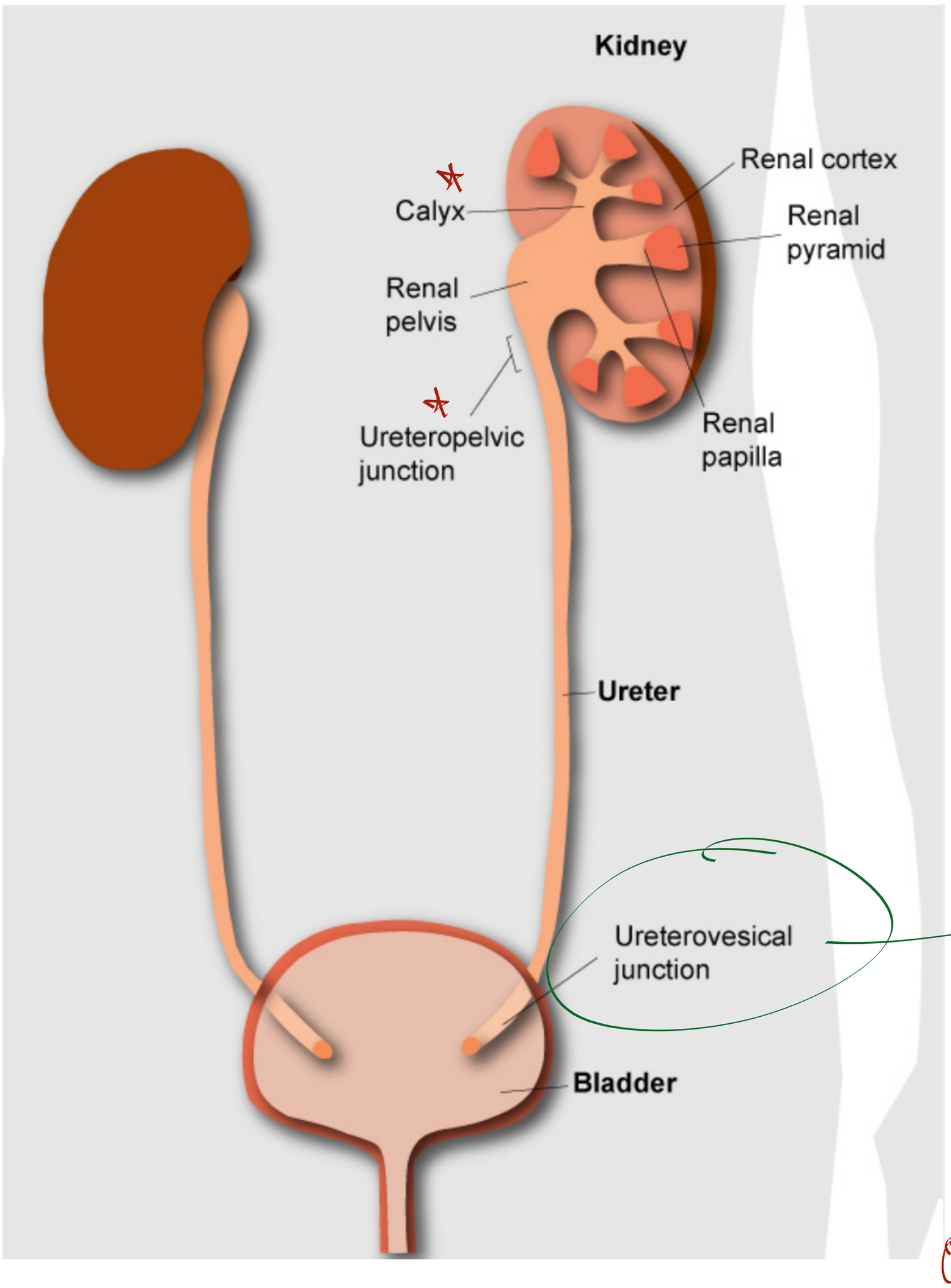
◀ Causes

- **Tumours**
- **Central nervous system disorders:** stroke, trauma, infection, psychosis, porphyria
- **Pulmonary disorders:** pneumonia, tuberculosis, obstructive lung disease
- **Drugs:** anticonvulsants, psychotropics, antidepressants, cytotoxics, oral hypoglycaemic agents, opiates
- **Idiopathic**

◀ Diagnosis

1. **Low plasma sodium concentration (typically < 130 mmol/L)**
2. **Low plasma osmolality (< 275 mOsmol/kg)**
3. Urine osmolality not minimally low (typically > 100 mOsmol/kg)
4. Urine sodium concentration not minimally low (> 30 mmol/L)
5. Low–normal plasma urea, creatinine, uric acid
6. **Clinical euvolaemia**
7. Absence of adrenal, thyroid, pituitary or renal insufficiency
8. No recent use of diuretics
9. Exclusion of other causes of hyponatraemia
10. Appropriate clinical context

Nephrolithiasis



most common site of stone impaction

Other sites:
- Calyx of kidney
- Uretero pelvic junction
- Intersection of ureter and iliac vessels (near the pelvic brim)

KIDNEY STONES

RADIOPAQUE

CALCIUM STONES (MOST COMMON)

~ CaC_2O_4 PRECIPITATES to FORM BLACK/DARK BROWN STONES SHAPED like ENVELOPE/DUMBBELL

~ Ca^{2+} + PO_4^{3-} forms DIRTY WHITE STONES SHAPED like WEDGE-PRISMS

STRUVITE STONES

~ $Mg + NH_4^+ + PO_4^{3-}$ from ACTIVITY of UREASE-POSITIVE BACTERIA

~ JAGGED CRYSTALS (LESS DENSE than CALCIUM STONES)

RADIOLUCENT

URIC ACID STONES

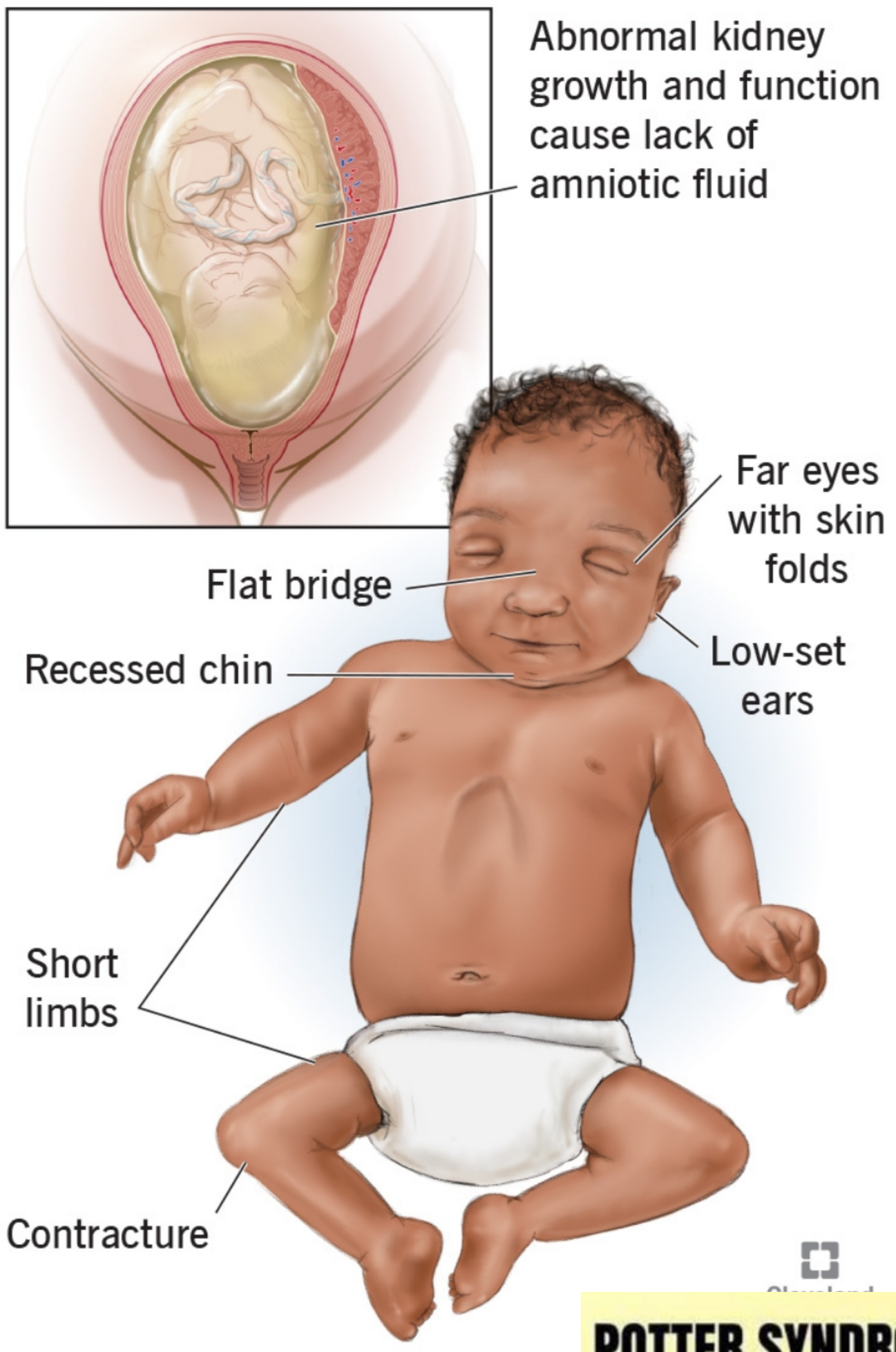
~ FORMED by MONOSODIUM URATE

~ RED-COLORED, RHOMBOID-SHAPED

CYSTEINE STONES

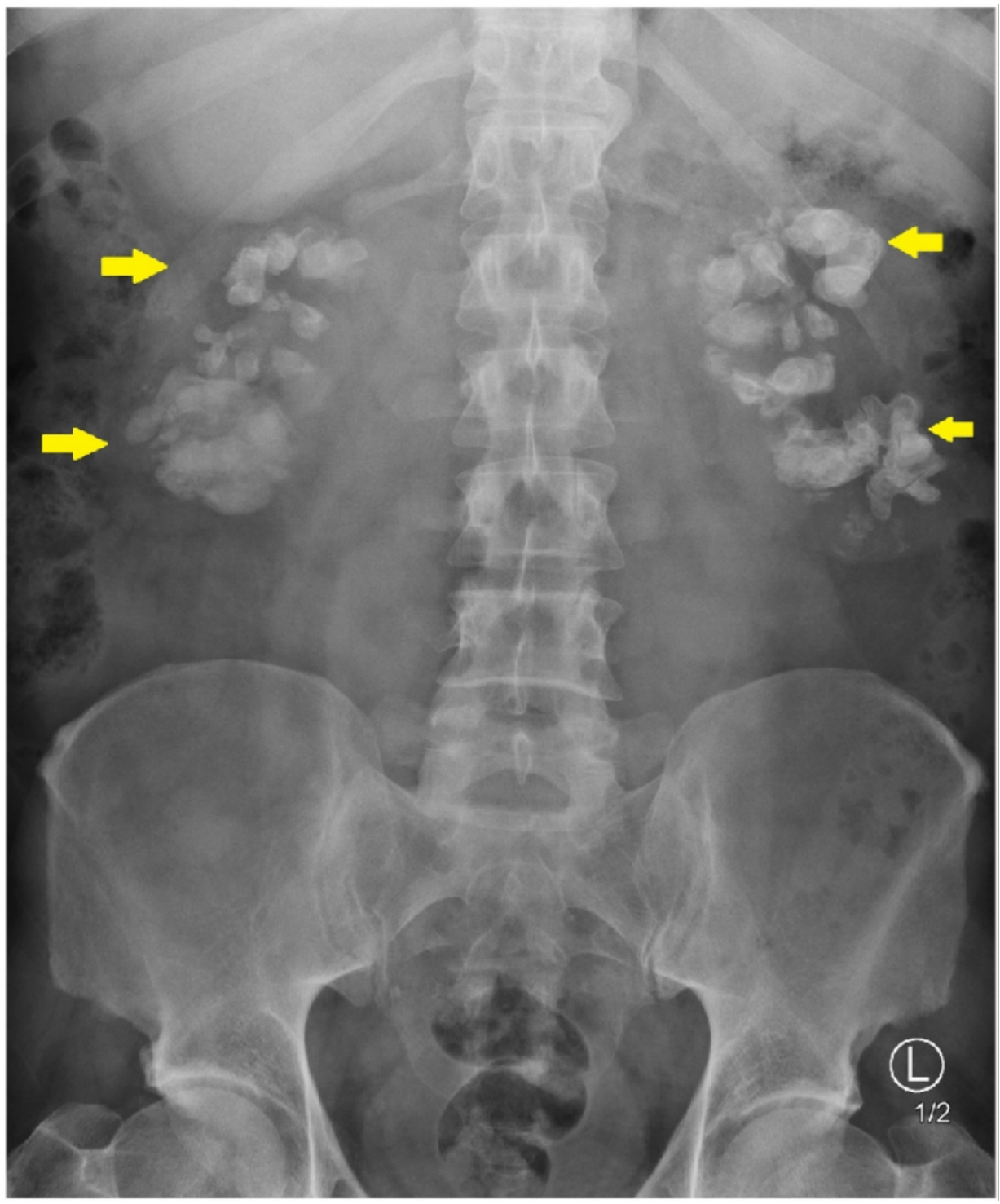
~ COMPOSED of A.A. CYSTEINE

~ YELLOW or LIGHT PINK HEXAGONS

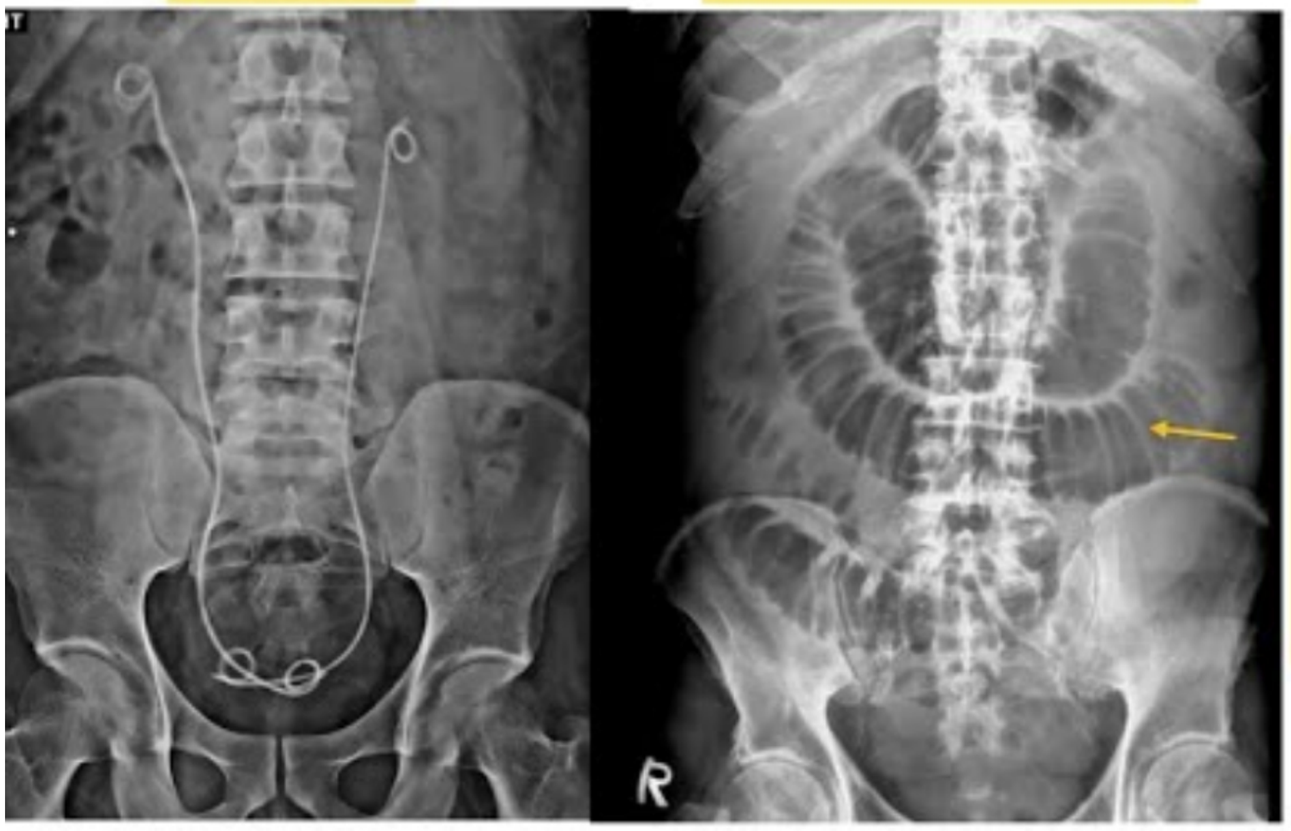

Potter Syndrome
Abnormal kidney growth and function cause lack of amniotic fluid
Far eyes with skin folds
Flat bridge
Low-set ears
Recessed chin
Short limbs
Contracture


POTTER SYNDROME signs and symptoms
POTTER
P -Pulmonary hypoplasia
O -Oligohydramnios
T -Twisted skin (wrinkly skin)
T -Twisted face (Potter face)
E -Extremities defects
R -Renal agenesis

X-Ray KUB



KUB Abdomen



Difference Between Abdomen & KUB

CTG

Contractions

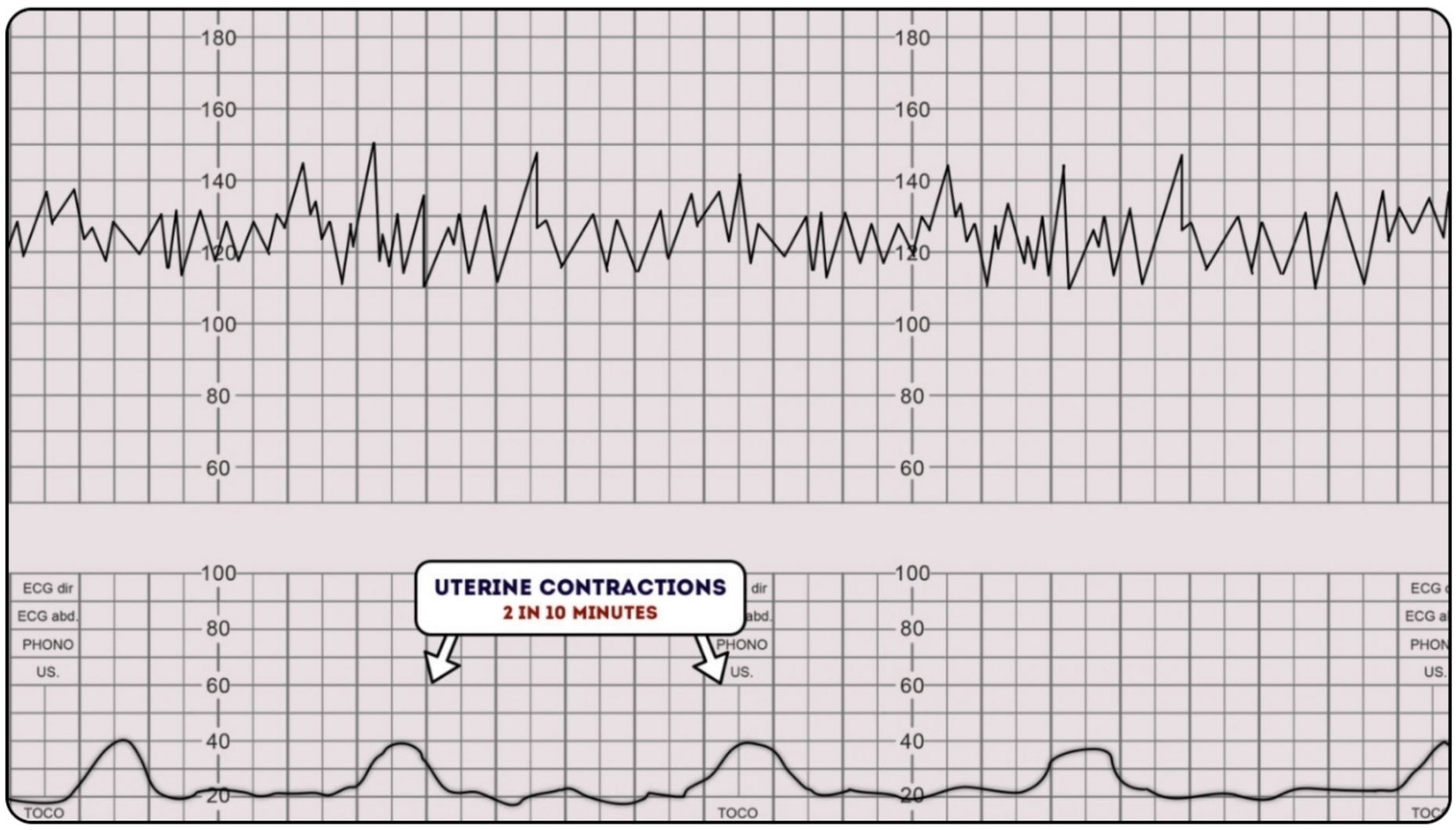
Next, you need to record the **number** of **contractions** present in a **10 minute period**.

Each **big square** on the example CTG chart below is **equal to one minute**, so look at how many contractions occurred within 10 big squares.

Individual contractions are seen as **peaks** on the part of the CTG monitoring uterine activity.

Assess contractions for the following:

- **Duration:** How long do the contractions last?
- **Intensity:** How strong are the contractions (assessed using palpation)?
- In the below example, there are 2 contractions in a 10 minute period (this is often referred to as *"2 in 10"*).



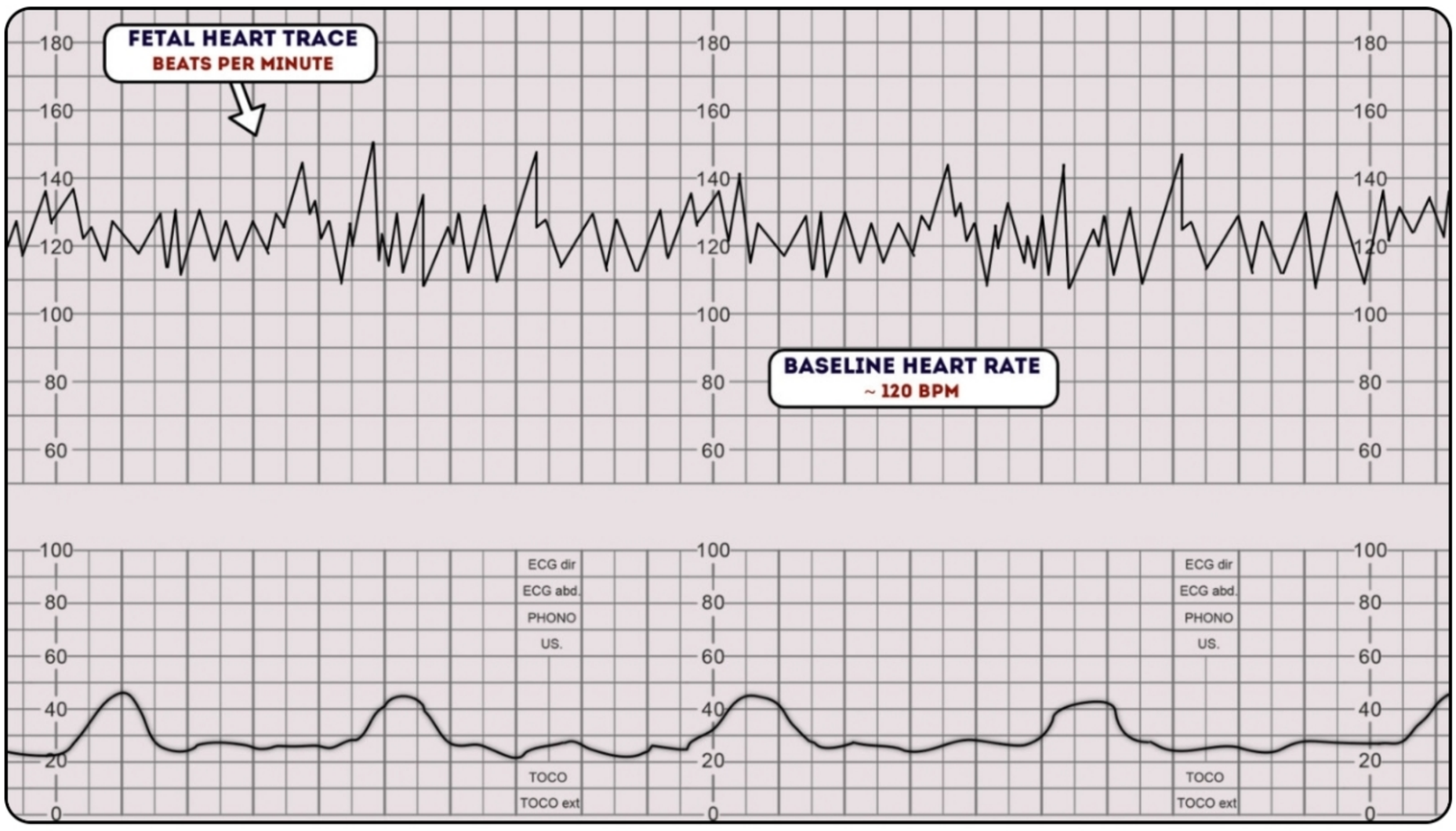
Uterine contractions (CTG)

Baseline rate of the fetal heart

The **baseline rate** is the **average heart rate** of the **fetus** within a **10-minute window**.

Look at the CTG and assess what the average heart rate has been over the last 10 minutes, ignoring any accelerations or decelerations.

A **normal fetal heart rate** is between **110-160 bpm**.



CTG: Baseline heart rate

Variability categorisation

Variability can be **categorised** as either **reassuring**, **non-reassuring** or **abnormal**. [3]

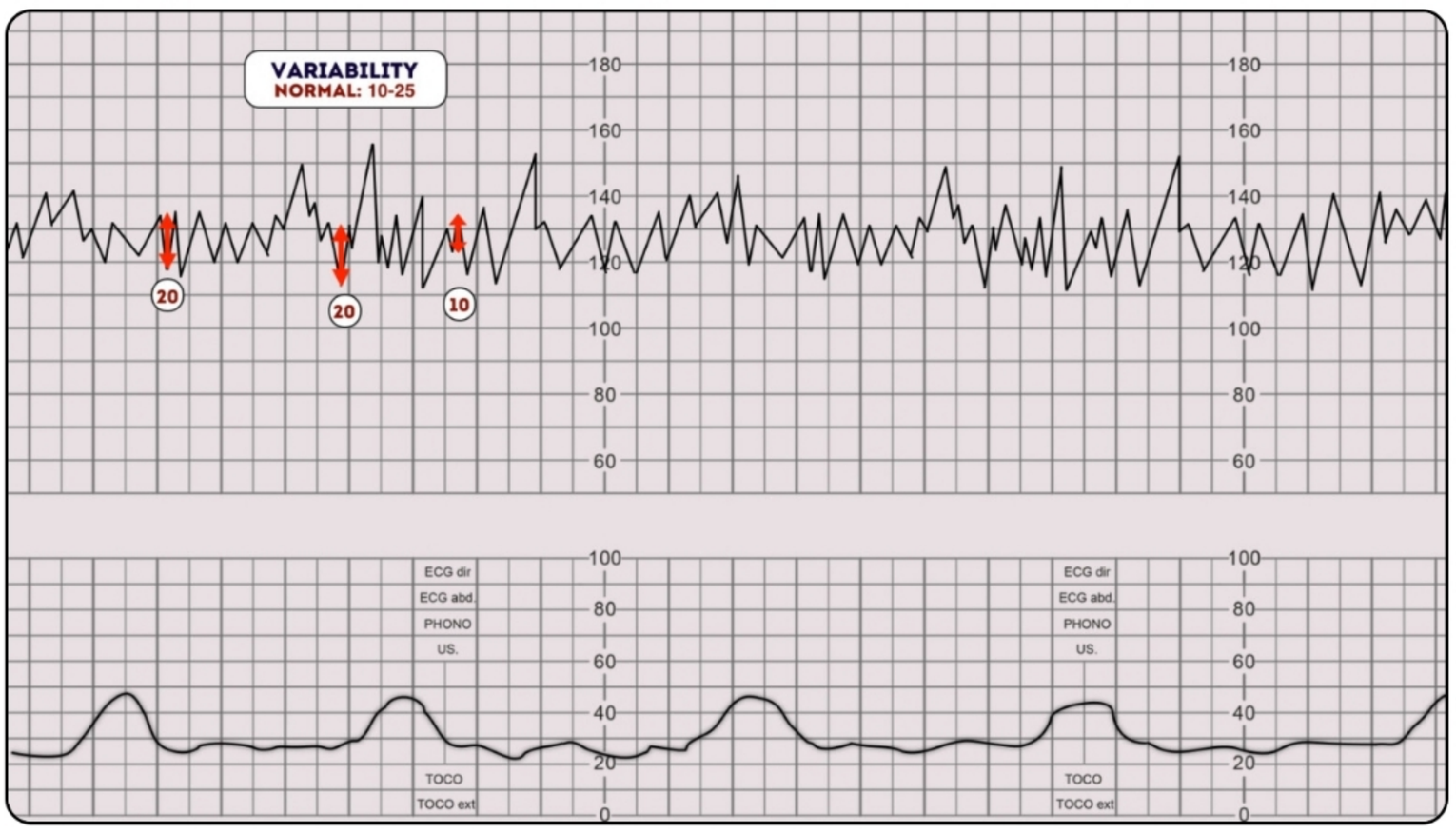
Reassuring: 5 – 25 bpm

Non-reassuring:

- less than 5 bpm for between 30-50 minutes
- more than 25 bpm for 15-25 minutes

Abnormal:

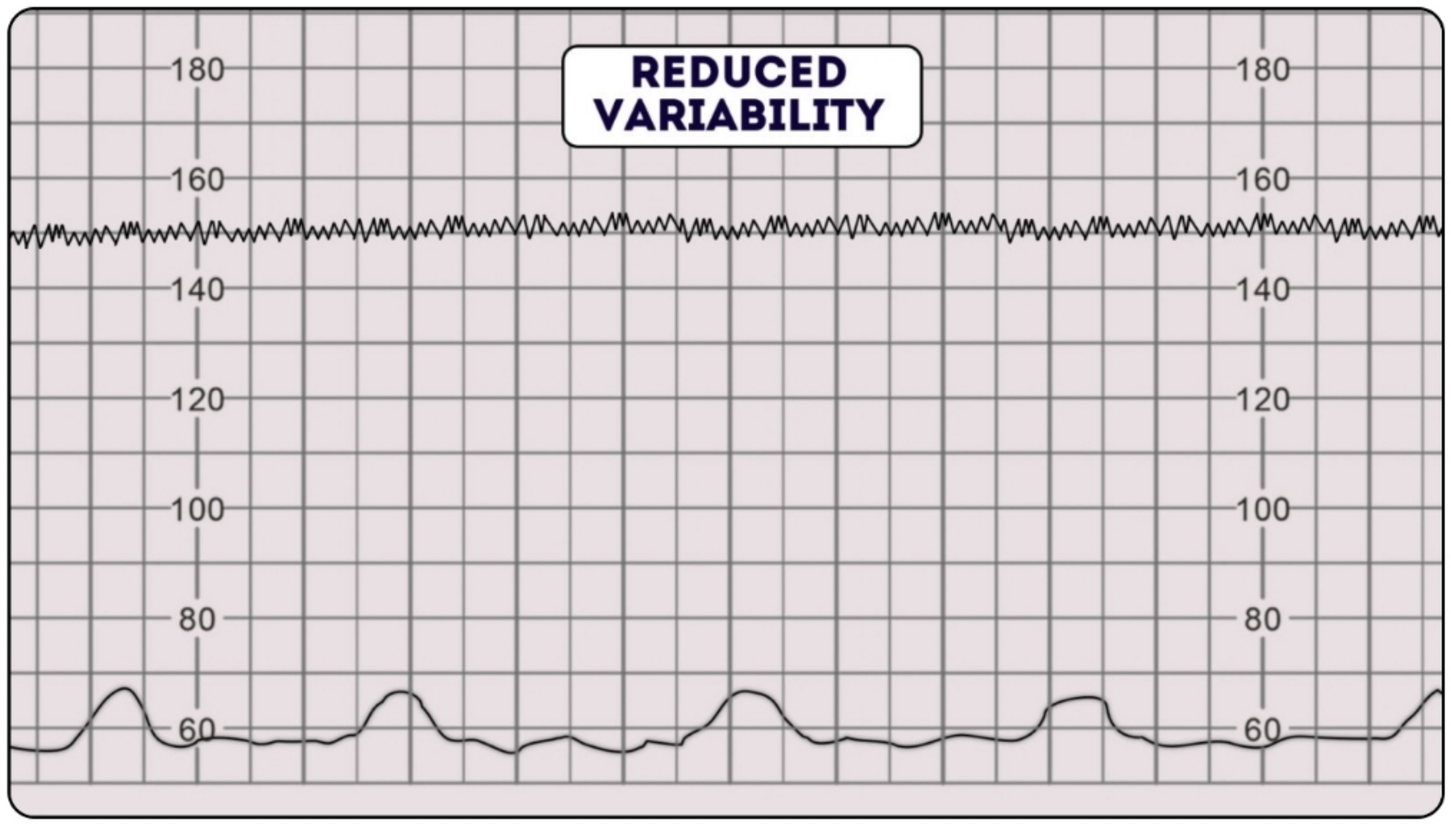
- less than 5 bpm for more than 50 minutes
- more than 25 bpm for more than 25 minutes
- sinusoidal



CTG: Variability

Reduced variability can be **caused** by any of the following:[2]

- Fetal sleeping: this should last no longer than 40 minutes (this is the most common cause)
- Fetal acidosis (due to hypoxia): more likely if late decelerations are also present
- Fetal tachycardia
- Drugs: opiates, benzodiazepines, methyldopa and magnesium sulphate
- Prematurity: variability is reduced at earlier gestation (<28 weeks)
- Congenital heart abnormalities



CTG: Reduced variability

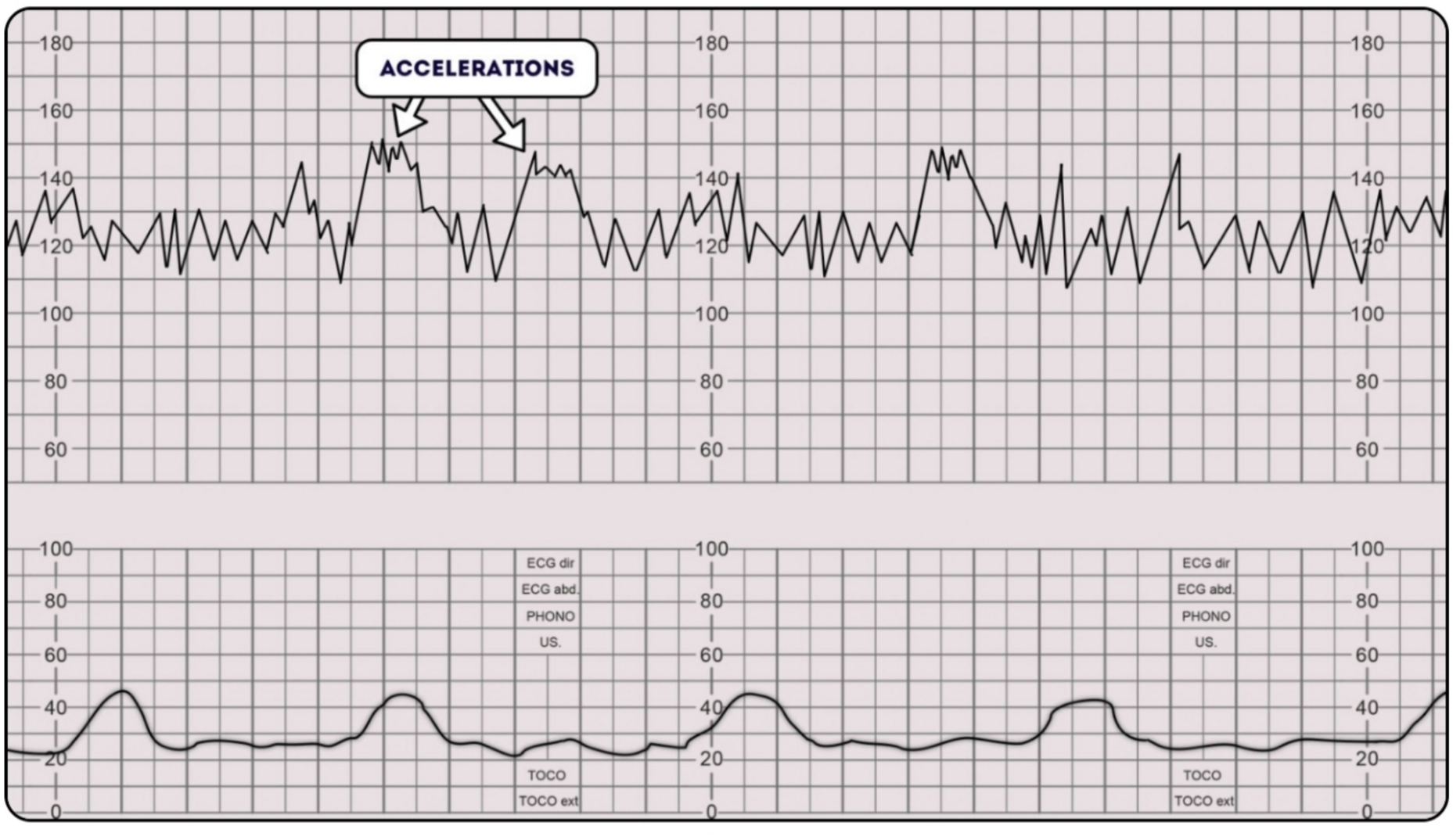
Accelerations

Accelerations are an **abrupt increase** in the **baseline fetal heart** rate of **greater than 15 bpm** for **greater than 15 seconds**.[1]

The presence of accelerations is **reassuring**.

Accelerations occurring **alongside uterine contractions** is a sign of a **healthy fetus**.

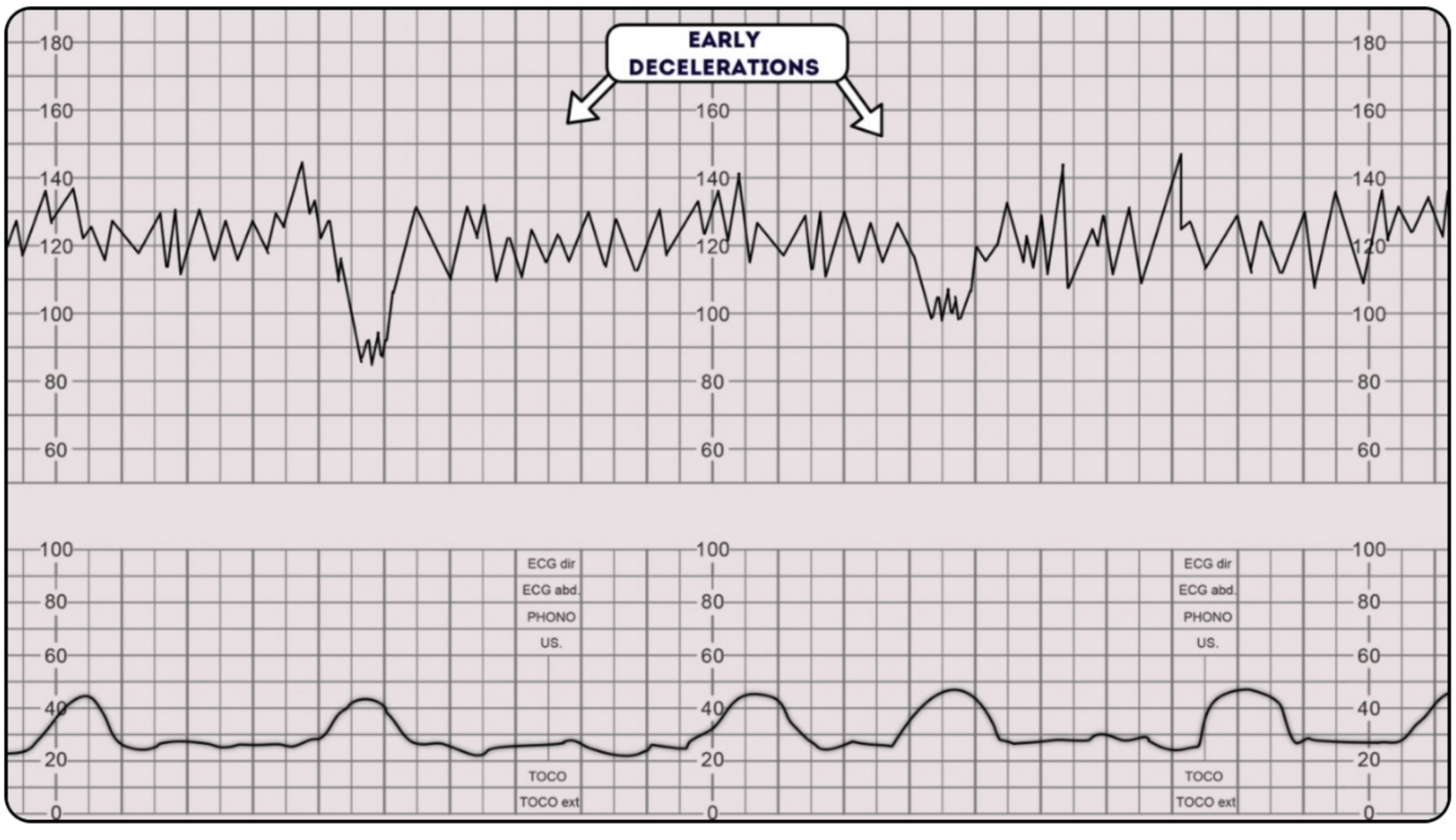
The **absence** of **accelerations** with an otherwise **normal CTG** is of **uncertain significance**.



CTG: Accelerations

Early deceleration

Early decelerations start when the **uterine contraction begins** and **recover** when **uterine contraction stops**. This is due to increased fetal intracranial pressure causing increased vagal tone. It therefore quickly resolves once the uterine contraction ends and intracranial pressure reduces. This type of deceleration is, therefore, considered to be physiological and not pathological.[3]



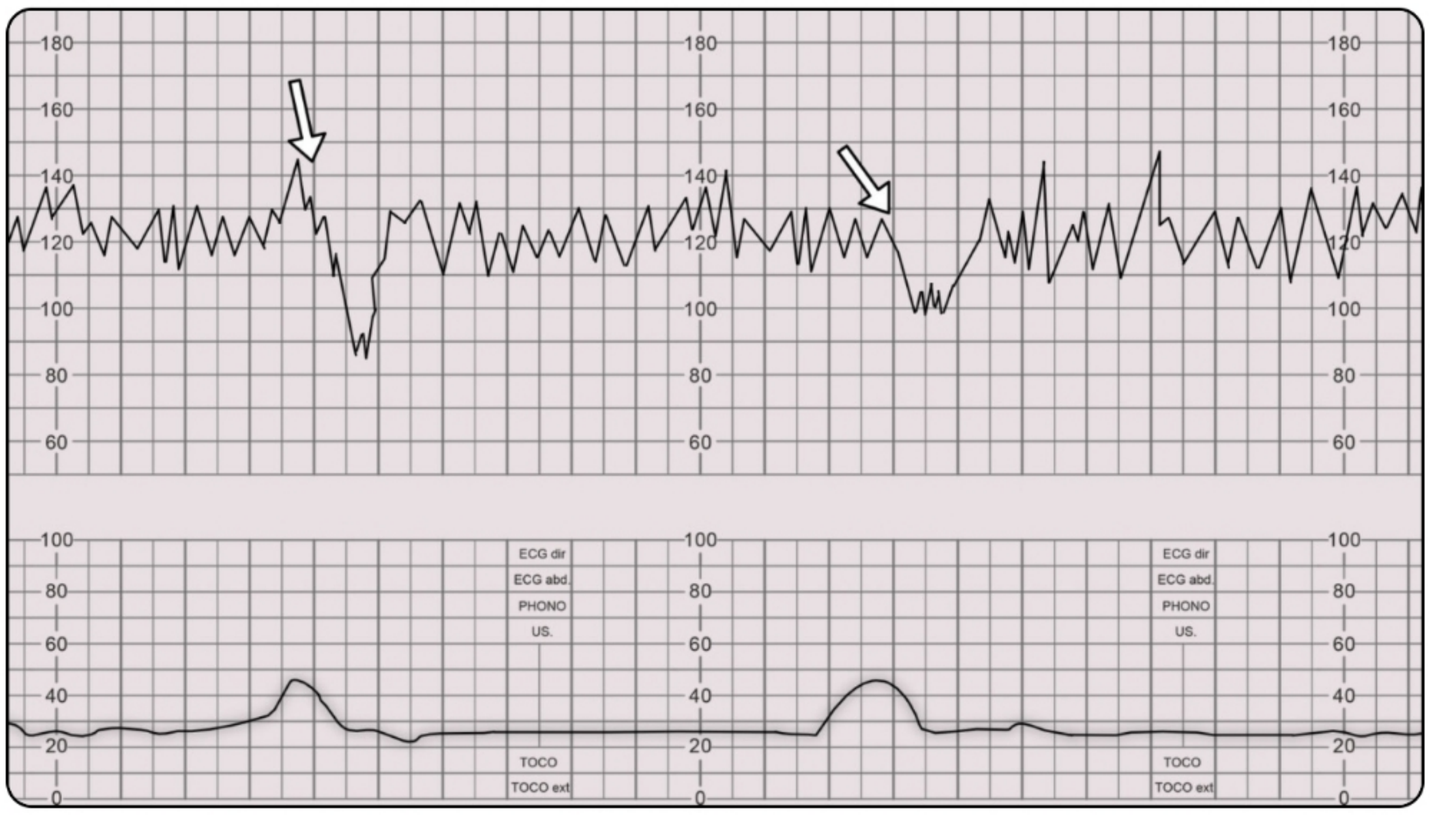
CTG: Early decelerations

Late deceleration

Late decelerations begin at the **peak of the uterine contraction** and **recover after the contraction ends**. This type of deceleration indicates there is insufficient blood flow to the uterus and placenta. As a result, blood flow to the fetus is significantly reduced causing fetal hypoxia and acidosis.

Causes of **reduced uteroplacental blood flow** include:[1]

- Maternal hypotension
- Pre-eclampsia
- Uterine hyperstimulation



CTG: Late decelerations

Variable deceleration

Variable decelerations are observed as a **rapid fall in baseline fetal heart rate** with a **variable recovery phase**.

They are variable in their duration and may not have any relationship to uterine contractions.

They are most often seen during labour and in patients' with reduced amniotic fluid volume.

All fetuses experience stress during the labour process, as a result of uterine contractions reducing fetal perfusion. Whilst fetal stress is to be expected during labour, the challenge is to pick up pathological fetal distress.

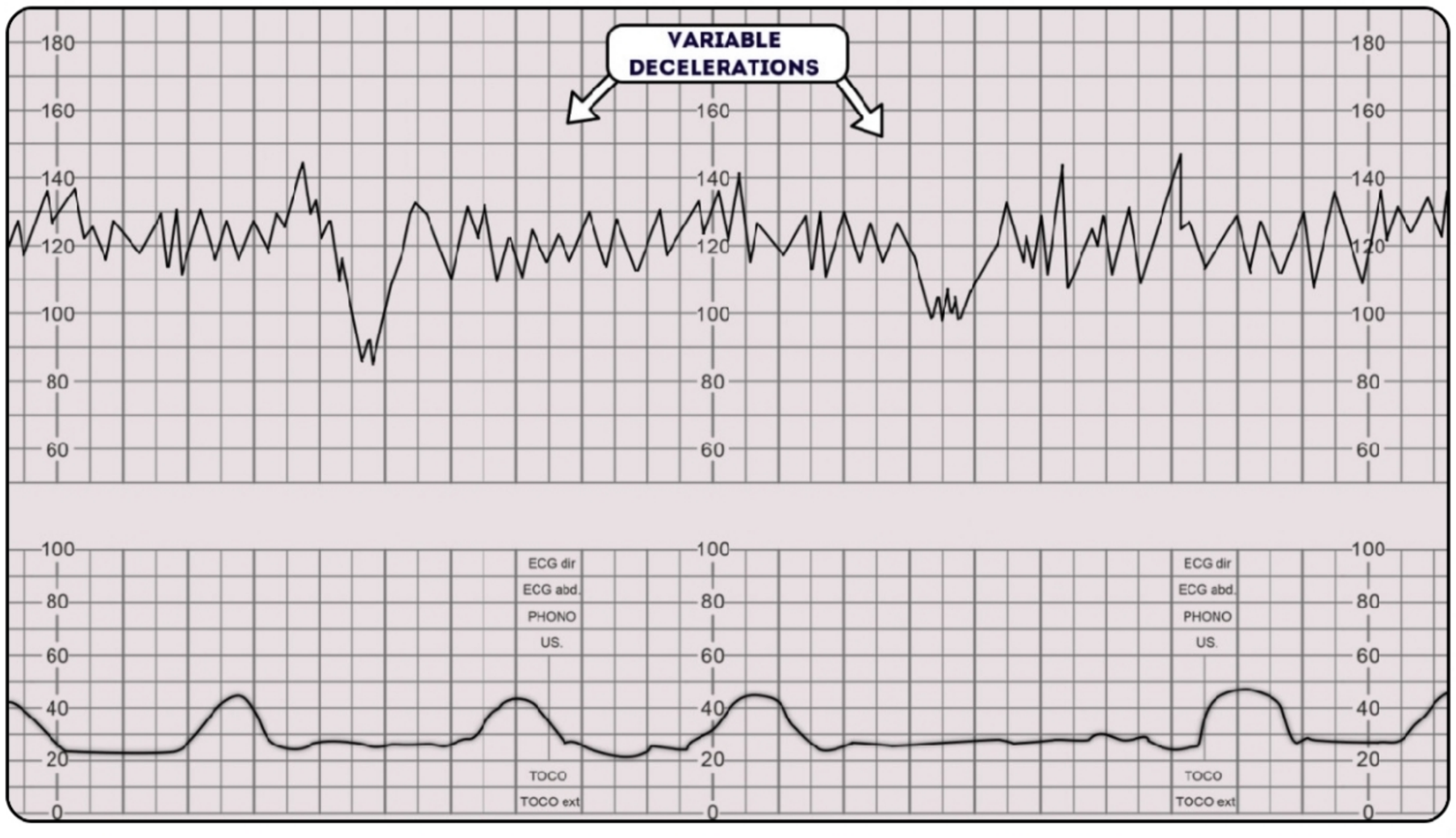
Variable decelerations are usually caused by **umbilical cord compression**. The **mechanism** is as follows:[1]

1. The umbilical vein is often occluded first causing an acceleration of the fetal heart rate in response.

2. Then the umbilical artery is occluded causing a subsequent rapid deceleration.

3. When pressure on the cord is reduced another acceleration occurs and then the baseline rate returns.

The **accelerations before** and **after** a **variable deceleration** are known as the **shoulders of deceleration**. Their presence indicates the fetus is not yet hypoxic and is adapting to the reduced blood flow. Variable decelerations can sometimes resolve if the mother changes position. The presence of persistent variable decelerations indicates the need for close monitoring. Variable decelerations without the shoulders are more worrying, as it suggests the fetus is becoming hypoxic.

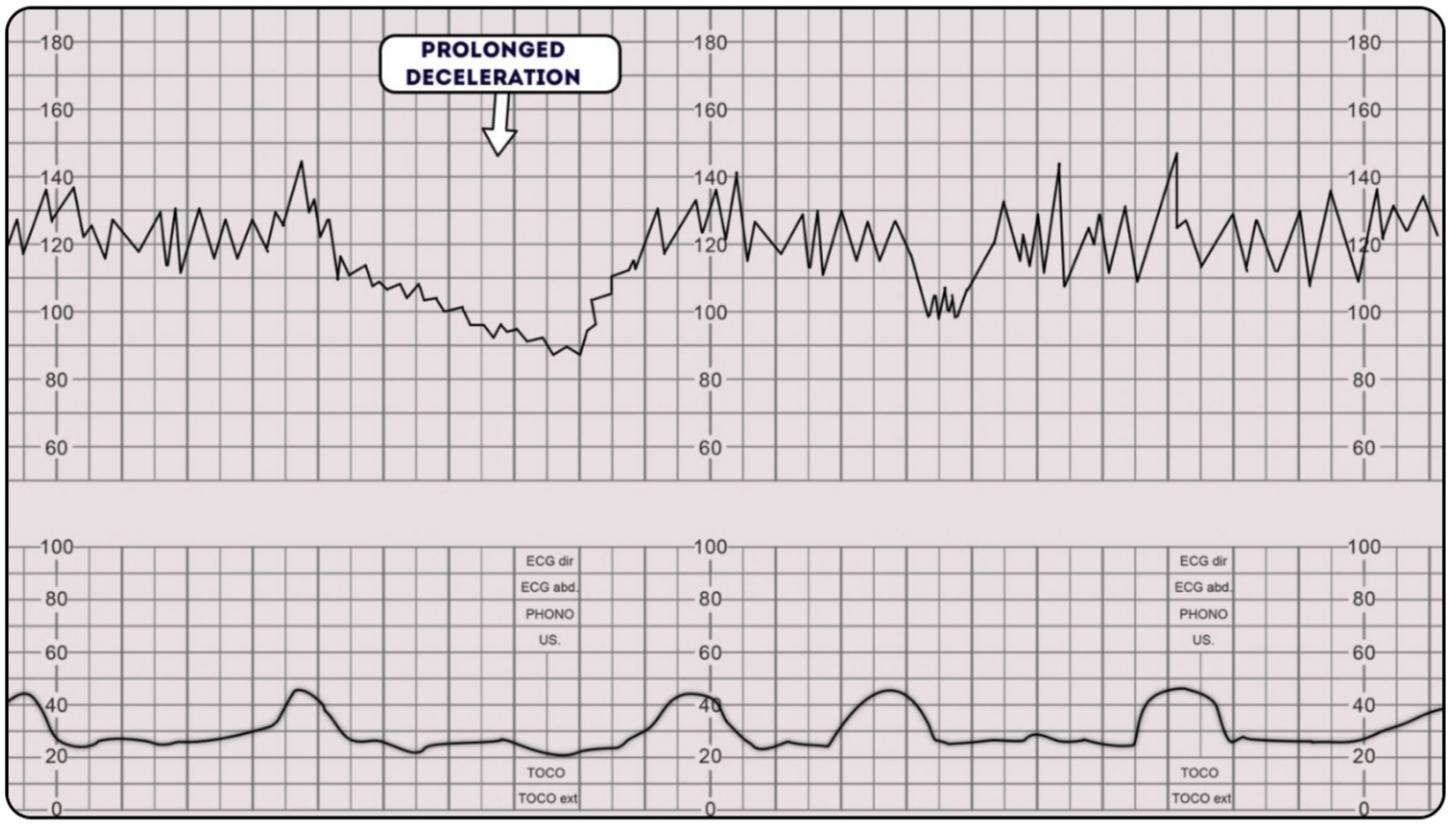


CTG: Variable decelerations

Prolonged deceleration

A **prolonged deceleration** is defined as a deceleration that lasts **more than 2 minutes**:

- If it lasts **between 2-3 minutes** it is classed as **non-reassuring**.
- If it lasts **longer than 3 minutes** it is immediately classed as **abnormal**.



CTG: Prolonged deceleration

Sinusoidal pattern

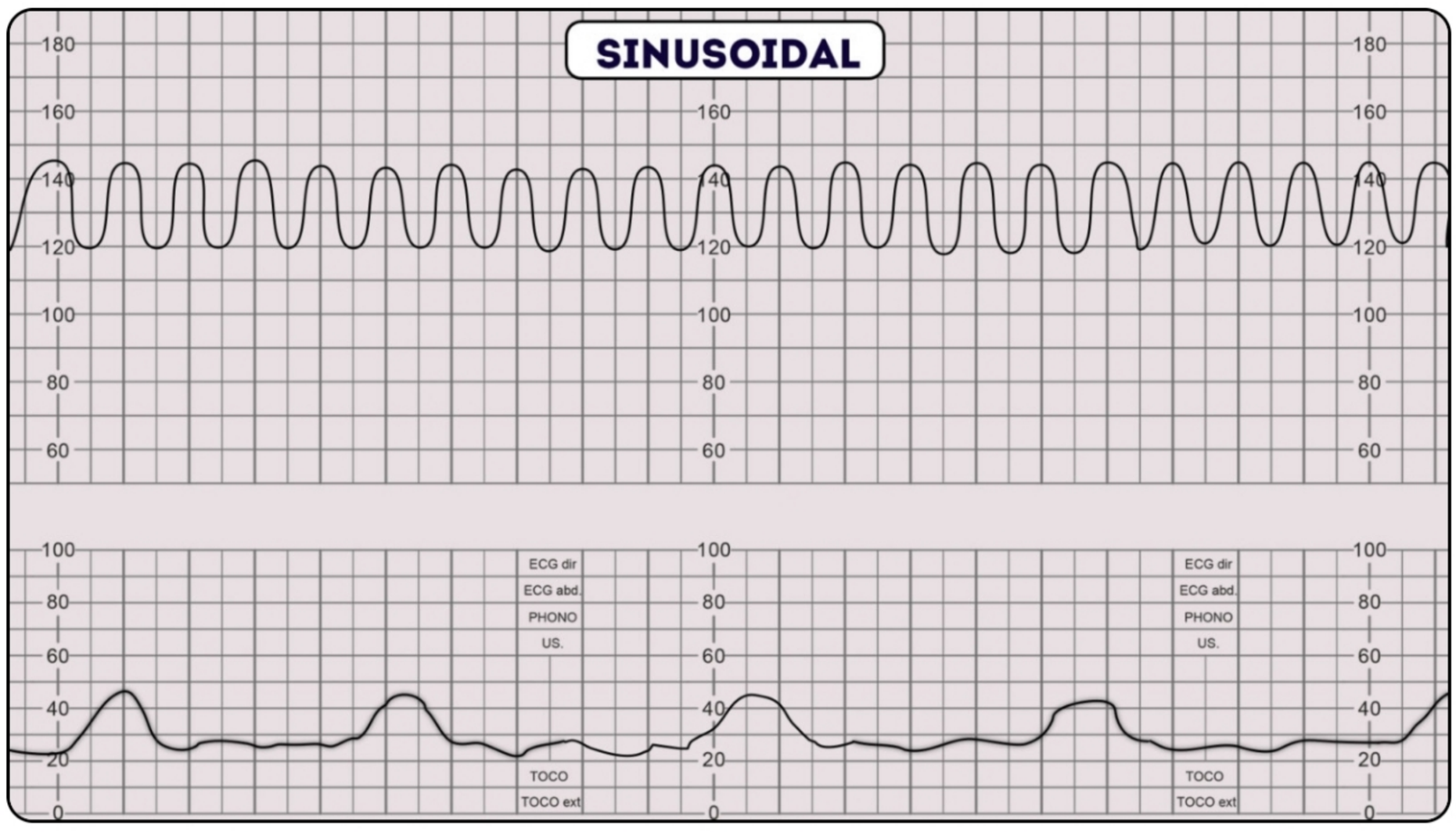
A sinusoidal CTG pattern is **rare**, however, if present it is **very concerning** as it is associated with high rates of **fetal morbidity** and **mortality**.[1]

A **sinusoidal CTG pattern** has the following **characteristics**:

- A **smooth**, **regular**, **wave-like** pattern
- Frequency of around **2-5 cycles** a **minute**
- **Stable baseline rate** around 120-160bpm
- **No** beat to beat variability

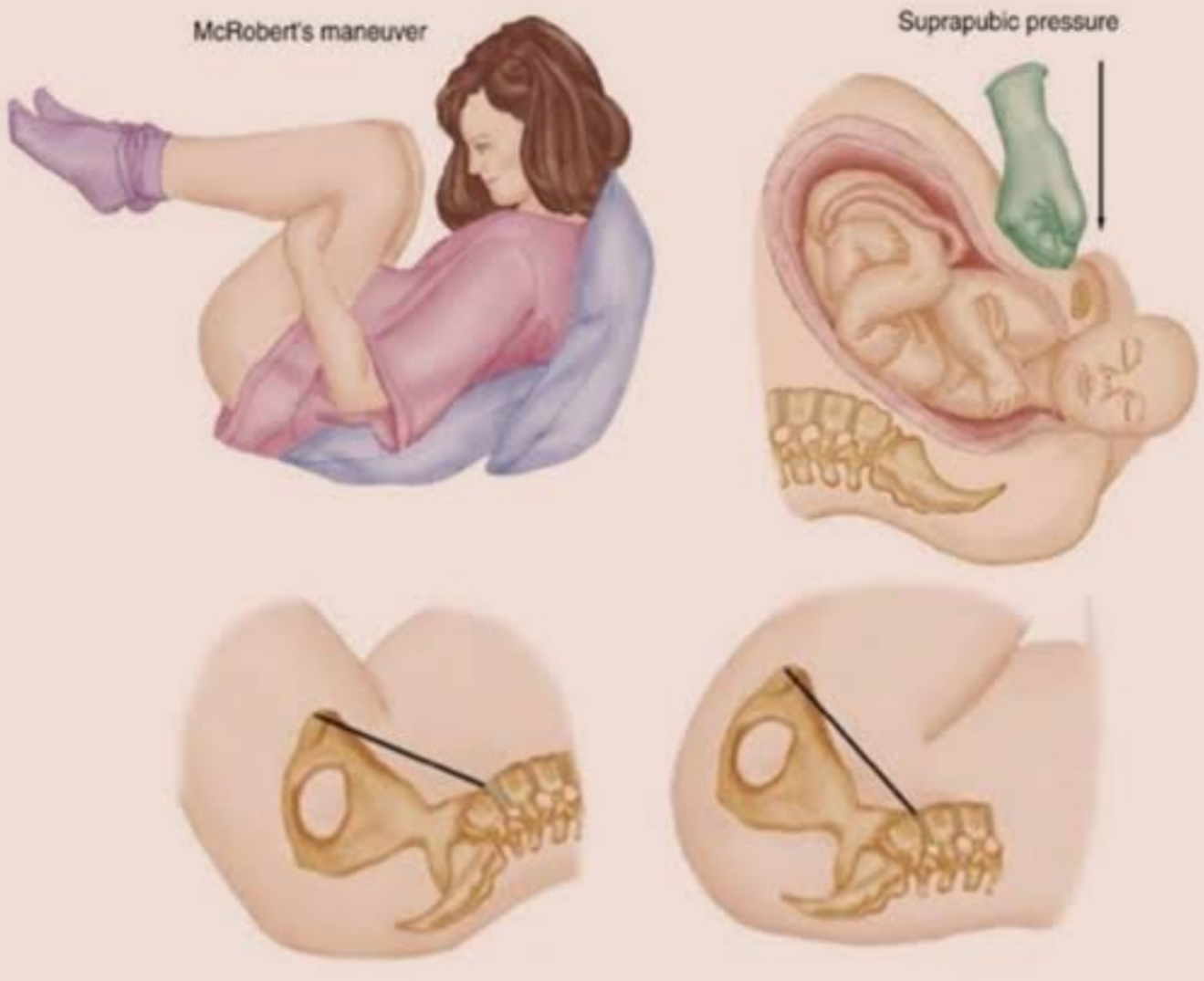
A **sinusoidal pattern** usually **indicates** one or more of the following:

- Severe fetal hypoxia
- Severe fetal anaemia
- Fetal/maternal haemorrhage



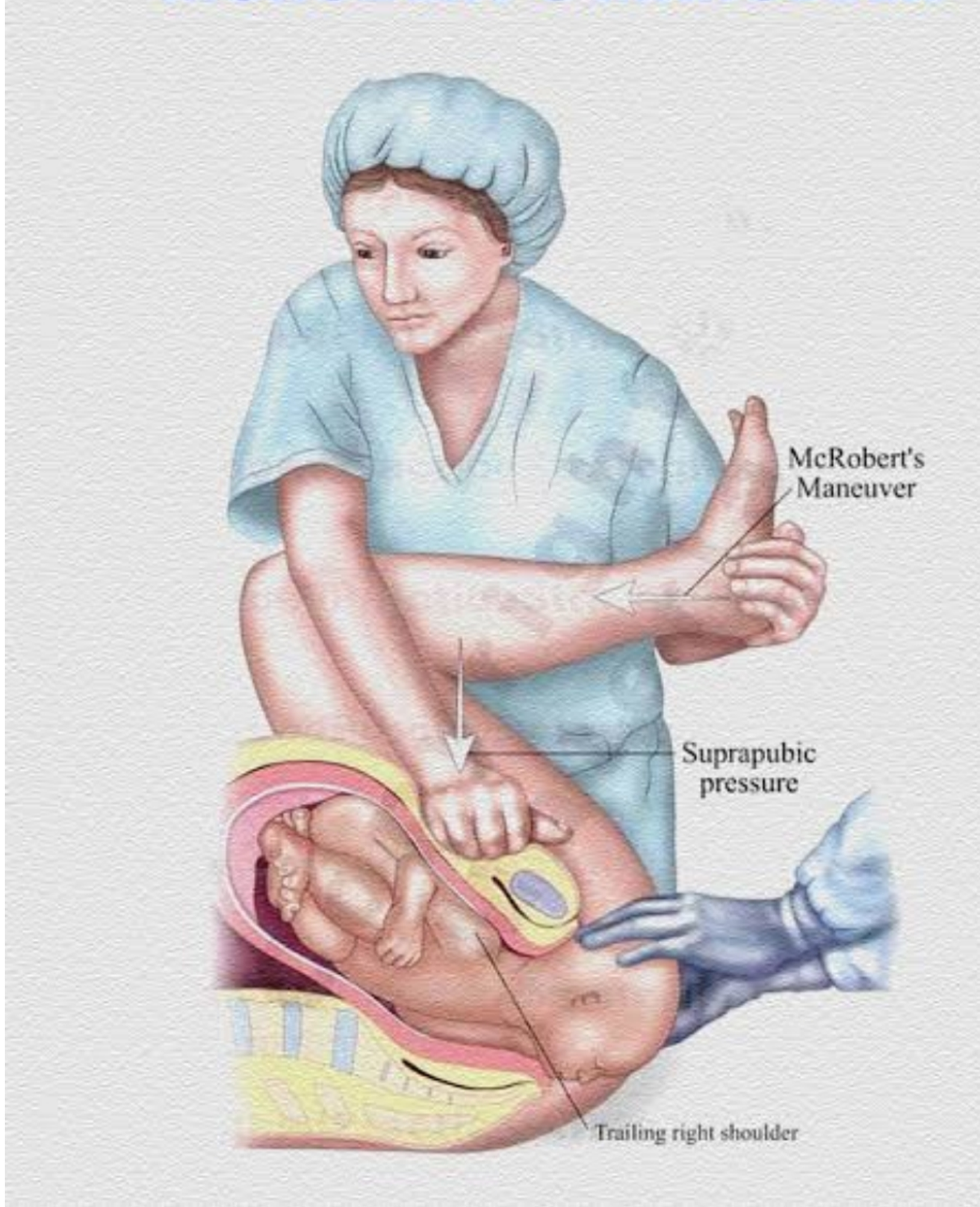
CTG: Sinusoidal pattern

McROBERTS MANEUVER



The McRoberts maneuver is a medical technique used to assist in difficult deliveries, particularly when the baby's shoulder is stuck (shoulder dystocia).

MCROBERT'S MANUEVER

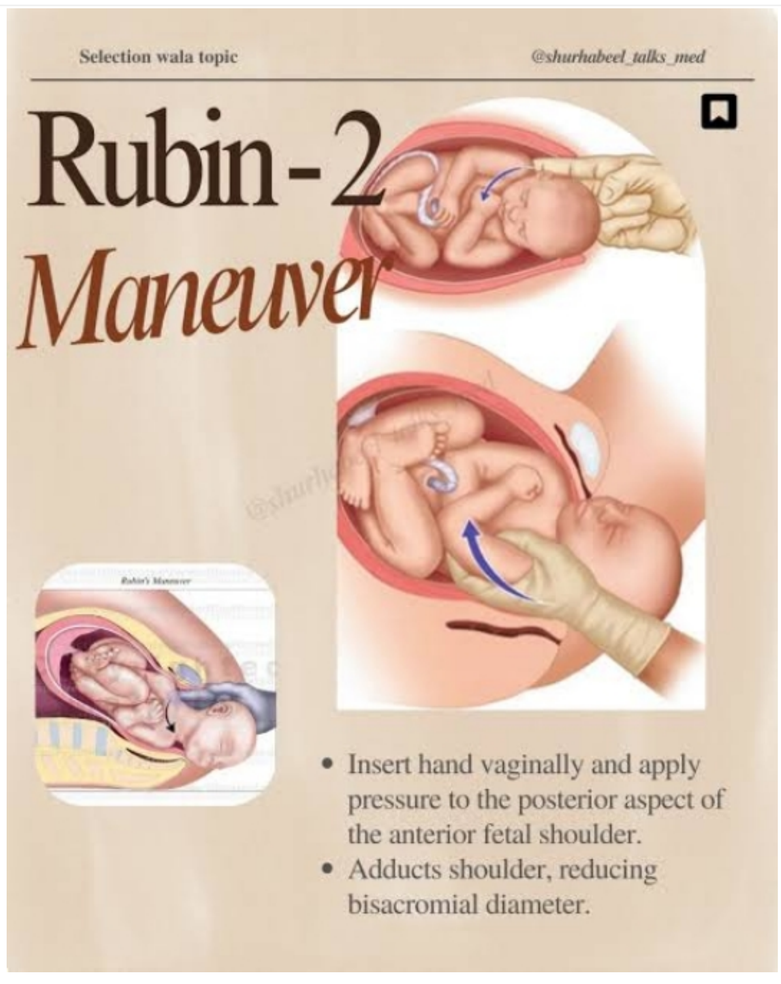


Rubin-2 *Maneuver*

- Insert hand vaginally and apply pressure to the posterior aspect of the anterior fetal shoulder.
- Adducts shoulder, reducing bisacromial diameter.

Shoulder dystocia maneuvers [11][15][19]

- **Initial maneuvers**
  - McRoberts maneuver
    - The patient should stop bearing down and lie supine with the buttocks on the edge of the bed.
    - Abduct, externally rotate, and hyperflex the maternal hips (with the maternal legs pulled towards the head).
  - McRoberts maneuver with suprapubic pressure (Rubin I maneuver) [17]
  - Manual delivery of the posterior fetal arm
- **Secondary maneuvers**
  - Rubin II maneuver: Manually rotate the fetal shoulder girdle by applying pressure to the posterior part of the anterior shoulder.
  - Woods corkscrew maneuver: Manually rotate the fetal shoulder girdle by applying pressure to the anterior part of the posterior shoulder.
  - Gaskin maneuver (all fours positions)
    - The patient moves into hands and knees position.
    - Rubin and Woods maneuvers can be repeated.



- **Maneuvers of last resort**
  - Intentional clavicular fracture: Fracture the clavicle by pulling the midportion of the clavicle upward or outward.
  - Zavanelli maneuver: The fetal head is pushed back into the pelvis to alleviate pressure on the umbilical cord while the patient is transported to the OR for cesarean delivery.
  - Symphysiotomy: surgical separation of the anterior fibers of the symphyseal ligament, only performed if all other maneuvers are unsuccessful and cesarean delivery is not available

Internal maneuvers (i.e., maneuvers requiring direct manipulation of fetal parts) may require episiotomy and can be performed together with the McRoberts maneuver. [19]

Avoid excessive downward or lateral traction on the fetal head and neck, as this can result in brachial plexus injuries. [18]

Woods Screw Maneuver

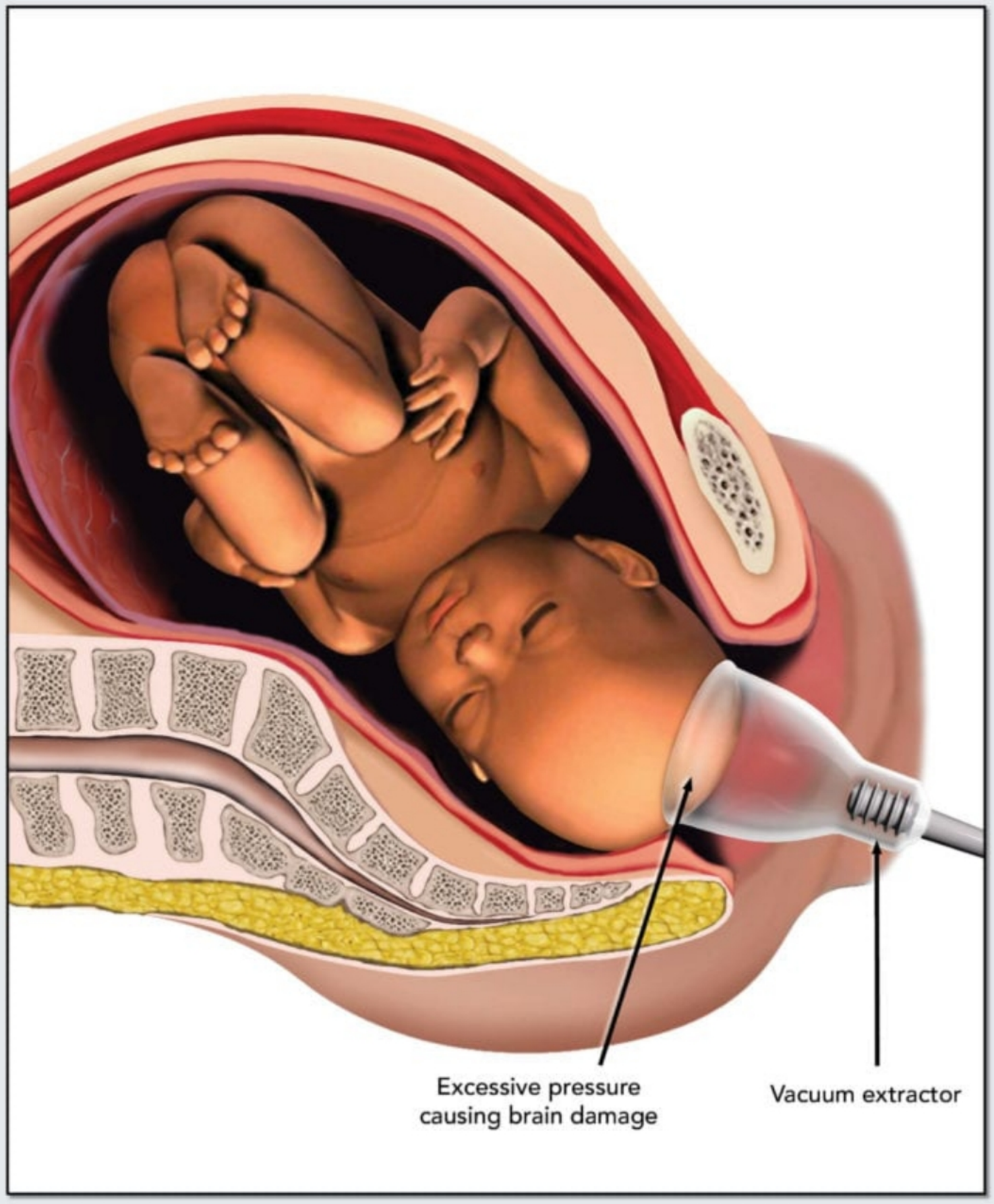
TRUSTED

- The Woods screw maneuver, also known as the Wood's corkscrew maneuver, is an obstetric technique used to manage shoulder dystocia during delivery, aiming to dislodge the impacted shoulder and facilitate delivery. This maneuver is a component of a larger set of maneuvers employed when the baby's shoulders become stuck behind the mother's pubic bone during delivery
- Goal-
  To facilitate Shoulder delivery
- Technique- Rotating the baby's shoulders within the birth canal using a rotational, corkscrew-like motion

Nursing Highlights Channel

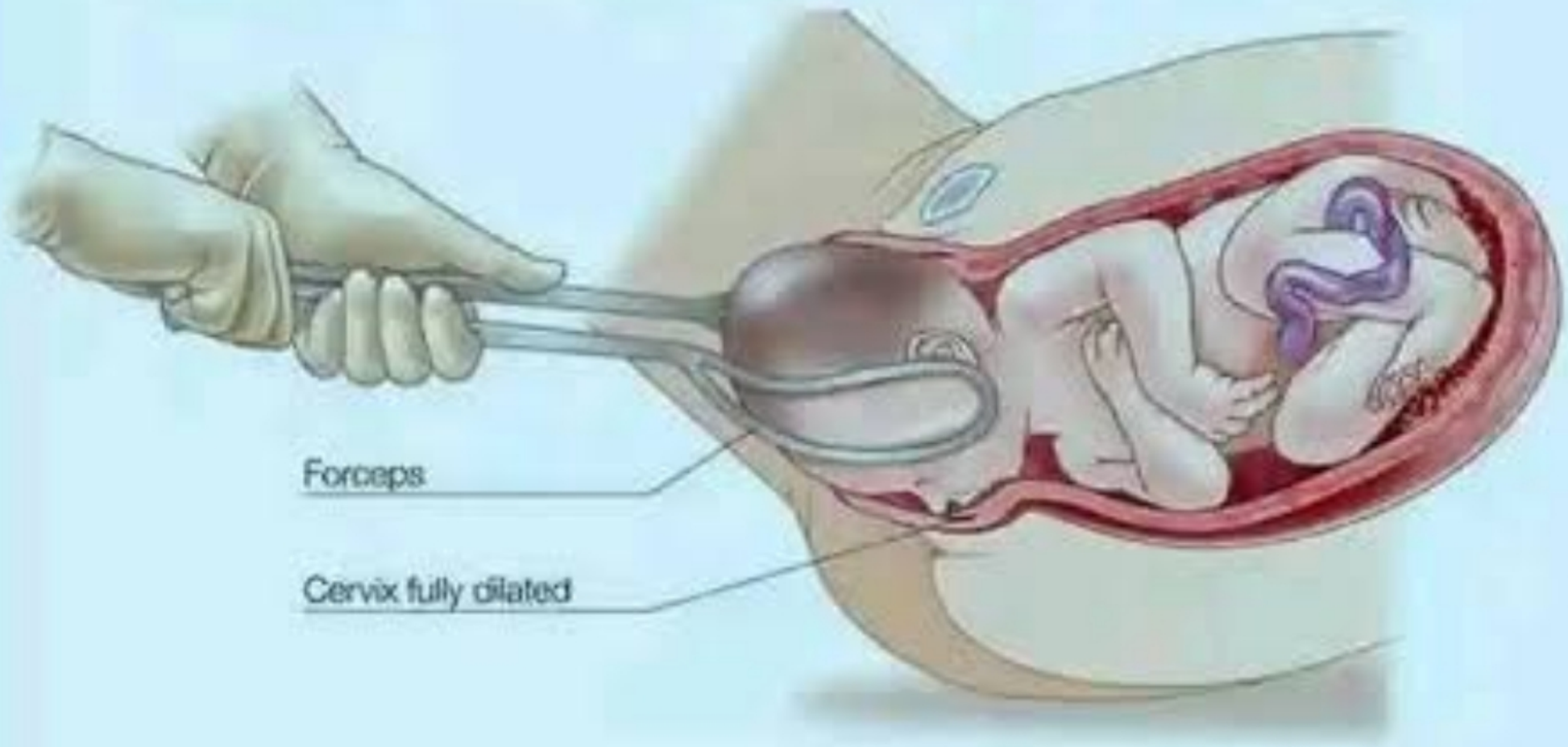
LIKE & SUBSCRIBE

BABY IN BIRTH CANAL WITH VACUUM EXTRACTOR



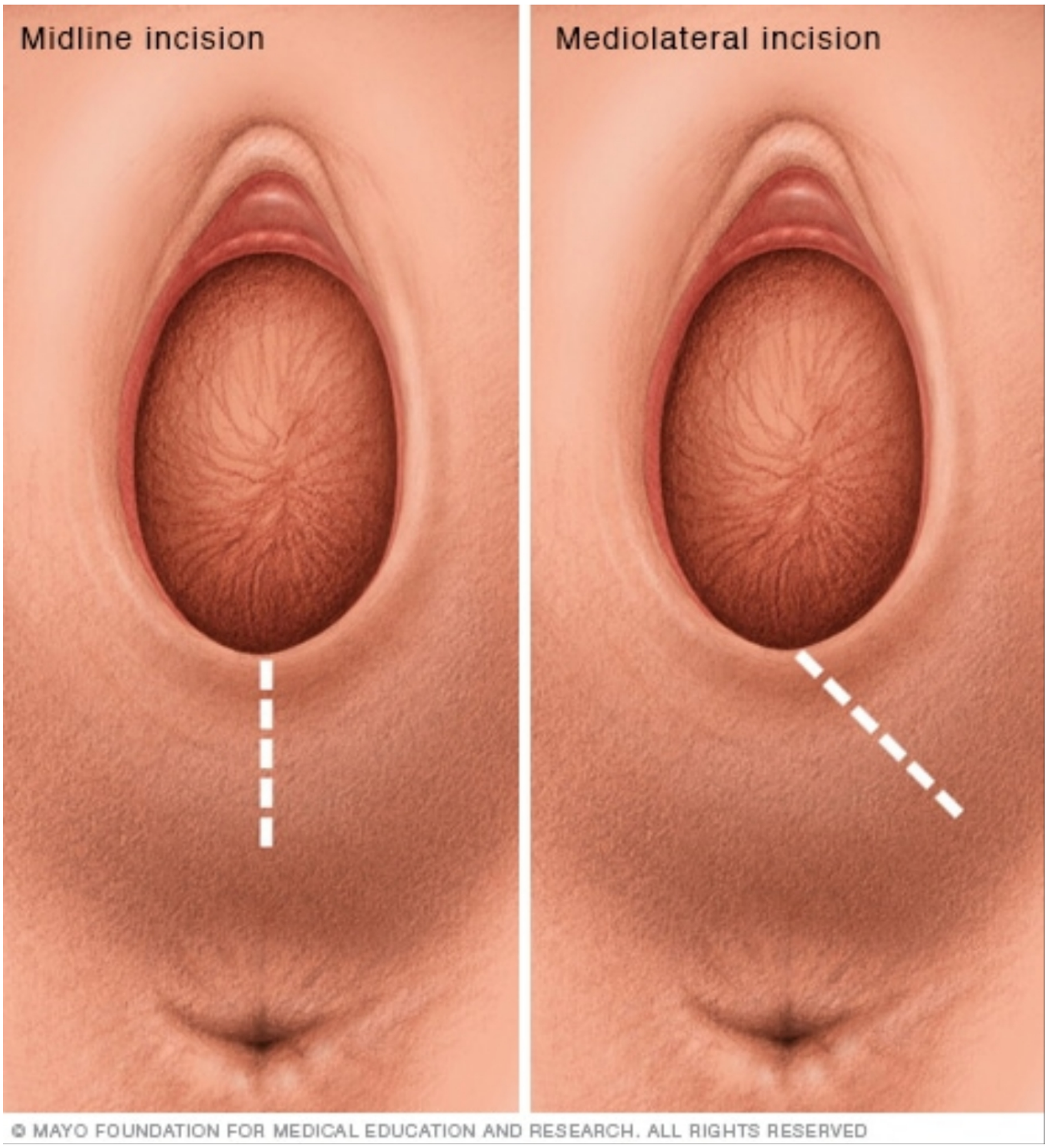
Attempt to deliver baby with the use of vacuum extractor

FORCEP ASSISTED DELIVERY

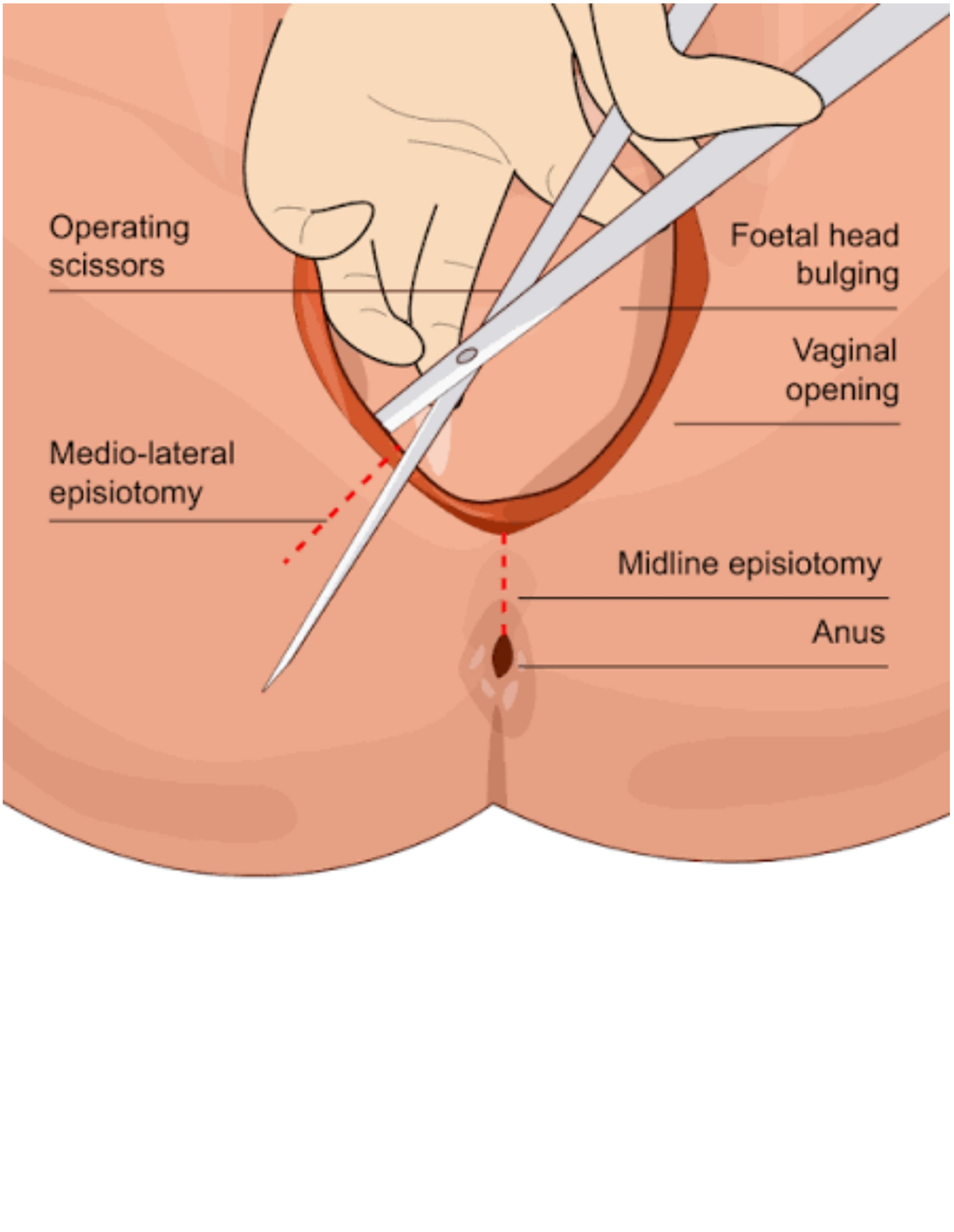


VACCUM ASSISTED DELIVERY

Episiotomy

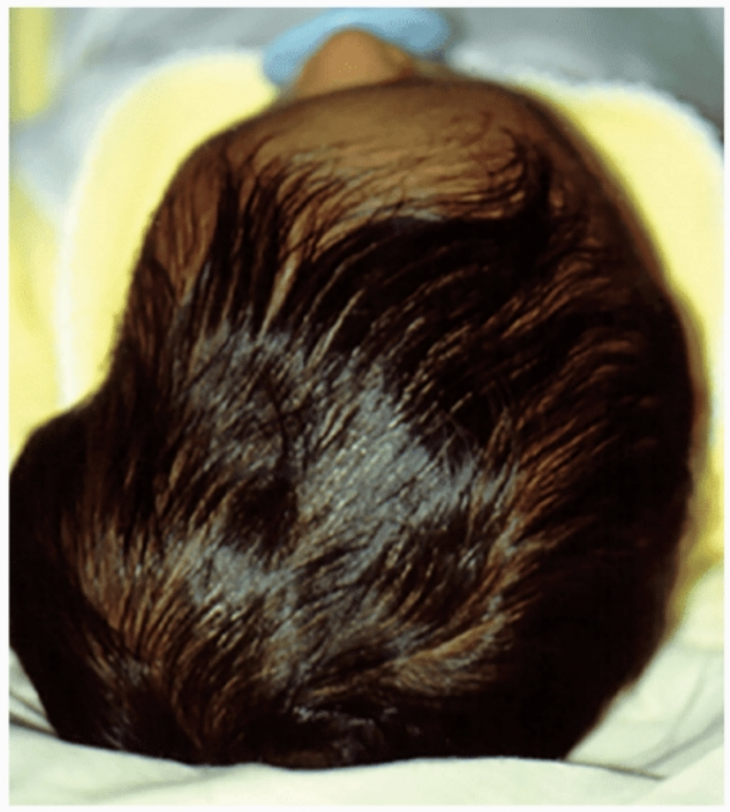


Episiotomy


Operating scissors
Foetal head bulging
Vaginal opening
Medio-lateral episiotomy
Midline episiotomy
Anus

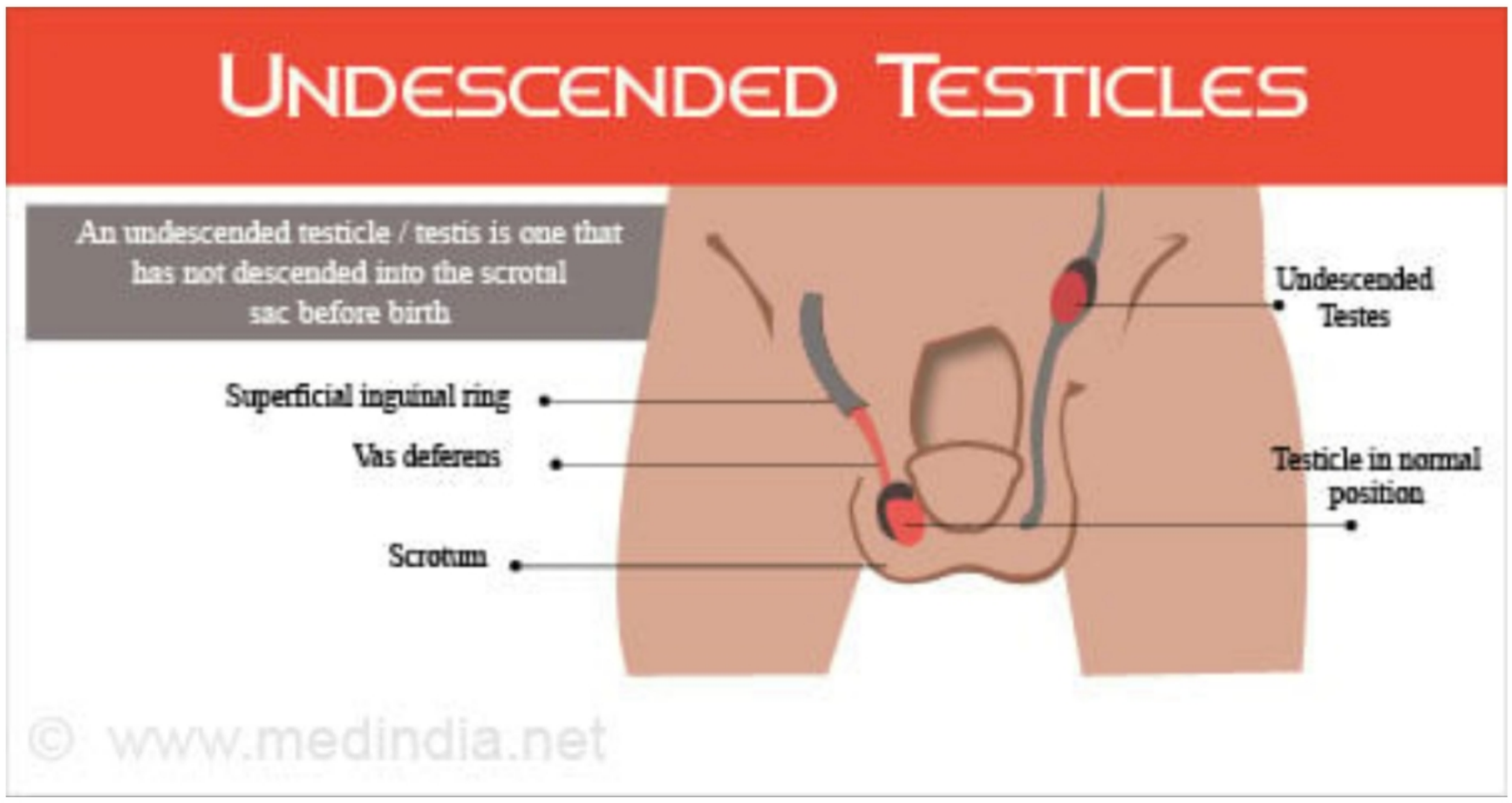
Symptoms of Cephalohematoma

The most common symptom of cephalohematoma is an unnatural bulge appearing on the infant's head. There will be no cut or bruise, but you may notice the bulge gets harder over time.



Episiotomy Scissor Use

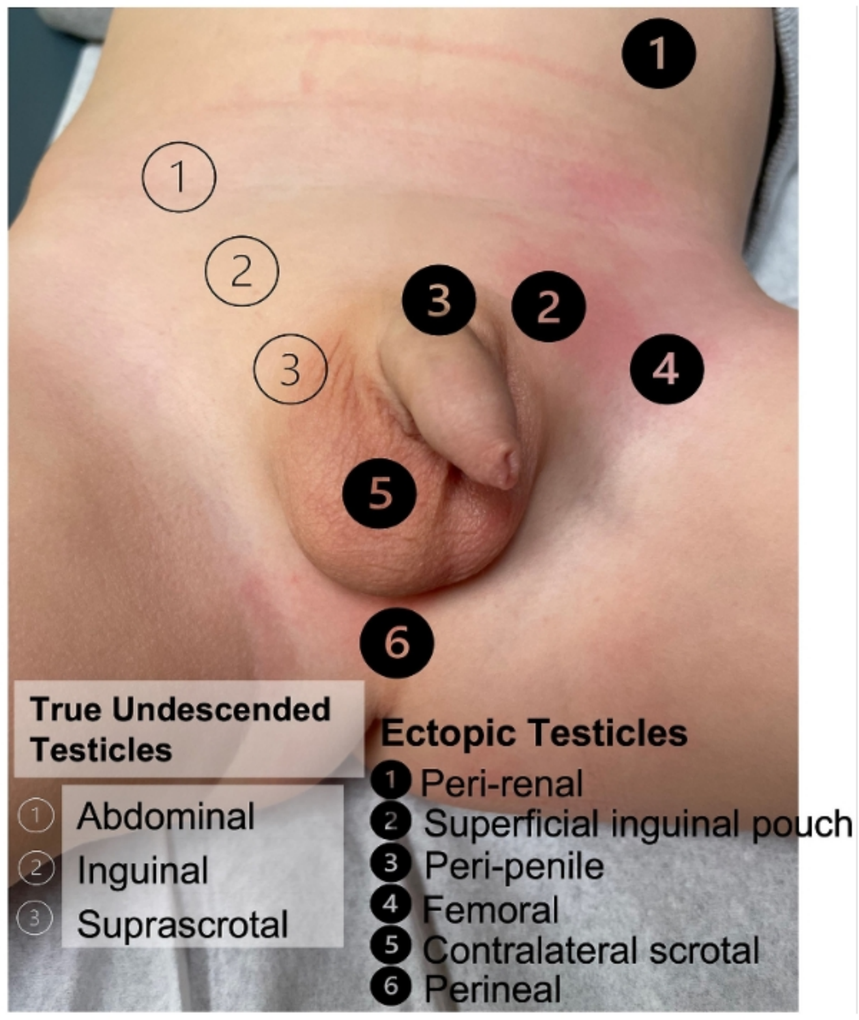
Episiotomy scissors are used to make episiotomy incisions for easier delivery of the baby by widening the opening of the vagina. These scissors are angled to make a precise incision by the obstetrician.



14 year old boy with left inguinal swelling, pain and backache for 6 months (picture was given).

Q 1. Diagnosis

Q2. Write findings in image in 3 lines

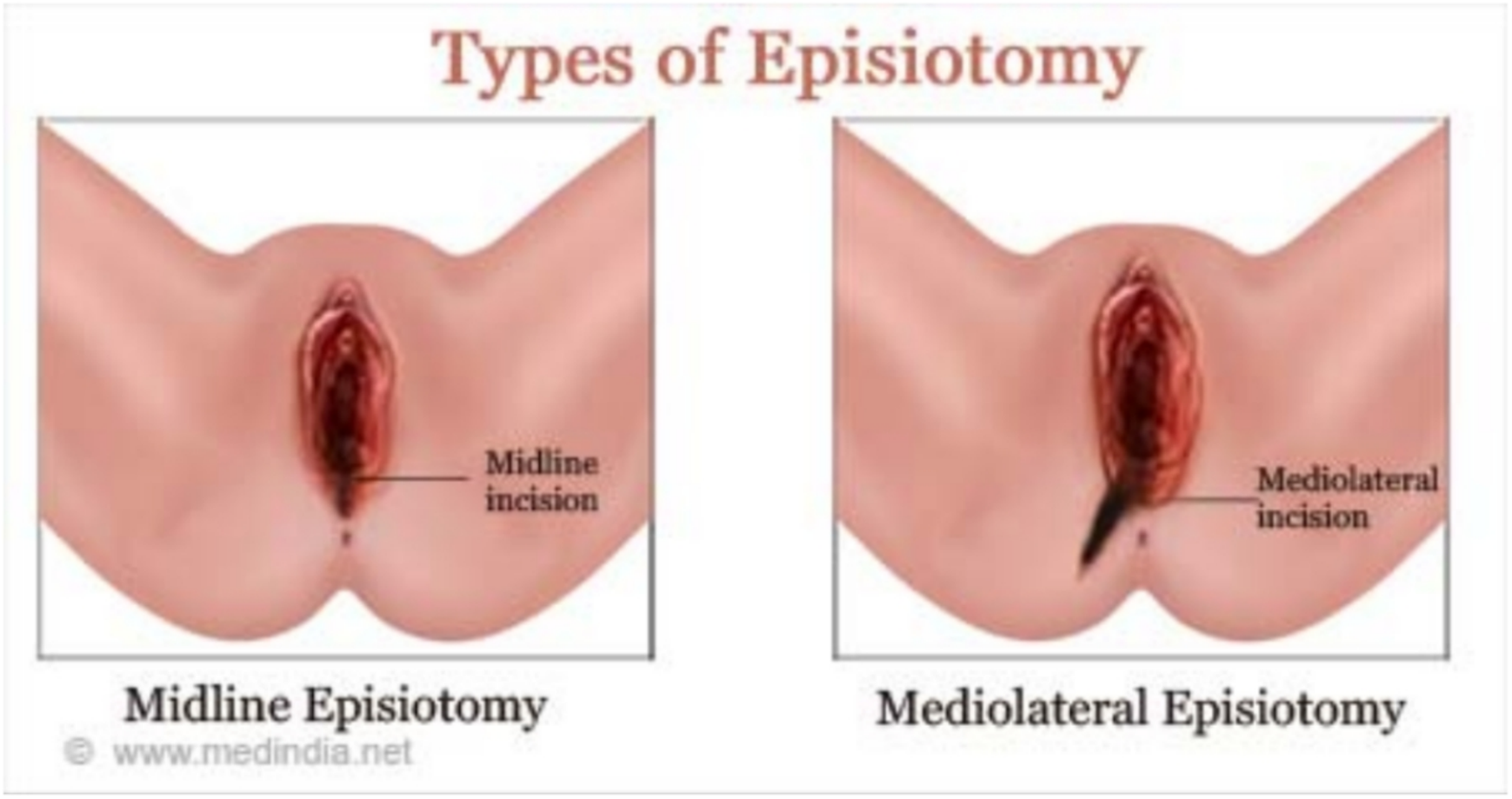


Types of Episiotomy

(ii). Types & Procedure:

- Episiotomy is performed by two different techniques:

Midline Episiotomy	Mediolateral Episiotomy
▪ It extends from the fourchette towards the anus. ▪ It is associated with: ○ Less blood loss ○ Easier to repair ○ Heals quickly ○ Less pain in postpartum period ○ Anal sphincter injury ○ Reduced incidence of dyspareunia	▪ ~~It extends from the fourchette towards the anus.~~ starting at vaginal opening and angling downward abt outward (typically 60°) ▪ It is associated with: to protect anal sphincter ○ **Reduced risk of anal sphincter injury therefore the recommended incision** ○ More blood loss ○ Difficult to repair ○ Delayed healing ○ More pain in postpartum period



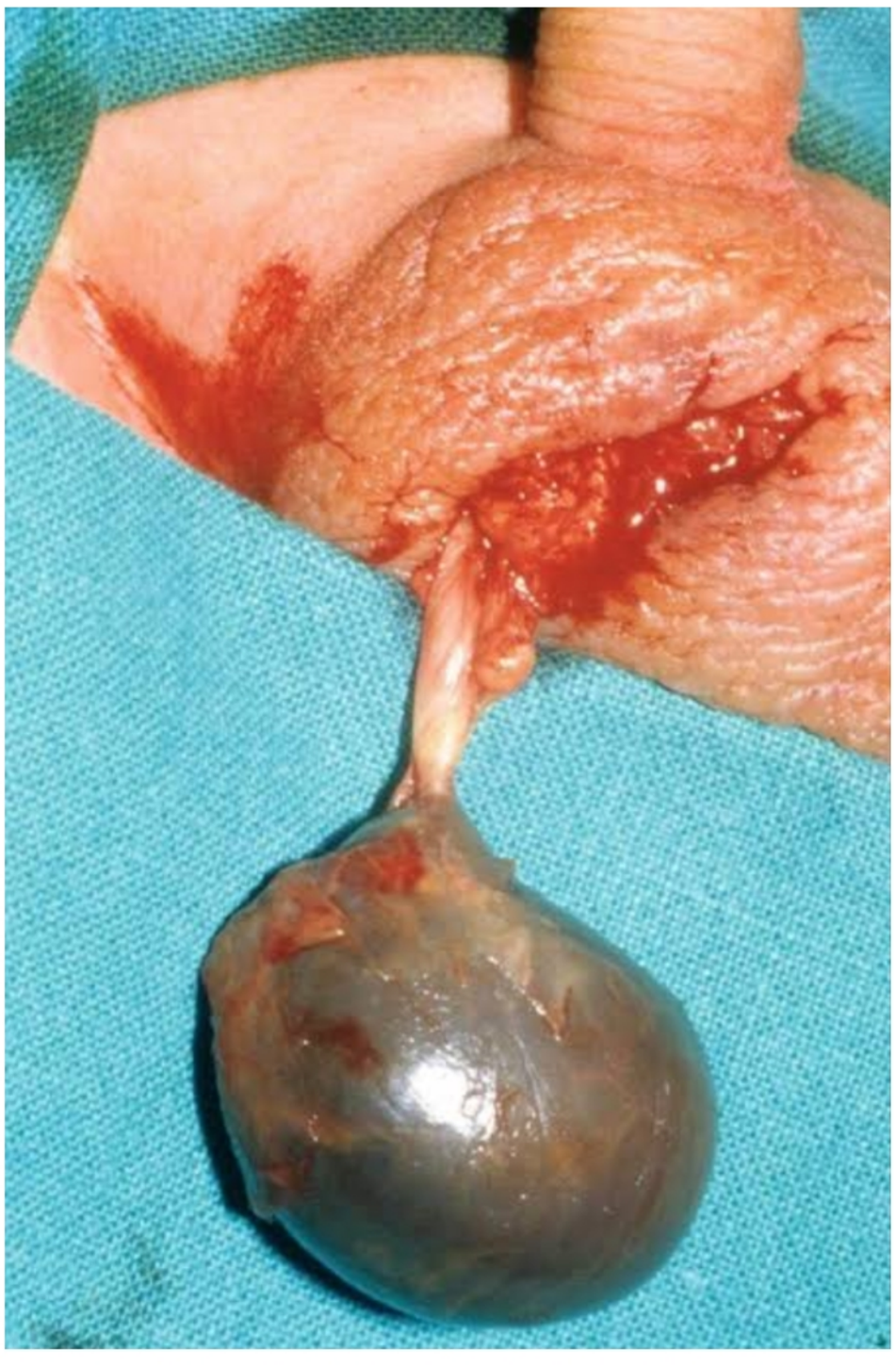
Diagnose

Varicocele grades
Grade 0 not detectable in physical exam but detected on ultrasound
Grade 1 palpable after valsalva
Grade 2 palpable after standing position
Grade 3 visible

Left renal mass
Renal cell carcinoma

Types of Nephrectomy

Type	Tissue Removed	Common Indication
Simple	Kidney	Non-functioning kidney
Radical	Kidney + fat + fascia ± adrenal ± nodes	RCC, large tumors
Partial	Part of kidney	Small tumor, preserve function
Laparoscopic	Kidney via minimal incision	Any of above, if suitable
Donor	Kidney	Living kidney transplant



Testicular Torsion

Testicular Torsion

- Adolescent boy with sudden, severe unilateral scrotal pain, often waking him from sleep, associated with nausea and vomiting.
- Sudden onset scrotal pain
- Nausea & vomiting (very common)
- Neonates and adolescents (12–18 years)
- Physical Examination Findings
    - High-riding testis - Affected testis sits higher than normal
    - Horizontal lie of testis - Due to bell-clapper deformity
    - Absent cremasteric reflex - Most sensitive physical sign (Stroking inner thigh → no testicular elevation)
    - Swollen, tender scrotum
    - Negative Prehn sign - Elevation of testis does NOT relieve pain
- Do NOT delay surgery for imaging if suspicion is high
- Doppler US shows absent blood flow (if done)
- Immediate surgical exploration should be done
- Bilateral orchiopexy (even if torsion is unilateral)
- “Sudden scrotal pain + vomiting in adolescent” → torsion
- “Absent cremasteric reflex” → torsion
- “High-riding, horizontal testis” → torsion
- “Negative Prehn sign” → torsion

A 7 yr old boy with swelling in eyes: nephrotic syndrome
Investigations and treatment

Nephrotic Syndrome

Investigations

* Urine Dipstick test - Specific for albumin (detects concentration of 30 mg/dL or higher)
* Urinalysis
RBC cast suggest glomerulonephritis
WBC cast suggest Pyelonephritis and interstitial nephritis
Fatty casts suggest Nephrotic syndrome
* Test for Microalbuminuria - corresponds to albumin excretion of 30 to 300 mg/day

Acromegaly Scenario

Facial features of acromegaly: a prominent jaw line (macrognathia) as well as frontal bossing (prominent, protruding forehead).

- Two Signs
- Investigation

Investigation for acromegaly
Serum GH and IGF 1
Serum prolactin
Ogtt(gh suppression test)
Mri brain

Pituitary overproduction of growth hormone → enlarged connective tissue, bones, and visceral organs

- macrognathia (enlarged jaw)
- macroglossia (enlarged tongue)
- enlargement of nose, epiglottis, pharyngeal tissue, laryngeal tissue

Two classic clinical signs of **Acromegaly**:

1️⃣ **Enlarged hands and feet**

- Increased ring or shoe size
- Spade-like hands

2️⃣ **Coarse facial features**

- Frontal bossing
- Enlarged nose and lips
- Prognathism (protruding jaw)

Oxytocin
Mechanism of action Uses
Uses in obs
Complications

Oxytocin

Mechanism of action:

- Acts through **oxytocin receptors** present in smooth muscles of myometrium.
- Stimulates the amniotic and decidual prostaglandin production.
- Mobilization of bound intracellular calcium from sarcoplasmic reticulum to activate the contractile protein.
- There is increase in frequency and force of uterine contractions, similar to physiological uterine contractions

INDICATIONS

1. Induction of labour.
2. Augmentation of labour (when contractions are weak).
3. Active management of third stage of labour.
4. Prevention and treatment of postpart-um hemorrhage (PPH).
5. Facilitation of uterine contraction after

Complications of oxytocin – Maternal.

- Uterine hyperstimulation
- Uterine rupture
- Water intoxication
- Hypotension
- Antidiuresis