

# Amniotic Fluid Disorders

*Oligohydramnios vs Polyhydramnios vs Anhydramnios*

High-yield review for clinical judgment, prioritization & exam success.

## Definition & Why It Matters

*Amniotic fluid protects, cushions, and supports fetal lung & limb development.*

### Amniotic Fluid Index (AFI) — Reference Ranges



**OLIGOHYDRAMNIOS**

**AFI < 5 cm**

Too LITTLE amniotic fluid. Often linked to placental insufficiency, post-term pregnancy, ROM, or fetal renal issues.



**POLYHYDRAMNIOS**

**AFI > 25 cm**

Too MUCH amniotic fluid (>2000 mL). Linked to maternal DM, multiple gestation, or fetal GI/neural anomalies.



**ANHYDRAMNIOS**

**AFI = 0**

Near-total ABSENCE of fluid. Most severe form; often bilateral renal agenesis (Potter) or prolonged ROM.

# Pathophysiology & Causes

Amniotic fluid balance = fetal urine production (in) vs fetal swallowing (out).

**FLUID BALANCE:** Fetal urine + lung fluid → Amniotic cavity → Fetal swallowing + placental/membrane reabsorption



## OLIGOHYDRAMNIOS

↓ IN or ↑ OUT

### MECHANISM

↓ Fetal urine production OR fluid loss > reabsorption

- 1 Placental insufficiency
- 2 ↓ Renal perfusion in fetus
- 3 ↓ Fetal urine output
- 4 ↓ Amniotic fluid volume

### COMMON CAUSES

- Post-term pregnancy (>42 wk)
- Premature ROM / PROM
- Placental insufficiency, preeclampsia, HTN
- Fetal renal anomalies (dysplasia, obstruction)
- Maternal dehydration
- Meds: ACE inhibitors, NSAIDs (indomethacin)



## POLYHYDRAMNIOS

↑ IN or ↓ OUT

### MECHANISM

↑ Fetal urine OR fetus cannot swallow/absorb fluid

- 1 Maternal hyperglycemia (DM)
- 2 ↑ Fetal osmotic diuresis
- 3 OR GI/CNS anomaly → no swallow
- 4 ↑ Amniotic fluid volume

### COMMON CAUSES

- Maternal diabetes (most common)
- Multiple gestation (twin-twin transfusion)
- Fetal GI atresia (esophageal, duodenal)
- Neural tube defects, anencephaly
- Fetal hydrops, Rh incompatibility
- TORCH infections



## ANHYDRAMNIOS

NO fluid production

### MECHANISM

Severe or complete failure of fluid input → cavity collapses

- 1 Bilateral renal agenesis OR
- 2 Prolonged membrane rupture
- 3 No fetal urine / total loss
- 4 AFI = 0 → Potter sequence

### COMMON CAUSES

- Bilateral renal agenesis (Potter syndrome)
- Severe placental insufficiency
- Prolonged / previable PROM
- Obstructive uropathy (complete)
- Often incompatible with life

# Signs, Symptoms & Red Flags

Assessment findings clinically differentiate each condition.

## OLIGOHYDRAMNIOS

### EARLY / MILD

- Fundal height < expected for gestational age
- Fetus easily palpated through abdomen
- ↓ Maternal abdominal girth
- Mild ↓ in fetal movement

### LATE / SEVERE / 🚨

- **Variable FHR decelerations (cord compression)** 🚨
- **Non-reactive NST / abnormal BPP** 🚨
- IUGR on ultrasound
- **Meconium-stained fluid (post-term)** 🚨
- Pulmonary hypoplasia (if severe, prolonged)

## POLYHYDRAMNIOS

### EARLY / MILD

- Fundal height > expected for gestational age
- Difficulty palpating fetus / hearing FHR
- Maternal SOB, orthopnea
- ↑ Abdominal girth, LE edema

### LATE / SEVERE / 🚨

- **Preterm labor / PPROM** 🚨
- Malpresentation (unstable lie)
- **Cord prolapse when membranes rupture** 🚨
- **Placental abruption** 🚨
- **Postpartum hemorrhage (uterine overdistention)** 🚨

## ANHYDRAMNIOS

### EARLY / MILD

- AFI = 0 on ultrasound
- Fundal height markedly small
- History of prolonged ROM
- Fetus crowded / compressed on imaging

### LATE / SEVERE / 🚨

- **POTTER SEQUENCE** 🚨
  - Pulmonary hypoplasia (lethal)
  - Limb contractures & deformities
  - Flattened facies, low-set ears
- **Severe variable decels / fetal demise** 🚨
- **Frequently incompatible with life** 🚨



### TOP RED FLAGS — ACT FAST

**Variable decels** (cord compression — oligo) • **Sudden fundal ↑** (cord prolapse risk — poly) • **Potter sequence** (anhydramnios) • **Non-reassuring FHR** pattern in any category

# Priority Nursing Interventions & Pharmacology

Apply ABC → Safety → NCLEX prioritization. Action verbs: assess, monitor, position, administer, prepare.

**PRIORITY FRAMEWORK:** Airway (fetal) → Breathing (maternal/fetal O<sub>2</sub>) → Circulation (FHR, perfusion) → Safety → Education

## OLIGOHYDRAMNIOS

- MONITOR** continuous FHR for variable decels (cord compression)
- POSITION** left lateral to improve uteroplacental perfusion
- ADMINISTER** IV fluids; O<sub>2</sub> 8–10 L via non-rebreather mask PRN
- PREPARE** for amnioinfusion (warmed NS via IUPC during labor)
- ASSESS** NST, BPP, daily fetal kick counts
- ANTICIPATE** early induction or cesarean if fetal distress

## POLYHYDRAMNIOS

- MONITOR** for preterm labor, PPROM, and maternal respiratory status
- ASSESS** fundal height, glucose (GDM screen), fetal anomalies on U/S
- POSITION** semi-Fowler's to ease maternal SOB
- PREPARE** for amnioreduction (therapeutic amniocentesis)
- AT ROM**  immediately check FHR + inspect for cord prolapse
- POSTPARTUM** monitor closely for uterine atony / PPH

## ANHYDRAMNIOS

- ASSESS** fetal viability; confirm with ultrasound + MRI
- SUPPORT** provide compassionate grief & counseling care
- COORDINATE** MFM, neonatology, palliative care, social work
- PREPARE** family for poor prognosis (Potter sequence)
- DISCUSS** options: expectant mgmt, early delivery, comfort care
- MONITOR** for maternal infection if prolonged ROM is the cause

## PHARMACOLOGY KEY POINTS



**Indomethacin (NSAID):** used SHORT-TERM in polyhydramnios to ↓ fetal urine output. Avoid after 32 wk (risk: premature ductus arteriosus closure, oligohydramnios). • **Betamethasone:** fetal lung maturation if preterm delivery likely (24–34 wk). • **ACE inhibitors & NSAIDs:** contraindicated in pregnancy — CAN CAUSE oligohydramnios.

# NCLEX Test Traps & Patient Education

Know what they confuse and what the priority action actually is.

## NCLEX TEST TRAPS

### Confusing fundal height findings

**X TRAP:** Assuming large fundal height = large baby.

✓ **CORRECT:** Large-for-dates = POLY; small-for-dates = OLIGO or IUGR.

### Variable decels — cause matters

**X TRAP:** Treating variable decels as head compression.

✓ **CORRECT:** In oligo, variables = CORD COMPRESSION. Reposition, O<sub>2</sub>, amnioinfusion.

### First action at ROM in polyhydramnios

**X TRAP:** Calling the provider first.

✓ **CORRECT:** First ASSESS FHR immediately — rule out cord prolapse, then notify.

### Indomethacin timing

**X TRAP:** Using indomethacin any time in pregnancy.

✓ **CORRECT:** Only short-term; NOT after 32 wk — closes fetal ductus arteriosus.

### Postpartum risk in polyhydramnios

**X TRAP:** Forgetting PPH risk once baby is out.

✓ **CORRECT:** Overdistended uterus → atony → PPH. Massage, oxytocin, monitor bleeding.

### Anhydramnios counseling

**X TRAP:** Offering false reassurance to the family.

✓ **CORRECT:** Honest, compassionate care + MFM, palliative, social support.

## PATIENT EDUCATION

### ALL PATIENTS

- Perform daily fetal kick counts (report < 10 in 2 hr).
- Keep all prenatal appointments; do not skip NST / BPP.
- Report sudden gush or leakage of fluid immediately.

### OLIGOHYDRAMNIOS

- Maintain hydration — 8–10 glasses of water daily.
- Rest in left-lateral position to optimize blood flow.
- Avoid ACE inhibitors and NSAIDs in pregnancy.

### POLYHYDRAMNIOS

- Strict blood glucose control if diabetic.
- Report contractions, SOB, or decreased fetal movement.
- Go to L&D immediately if water breaks — cord prolapse risk.

### ANHYDRAMNIOS

- Expect multidisciplinary care & honest prognosis.
- Connect with perinatal grief & palliative support.
- Follow up for psychosocial care postpartum.

# Memory Boosters & Mnemonics

Lock it in: fast associations for test day.

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| <div><div>O</div><div>OLIGO = LOW</div></div> <div><b>OLIGO</b><ul style="list-style-type: none"><li><b>O</b> Output (fetal urine) ↓</li><li><b>L</b> Leak — premature ROM</li><li><b>I</b> Insufficiency (placental)</li><li><b>G</b> GA &gt; 42 wk (post-term)</li><li><b>O</b> Organ (kidney) anomaly</li></ul></div> | <div><div>P</div><div>POLY = PLENTY</div></div> <div><b>POLY</b><ul style="list-style-type: none"><li><b>P</b> Pregestational DM</li><li><b>O</b> Obstruction (esophageal/duodenal atresia)</li><li><b>L</b> Large for dates + multiples</li><li><b>Y</b> Yes, fetal anomalies (anencephaly, hydrops)</li></ul></div> | <div><div>A</div><div>ANHY = ABSENT</div></div> <div><b>POTTER</b><ul style="list-style-type: none"><li><b>P</b> Pulmonary hypoplasia</li><li><b>O</b> Oligo (severe) → anhydramnios</li><li><b>T</b> Twisted limbs (contractures)</li><li><b>T</b> Typical flattened (Potter) facies</li><li><b>E</b> Ears low-set</li><li><b>R</b> Renal agenesis (bilateral)</li></ul></div> |
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## PATTERN-RECOGNITION PEARLS

Diabetic mom + large fundus → Polyhydramnios

Leaking fluid + small fundus → Oligo (from PROM)

Drug that CAUSES oligo → ACE inhibitors, NSAIDs

First action at ROM in polyhydramnios → Check FHR (cord prolapse!)

Post-term + small fundus + variables → Oligohydramnios

AFI = 0 + no fetal bladder visualized → Anhydramnios (renal agenesis)

Drug that TREATS polyhydramnios → Indomethacin (< 32 wk)

Postpartum risk in polyhydramnios → Uterine atony → PPH