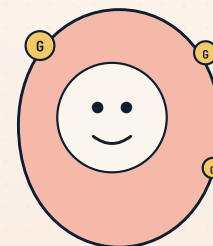


NCLEX 2026 • MATERNAL-NEWBORN HEALTH

Pregestational & Gestational Diabetes



ENDOCRINE × OB

CLINICAL JUDGMENT

SAFE & EFFECTIVE CARE

HIGH YIELD 🔥

01 Definition

Two conditions, one *placenta*.

OVERVIEW

TYPE A • PREGESTATIONAL

Diabetes *before* pregnancy

Type 1 or Type 2 DM diagnosed prior to conception.

Hyperglycemia during **organogenesis** (weeks 3–8) ⇒ ↑ risk of **congenital anomalies**, especially cardiac & neural tube defects.

Tight control **before** conception is protective — HbA1c goal < 6.5%.

TYPE B • GESTATIONAL (GDM)

Diabetes *during* pregnancy

First recognized in pregnancy, typically **24–28 weeks**.

Driven by **placental hormones** — resolves after delivery of the placenta.

↑ lifetime risk of **Type 2 DM** for mom; ↑ macrosomia & neonatal hypoglycemia for baby.

02 Pathophysiology

Why the *placenta* breaks glucose control.

STEP-BY-STEP

◆ THE CASCADE — 2ND & 3RD TRIMESTER

① PLACENTA

Releases **hPL**, cortisol, estrogen & progesterone.

② RESISTANCE

Hormones cause maternal **insulin resistance**.

③ HYPERGLYCEMIA

Pancreas can't keep up ⇒ **maternal ↑ glucose**.

④ CROSSES

Glucose **crosses placenta**; insulin does **NOT**.

⑤ FETAL EFFECT

Fetus makes **own insulin** ⇒ growth factor ⇒ **macrosomia**.

Key concept: Glucose crosses. Insulin doesn't. After birth, the glucose source is cut — but baby's high insulin keeps pulling sugar down ⇒ neonatal hypoglycemia.

03 *Signs & Symptoms*

What you'll see & assess.

ASSESSMENT

EARLY / MILD (OFTEN SUBTLE)

Mother

3 P'S Polyuria, Polydipsia, Polyphagia

Fatigue & unexplained weight changes

Recurrent **UTIs** & vaginal **yeast infections**

Large-for-dates **fundal height**

Blurred vision, slow wound healing

LATE / SEVERE – COMPLICATIONS

Maternal & Fetal

Polyhydramnios (fetal polyuria from ↑ glucose)

Macrosomia (> 4000 g / 8 lb 13 oz)

Preeclampsia & HTN

IUGR (pregestational w/ vascular disease)

↓ fetal movement / kick counts



RED FLAG FINDINGS — Act Now

- ▶ **DKA** (Type 1): fruity breath, Kussmaul respirations, N/V, AMS — fetus at extreme risk.
- ▶ **Severe hypoglycemia** : < 60 mg/dL with sweating, tremor, confusion, seizure.
- ▶ **Absent or ↓ fetal movement** — non-reassuring fetal status.
- ▶ **Preeclampsia** : BP ≥ 140/90, headache, visual changes, RUQ pain, proteinuria.
- ▶ **Shoulder dystocia at delivery** : “turtle sign” — OB emergency.

04 *Priority Interventions*

ABCs, safety, tight glucose.

ACTION VERBS

PRIORITY 1

Antepartum

MONITOR fasting & postprandial BG 4x daily

ASSESS HbA1c each trimester

PRIORITY 2

Diet & Activity

PROVIDE 30 kcal/kg/day, ~175 g carbs

ENCOURAGE 3 meals + 3 snacks, **complex** carbs

PRIORITY 3

Intrapartum

CHECK BG q1–2h during labor

MAINTAIN BG 70–110 mg/dL

PRIORITY 4

Postpartum & Newborn

CHECK neonate BG within 30 min — then q1h

SCREEN for GDM with 1-hr GTT at 24–28 wk

TEACH SMBG technique & log-keeping

ORDER NSTs, BPP & growth U/S 3rd tri

PROMOTE post-meal walking 10–30 min

AVOID skipped meals, simple sugars, juice

INFUSE IV insulin + D5 per protocol

ANTICIPATE C-section if EFW > 4500 g

PREPARE for shoulder dystocia

FEED early (breast or formula) to prevent hypo

REDUCE maternal insulin ~ $\frac{1}{3}$ – $\frac{1}{2}$ after delivery

RESCREEN mom 6–12 wk PP with 75 g OGTT

ENCOURAGE breastfeeding (↓ future T2DM)

♦ TARGET BLOOD GLUCOSE IN PREGNANCY

FASTING

< **95** mg/dL

1-HR POSTPRANDIAL

< **140** mg/dL

2-HR POSTPRANDIAL

< **120** mg/dL

HBA1C

< **6 %** ideal

05 Pharmacology

Meds that respect the placenta.

DRUGS

HORMONE • INJECTABLE

Insulin

★ FIRST LINE

MECHANISM

Replaces endogenous insulin. **Does NOT cross placenta** ⇒ safest in pregnancy.

SIDE EFFECTS

Hypoglycemia, weight gain, injection-site reaction, lipohypertrophy.

NURSING

Needs ↑ **2–3×** by 3rd trimester. **Drop sharply** after delivery — re-dose or hold. Rotate sites. Teach S/S hypo.

BIGUANIDE • PO

Metformin

ACCEPTABLE

MECHANISM

↓ hepatic glucose production, ↑ peripheral insulin sensitivity. **Crosses placenta** but considered safe.

SIDE EFFECTS

GI upset, **lactic acidosis** (rare), vitamin B12 ↓.

NURSING

Hold for contrast studies. Take with meals. Monitor renal function. Many pts transition to **insulin** in 3rd tri.

SULFONYLUREA • PO

Glyburide

USE W/ CAUTION

MECHANISM

Stimulates pancreatic β-cells. Minimal placental transfer in theory — newer data show some transfer.

SIDE EFFECTS

Maternal & neonatal hypoglycemia, weight gain.

NURSING

Not first-line per ACOG — **insulin preferred**. Monitor neonate closely for hypoglycemia after delivery.

06 NCLEX Test Traps

Where students *lose points*.

TRAPS



TRAP #1 • INSULIN NEEDS

Students forget insulin requirements **↑**
INCREASE through 2nd & 3rd trimesters, then **↓**
DROP sharply within hours of delivery.

Correct: Delivery of the placenta = removal of
insulin-resistance hormones. Watch for **maternal**
hypoglycemia postpartum.

TRAP #2 • NEWBORN GLUCOSE

Expecting baby to be **hyperglycemic** at birth
because mom was. Wrong — baby is
HYPOglycemic.

Correct: Fetal hyperinsulinemia persists after cord
clamping. Check neonate BG **within 30 min**; feed
early.

TRAP #3 • WHICH ORAL AGENT?

Picking **glyburide or metformin** as first line for
pregestational DM.

Correct: Insulin is the gold standard — doesn't
cross the placenta.

TRAP #4 • SCREENING WINDOW

Confusing the 1-hr screen with the 3-hr
diagnostic.

Correct: 1-hr 50 g GTT at 24–28 wk = **screen**. If $\geq$
140 $\Rightarrow$ 3-hr 100 g GTT = **diagnostic**.

TRAP #5 • MEAL SKIPPING

Advising patient to skip carbs or meals to “lower
glucose.”

Correct: Pregnancy requires ~175 g carbs/day.
Skipping meals $\Rightarrow$ **ketosis**, which harms fetal brain
development.

TRAP #6 • PRIORITY AT DELIVERY

Picking “document macrosomia” over preparing
for complications.

Correct: Anticipate **shoulder dystocia** & neonatal
resuscitation — safety & ABCs first.

07 Patient Education

What *she* needs to know.

TEACHING



Self-monitoring BG

Check fasting & 1–2 hr after
each meal. Keep a log. Call
provider if fasting > 95 or
postprandial > 140 repeatedly.



Diet & Carb Control

3 meals + 3 snacks, complex
carbs, lean protein at every
meal, limit simple sugar & juice.
Do NOT skip meals.



Safe Exercise

Walk 10–30 min after meals.
Avoid supine exercise after 20
wk. Carry a fast-acting carb
source.



Insulin Technique

Rotate sites, store unopened vials refrigerated, never share pens. Expect higher doses as pregnancy advances.

Fetal Surveillance

Do **daily kick counts** in 3rd tri (10 movements / 2 hr). Report ↓ movement immediately.

Postpartum Plan

Breastfeed if possible — lowers future T2DM risk for you & baby. Return at 6–12 wk for 75 g OGTT rescreen.

08 Memory Boosters

Stick it to *long-term memory*.

MNEMONICS

M MACROSOMIA risks

M Meals too sugary (maternal hyperglycemia)
A natomic trauma (shoulder dystocia)
C -section likely
R DS (surfactant delayed)
O ver 4000 g birth weight

3P Classic hyperglycemia

P olyuria — peeing a lot
P olydipsia — thirsty
P olyphagia — hungry
Add: fatigue, blurred vision, infections

↑ ↓ Insulin roller-coaster

↑ UP in 2nd & 3rd trimester (placenta hormones)
↓ DOWN sharply after delivery of placenta
Adjust doses — prevent PP hypoglycemia

GX Glucose crosses • Insulin doesn't

Mom's sugar reaches baby
Baby makes **own insulin** ⇒ grows big
Cord cut ⇒ sugar supply gone, insulin stays high ⇒ **neonatal hypoglycemia**

Study Smart • Pass Smarter

NCLEX 2026 • MATERNAL NEWBORN • V1.0