GESTATIONAL DIABETES REVISITED

Evidence-Based Strategies for APRNs

SCREENING • NUTRITION • PHARMACOLOGY

APRNworld

GESTATIONAL DIABETES REVISITED:
EVIDENCE-BASED STRATEGIES FOR APRNS IN SCREENING, NUTRITION, AND PHARMACOLOGY

ANCC Accredited NCPD Hours: 2 hrs

Target Audience: APRN/WHNP/CNM

NEED ASSESSMENT

GDM is a common medical condition in pregnancy and a leading cause of maternal and neonatal morbidity worldwide. Prevalence is now 10–14% worldwide but is significantly variable by geographical region and diagnostic criterion. Prevalence in high-income nations is rising in tandem with increased maternal age at delivery, obesity, and pre-existing screening activity. These trends thus identify a growing public health importance for GDM as a focus for perinatal care.

The consequences for GDM are also clearly defined. Pregnant women with GDM are at increased risk for hypertensive disorders, caesarean delivery, and type 2 diabetes; children are at risk for macrosomia, shoulder dystocia, neonatal hypoglycaemia, polyhydramnios, and later obesity and metabolic disease. Evidence also shows that if hypertensive disorders coexist with GDM, risks are increased for mother and child.

Guidelines are updated continuously, in parallel with advancements as well as lingering uncertainty. Focused pathways for screening, glycaemic goals, and postpartum follow-up are shared between ADA 2025 Standards of Care and NICE 2025 guidelines, while increased diagnostic thresholds and selective early HbA1c screening in high-risk women were advocated by Australasian Diabetes in Pregnancy Society (ADIPS 2025) in a bid for reduced over-diagnosis and superior allocation of resources. These differences reflect diagnostic uncertainty as well as practice variation with consequent direct impacts upon patient care and health system allocation.

Methods for its management also raise some concerns. Physical activity remains first-line therapy in addition to medical nutrition therapy. Insulin remains first-line pharmacologic therapy; there is additional use of metformin for its beneficial effect in reducing maternal weight gain as well as some

perinatal complications. However, there remain concerns about its potential long-term effect on offspring's metabolic health, an area critically in need of research. At the same time, technology-driven care–especially continuous glucose monitoring (CGM)—is taking on a transformative role. Preliminary trials show CGM enhances glycaemic control and might lower perinatal adverse outcomes versus self-monitoring. Nonetheless, there are issues about its use, cost-utility, and equity, especially in resource-scarce environments.

These, in combination, create an imperative for research and innovation for advanced practice nurses (APRNs). These include refinement in diagnostic criteria for an optimal balance between specificity and sensitivity, delineation of comparative effectiveness and safety of pharmacologic options, integration of technology such as CGM in daily practice, and creation of risk-stratified care bundles for women with both hypertensive disorders and GDM. Responsible use of resources and ensuring equity are also necessary since guidelines at a regional level are increasingly adamant about not over-diagnosing or unnecessarily intervening.

As a whole, GDM is an evolving and dynamic maternal–fetal speciality in which APRNs are leaders. Through their innovation in evidence-based practice, research, and their support for interprofessional practice, APRNs are optimally positioned to improve diagnostic methods, guide patient-oriented therapy, and assume innovative care strategies for better mother–infant outcomes while ensuring health equity.

OBJECTIVES

Through this educational activity, the Advanced Practice Registered Nurse (APRN) should be able to:

- Critically examine recent epidemiological data on prevalence and trends for GDM and reflect upon how rising maternal age, obesity, and shifting screening strategies influence clinical practice.
- Compare recent worldwide diagnostic criteria (ADA/ACOG, WHO/NICE, ADIPS 2025) and their implications for maternal–fetal outcomes, overdiagnosis, and health system burden.
- Use evidence-based nutrition and lifestyle management approaches, including cultural, socioeconomic, and patient-oriented factors in making individualised care plans.
- Compare and make decisions about pharmacologic options for GDM (insulin versus metformin, keeping in mind safety for long-term offspring) and make shared decision-making plans in alignment with patient preference and evidence-based guideline recommendations.

- Integrate newer technologies such as continuous glucose monitoring (CGM) in intensified GDM care, weighing their impacts on glycaemic control, perinatal outcomes, economic efficiency, and equity.
- Develop risk-stratified care strategies for women with GDM and co-incident hypertensive disorders according to recent literature concerning compound maternal–fetal risks.
- Design interprofessional care plans which enhance communication between obstetric, endocrine, nursing, nutrition, and paediatric groups based on equity, responsible stewardship of resources, and patient-centred care.
- Evaluate approaches to postpartum care, with glucose testing, prevention of type 2 diabetes, and longer-term maternal and offspring follow-up, against up-to-date ADA 2025 Standards of Care and NICE guidelines.

GOAL

The goal of this continuing education activity is for Advanced Practice Registered Nurses (APRNs) to enhance their knowledge and clinical decision-making in screening for, diagnosing, and treating gestational diabetes mellitus (GDM). By incorporating recent evidence, shifting guidelines, and recent advances, including refined diagnostic standards, pharmacologic information, and technology-enabled care, APRN learners will be prepared to implement patient-centred, evidence-informed interventions for optimising maternal and neonatal outcomes while encouraging long-term health.

INTRODUCTION

GDM is a common metabolic disorder in pregnancy and a major maternal and perinatal health issue worldwide. Today's prevalence is 10–14% of worldwide pregnancies, though it varies considerably geographically, by maternal demographics, and diagnostic criteria. Prevalence is greater in recent US/Canadian compared with European meta-analytic data and is explained by increased maternal age, increased prevalence of obesity, and detection at a younger gestational age. Similar increased prevalence is noted in middle- and high-income countries in keeping with increased public health disease burden due to GDM.

Maternal and neonatal results of GDM are definitively set. Short-term complications include macrosomia, shoulder dystocia, neonatal hypoglycaemia, preeclampsia, caesarean delivery, and polyhydramnios. Long-term consequences are type 2 diabetes mellitus and cardiovascular disease in mothers and obesity and metabolic disease in offspring. Of particular note is that when GDM is combined with hypertensive disorders in pregnancy,

maternal and fetal complications are significantly enhanced.

Guidelines are revised in consideration of a changing clinical setting. American Diabetes Association (ADA) Standards of Care 2025 advocate structured screening, standardised glucose targets, and postpartum follow-up for recognition of latent dysglycemia. The National Institute for Health and Care Excellence (NICE, April 2025 onwards) recommends evidence-based recommendations for glucose testing, antenatal screening, and individualised glycaemic control. Of interest is that the Australasian Diabetes in Pregnancy Society (ADIPS, 2025) raised diagnostic glucose thresholds and included first-trimester HbA1c screening for women at risk, with a declared intention for reducing over-diagnosis and maximising resource allocation. These changing recommendations are a source of continuing controversy concerning diagnostic thresholds, maternal–fetal benefit, and healthcare system burden.

Treatment continues to advance as well. Exercise and medical nutrition therapy remain the cornerstone for preterm treatment. Insulin is still the eventual pharmacologic agent when lifestyle interventions are insufficient, and use of metformin is increasing based on its ease of administration and potential maternal benefit. Yet, there remains a question about its use in the longer term for its offspring's health effect, so judicious, individualised prescribing is needed. CGM remains an encouraging technology in steady evolution whose early research indicated improved maternal glycaemic control and potential perinatal benefit over self-monitoring. Problems remain about cost, availability, and equity, though.

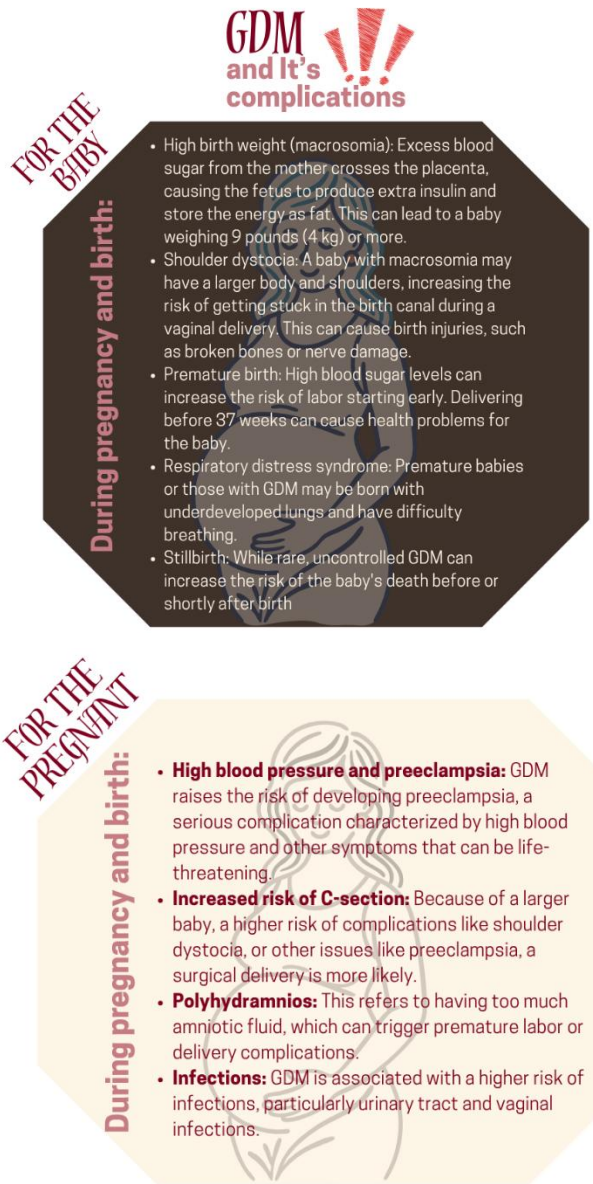
With the increased prevalence of GDM and revised guidelines, Advanced Practice Registered Nurses (APRNs) are fundamental in their contribution. APRNs are in an ideal position to interpret new evidence, personalise approaches to care, integrate technologies into practice, and lead interprofessional groups in delivering patient-centred, compassionate, and evidence-informed care which optimises mother and baby outcomes equally.

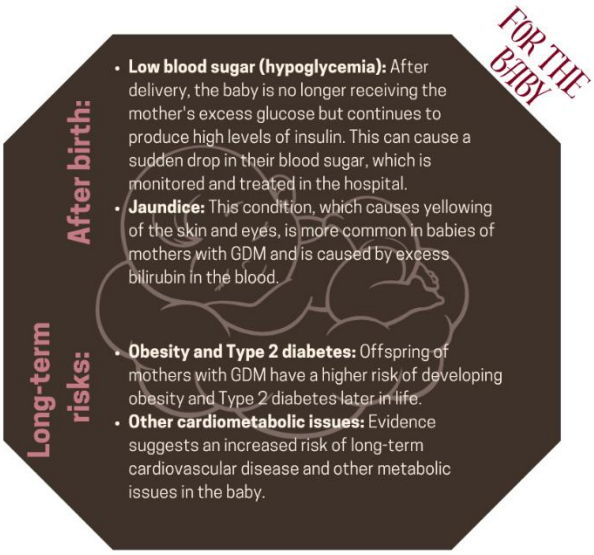
GESTATIONAL DIABETES MELLITUS (GDM)

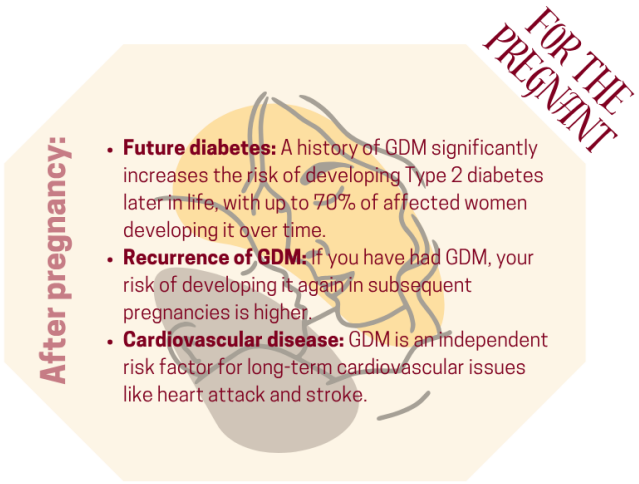
Gestational diabetes mellitus (GDM) is the first-recognised glucose intolerance in pregnancy, usually at or above 24 weeks of gestation, when human placental lactogen, progesterone, and cortisol induce gradually acquired insulin resistance. Pre-existing diabetes differs in that GDM is a metabolic disease specific to pregnancy, which is often gone at delivery but holds serious short- and long-term implications for mother and child.

The importance of GDM in women's health is solidified. Women with GDM are 2–4 times

more at risk for developing hypertensive disorders of pregnancy, including preeclampsia, and are at a heightened risk for cesarean section. Subsequent research shows that 50% of women with GDM will develop type 2 diabetes within 10–20 years, and their lifetime risk is nearly 10 times higher compared to women without GDM. GDM also increases cardiovascular disease and metabolic syndrome risk in later life, so postpartum counselling is needed with appropriate follow-up.





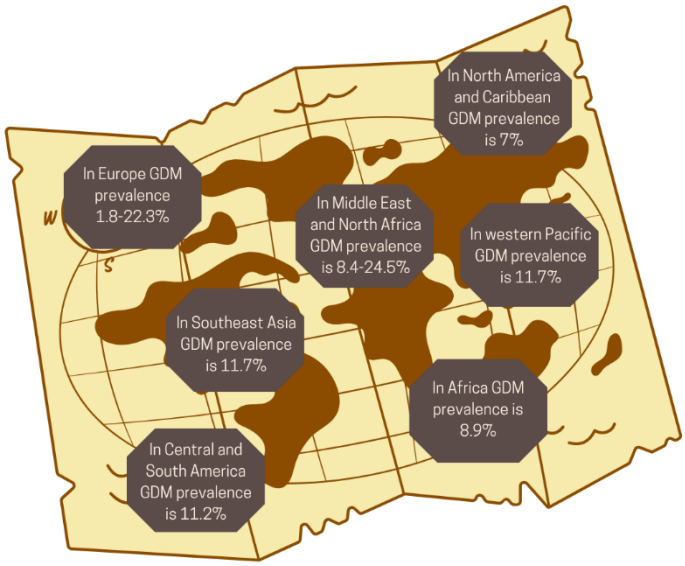


For the exposed-in-utero neonate with maternal hyperglycaemia, macrosomia may result in perinatal injury such as shoulder dystocia and brachial plexus damage, and risk of cesarean delivery. Infants are also at risk for neonatal hypoglycemia, respiratory distress syndrome, hyperbilirubinemia, and NICU admission. Beyond the perinatal period per se, there is an epidemiologic suggestion for children of mothers with GDM having twice greater risk for obesity and metabolic disease in adolescence and young adults.

From a practice-of-nursing perspective, GDM is distinctive inasmuch as it requires early detection, counselling of patients, continuous tracking for glucose, and psychosocial support. Nurses are central in ensuring women understand dietary intervention requirements, safe exercise habits, adherence to medicine, and follow-up in the postpartum phase. Through closing the gap between guideline recommendations at a national level and bedside practice at a clinical level, registered nurses are prime actors in reducing preventable complications, maximising maternal–fetal outcomes, and breaking the cycle of metabolic disease between generations.

EPIDEMIOLOGY OF GDM—AND ITS PRACTICAL IMPLICATIONS

Prevalence



The prevalence of Gestational Diabetes Mellitus globally.2023 Data

Prevalence is continually high worldwide: IDF conservatively estimates ~1 in 6 live births is directly impacted by GDM (and ~1 in 5 by any pregnancy hyperglycaemia), which emphasises a large, diverse at-risk population across income groups. Prevalence varies enormously by geographical location and diagnostic test, so "the rate" is at least as much a function of what you test for and how you define GDM as it is an indication of underlying biology.

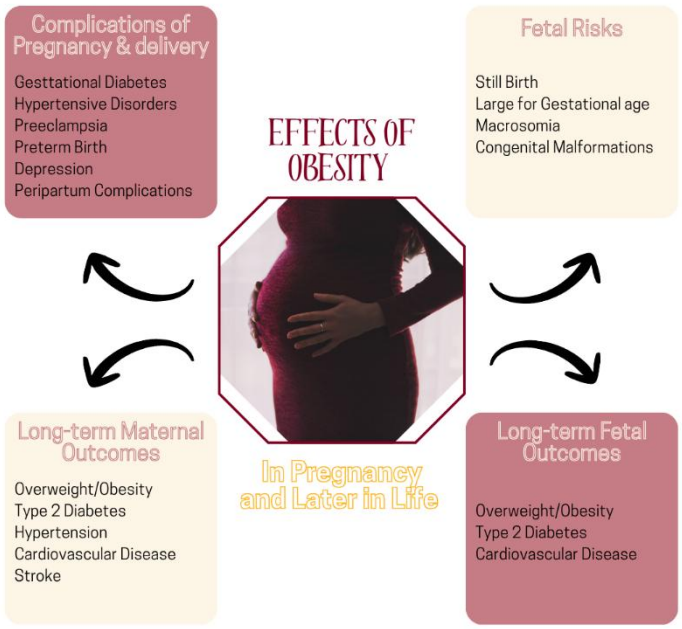
North America versus Europe

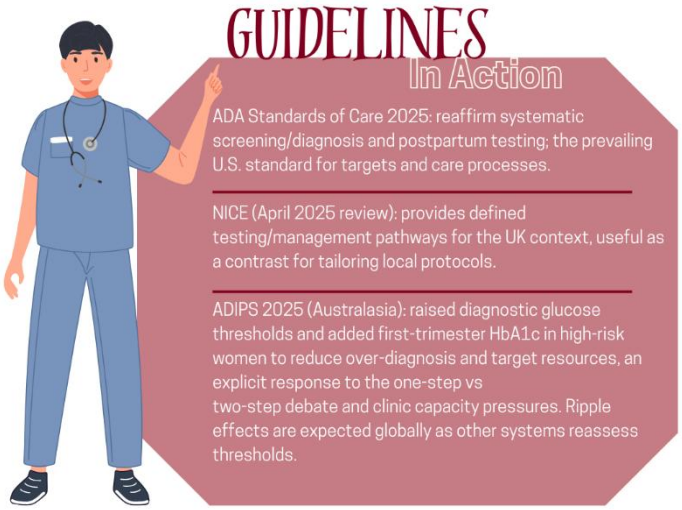
Prevalence in 2024 in a meta-analysis was slightly higher in the U.S./Canada than in Europe, in line with maternal age and adiposity patterns, but also reflecting earlier and more sensitive screening in some health systems. APRNs should consider local prevalence in conjunction with the method of screening in use.

Maternal age and obesity

Advanced maternal age and pre-/early-pregnancy obesity markedly shift population risk. Syntheses link maternal obesity + GDM to increased adverse infant-child outcomes (e.g., higher LGA, later obesity/metabolic risk), substantiating a need for risk-stratified prevention and counselling at preconception or the first prenatal visit. Cohort studies also show higher abnormal plasma glucose with advancing age and higher BMI even in active women, suggesting lifestyle alone may not

offset risk once pregnancy-related insulin resistance emerges.





Practice Implications for APRNs

- **Risk-stratify early & often:**
  Age ≥35 and elevated BMI should prompt early counselling (nutrition, weight-gain goals), early labs (e.g., HbA1c per local guidelines), and closer follow-up.
- **Choose (and document) your screening logic:**
  Anticipate differences in diagnosis volume, resources, and patient communication between one-step and two-step. If using higher thresholds (ADIPS-like), build in safety nets (e.g., repeat testing as risk evolves).
- **Align targets and postpartum plans with standards:**
  Apply ADA/NICE glycaemic targets consistently and automate postpartum OGTT/HbA1c pathways (order sets, reminders), given the high risk of T2D progression.
- **Communicate the "why":**
  Explain how the screening strategy affects labelling and monitoring, so patients understand benefit–burden trade-offs and stay engaged in follow-up.
- **Equity & stewardship lens:**
  In resource-limited settings with rising prevalence, targeted early screening plus higher thresholds may help only if paired with strong surveillance systems to avoid missing those who worsen later.

COUNTRY-WISE PREVALENCE OF GESTATIONAL DIABETES MELLITUS

Country	Year/ Period	Prevalance	Screening method	Source
United States	2016–2022	6.0% (2016) → 8.1% (2022)	Two-step OGTT (CDC/NVSS)	CDC; ChildStats.gov
Canada	2020–2021	~10% nationally; Ontario 7.9% (8-yr avg)	Varied provincial criteria	Public Health Agency of Canada; Ontario Cohort Study
Australia	2021–2022	18–19% of births	Universal screening (IADPSG/OGTT)	Australian Institute of Health and Welfare (AIHW)
India	2024	3–35% (state-wise); ~13–15% common	DIPSI / IADPSG criteria	Systematic reviews, national meta-analyses
China	2024	~11.5–14.8%	IADPSG thresholds	National cohort; Chinese meta-analyses
United Kingdom	2019–2023	~3.5–10% (regionally variable)	NICE criteria	NHS Digital; National Pregnancy Audits
Scotland	2023–2024	~10% maternities with diabetes (GDM major share)	Universal screening	Public Health Scotland
Qatar	2010–2019 studies	20.7%	IADPSG	Regional meta-analysis
Saudi Arabia	2010–2019 studies	15.5%	IADPSG	Regional meta-analysis
UAE	2010–2019 studies	13.4%	IADPSG	Regional meta-analysis
Singapore	2020s	19–20%	Universal OGTT	Local cohort studies
Japan	Recent surveys	7–13%	National universal screening	National surveys and reviews

IMPACT OF RISING MATERNAL AGE, OBESITY, AND SHIFTING SCREENING STRATEGIES ON CLINICAL PRACTICE

Maternal Age

The steady rise in maternal age globally has direct implications for GDM risk. Women conceiving at ≥35 years have reduced β-cell reserve and age-related insulin resistance.

Clinical implications:

- **Earlier screening**: consider first-trimester OGTT or HbA1c in high-risk women (per ADIPS 2025).
- **Closer monitoring**: anticipate comorbidities such as hypertension and preeclampsia.
- **Individualised counselling**: provide realistic guidance on lifestyle changes and risk awareness.

Obesity

The growing prevalence of pre-pregnancy overweight/obesity is a major driver of GDM. Obesity amplifies insulin resistance and interacts with placental hormones to accelerate dysglycemia.

Clinical implications:

- **Higher case burden**: expect more referrals to dietitians and interprofessional care.
- **Weight-gain targets**: reinforce IOM/ADA guidelines for gestational weight management.
- **Greater pharmacologic need**: lifestyle measures alone often fail to achieve glycemic control in obese women.
- **Long-term follow-up**: obesity + GDM synergistically raise offspring risks for obesity and metabolic syndrome

Shifting Screening Strategies

How GDM is diagnosed depends heavily on the screening method in use:

- **One-step (75-g OGTT, IADPSG / ADA /WHO)**:
  identifies more women; resource-intensive; uncertain impact on LGA reduction.
- **Two-step (50-g screen + 100-g OGTT, ACOG/NICE)**:
  fewer diagnoses but may miss mild dysglycemia.
- **ADIPS 2025**:
  raised thresholds and introduced early HbA1c for high-risk women, aiming to reduce overdiagnosis and focus resources.

Clinical Reflection for APRNs

These converging trends, rising maternal age, obesity, and evolving screening criteria, are reshaping GDM practice. APRNs must:

- Critically appraise emerging evidence.
- Provide tailored, patient-centred education.
- Anticipate greater caseload complexity and resource demands.
- Balance **clinical vigilance, equity, and sustainability** in care delivery.

WORLDWIDE DIAGNOSTIC CRITERIA FOR GDM

ADA (2025) / ACOG (U.S.) — Screening & Diagnosis of GDM

Screening and Diagnosis of Gestational Diabetes Mellitus (GDM)

1) Who to Test & When

- **Universal screening**:
  all pregnant women at **24–28 weeks**.
- **Early testing**:
  high-risk women (e.g., prior GDM, obesity, strong family history, PCOS, glycosuria) or at the **first prenatal visit** to identify overt preexisting diabetes.

Criteria for overt diabetes at booking (not GDM):

- FPG ≥126 mg/dL (7.0 mmol/L), or
- A1C ≥6.5%, or
- Random PG ≥200 mg/dL (11.1 mmol/L) + classic symptoms → manage as pregestational diabetes.

2) Two Accepted U.S. Pathways

ACOG-Preferred Two-Step Strategy

1. **Step 1 – 50-g, 1-h Glucose Challenge Test (non-fasting)**
   - Positive screen if ≥140 mg/dL (7.8 mmol/L).
   - Some centres use 130–135 mg/dL for greater sensitivity.
   - Very high screens (≥180–200 mg/dL) may be treated locally as diagnostic, but ACOG still recommends confirmatory OGTT.
2. **Step 2 – 100-g, 3-h OGTT (fasting)**
   - Carpenter–Coustan thresholds (diagnosis = ≥2 abnormal values):
     - Fasting ≥95 mg/dL
     - 1-h ≥180 mg/dL
     - 2-h ≥155 mg/dL
     - 3-h ≥140 mg/dL

Notes & Pitfalls:

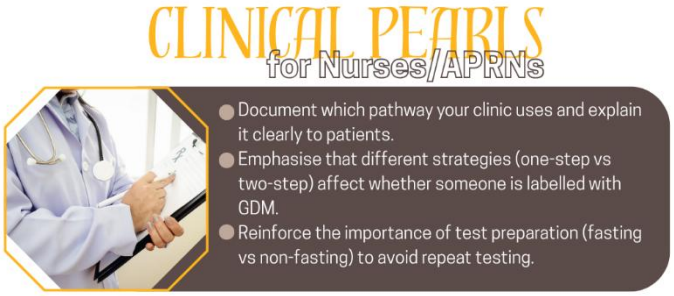
1. One abnormal value on OGTT = *not* diagnostic per ACOG → repeat or increase surveillance.
2. **Carpenter–Coustan vs NDDG**:
   CC uses lower fasting and 2-/3-h cutoffs → ~30–50% more GDM diagnoses than NDDG.

ADA-Accepted One-Step Strategy (IADPSG-Based)

1. **75-g, 2-h OGTT (fasting)**.
2. Diagnose GDM if ≥1 value abnormal:
   - Fasting ≥92 mg/dL (5.1 mmol/L)
   - 1-h ≥180 mg/dL (10.0 mmol/L)
   - 2-h ≥153 mg/dL (8.5 mmol/L)

Operational differences:

- **One-step**:
  shorter (2 h), but requires fasting.
- **Two-step**:
  begins with a non-fasting screen; if positive, requires return visit for 3-h OGTT.



3) What the Evidence Says About Outcomes & "Over-Diagnosis"

- **One-step vs two-step:**
  Meta-analyses of RCTs show that the **one-step approach diagnoses significantly more women with GDM** (and leads to more treatment), but **does not clearly reduce large-for-gestational-age (LGA) births** compared to the two-step.
- **Implication:**
  More women are labelled and treated, resource use rises, but neonatal benefit remains limited in trial data.

- **Practice position:**
  Two-step (ACOG) remains the **default U.S. approach** to balance detection and system burden; ADA accepts either pathway.

4) Practical APRN Notes (Workflow & Quality)

Pre-analytical prep for diagnostic OGTT:

- 8–10 hours fasting.
- Normal diet and activity for 3 days prior.
- No nicotine or caffeine on the morning of the test.
- Use **venous plasma glucose** (lab-based preferred).
- Document medications (e.g., steroids, β-agonists) that may alter results.

Choosing the GCT cutoff:

- **140 mg/dL**:
  standard, balances sensitivity/specificity.
- **130–135 mg/dL**:
  more sensitive, captures more cases but increases follow-up OGTT burden.
- Align choice with **local capacity and equity goals**.

Single abnormal value on 3-h OGTT:

- *Not diagnostic* per ACOG.
- Options: repeat OGTT later in pregnancy or increase monitoring (home glucose checks, dietary counselling).

Documentation best practices:

- Always record which pathway was used and which cutoffs applied.
- Patients may compare results across clinics with different protocols—clear communication avoids confusion.

Quality improvement (QI) targets:

- % completing diagnostic OGTT after positive GCT.
- Average time from abnormal screen to confirmed diagnosis.
- Outcomes tracking: rates of LGA and neonatal hypoglycemia when changing cutoffs or pathways.

5) Why This Matters for Service Planning

- **One-step (IADPSG)**:
  typically, **2–3× more GDM diagnoses** than two-step in U.S. cohorts.
  - Consequences:
    more MNT visits, SMBG supply needs, pharmacotherapy use.
  - RCTs show a **neutral impact on LGA**, so the extra case-finding may not translate into proportional benefit.
  - Recommendation:
    use judiciously in settings with **limited capacity**.
- **Two-step (ACOG)**:
  may miss milder dysglycemia, but **reduces clinic workload**.

- Important to pair with **robust postpartum testing** to capture those at long-term risk of type 2 diabetes.

WHO / NICE (UK) – Screening and Diagnosis of Gestational Diabetes Mellitus (GDM)

1) Who to Test & When

- **Early testing:**
  High-risk women (prior GDM, obesity, family history of diabetes, macrosomic infant, PCOS, glucosuria, or high-prevalence ethnicity) → test **as soon as possible after booking**.
- **Routine testing:**
  All other women → **24–28 weeks** gestation.

2) The Test

- **75-g, 2-h OGTT** performed fasting.
- Use **venous plasma glucose**; capillary/point-of-care testing **not recommended for diagnosis**.

3) Diagnostic Thresholds (NICE 2025, unchanged since 2015; reviewed April 2025)

- **Fasting plasma glucose (FPG):**
  ≥5.6 mmol/L (100 mg/dL)
- **2-h plasma glucose:**
  ≥7.8 mmol/L (140 mg/dL)
- **Diagnosis = either value abnormal**.

4) Comparison with Other Guidelines

- **Fasting threshold:**
  NICE = 100 mg/dL vs ADA/IADPSG = 92 mg/dL → NICE diagnoses fewer women with mild fasting elevations.
- **2-h threshold:**
  NICE = 140 mg/dL vs ADA = 153 mg/dL, ADIPS 2025 = up to 162 mg/dL → NICE captures more post-load dysglycemia.
- **Summary:**
  NICE emphasises **postprandial intolerance** while avoiding overdiagnosis of mild fasting abnormalities.

5) Evidence & Rationale

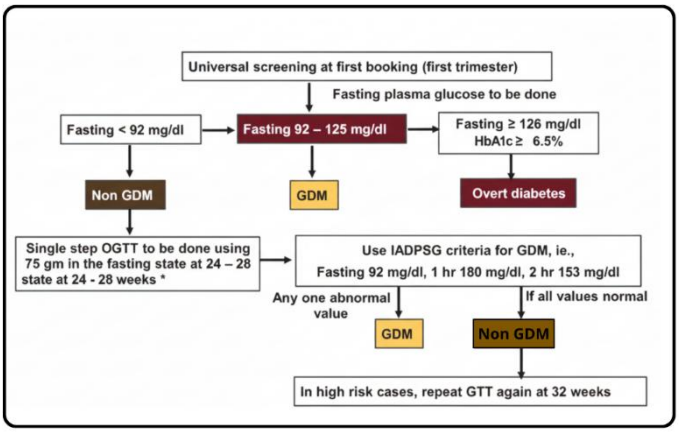
- NICE thresholds are based on **UK cost-effectiveness analyses**, balancing maternal–fetal outcomes with NHS resource use.
- Prevalence under NICE:
  ~3.5–10%, depending on region.
- Approach:
  - **Equity:**
    risk-factor–based early testing.
  - **Resource stewardship:**
    fewer overall diagnoses compared with ADA one-step.
- WHO guidance aligns with a 75-g OGTT globally, but notes **implementation challenges** in low- and middle-income countries.

6) Clinical Implications for APRNs

- **Thorough history-taking** is essential at booking to identify risk factors often overlooked.
- **Patient counselling:**
  explain why women may be diagnosed under one system but not another, especially in multicultural or mobile populations.
- **Care load:**
  NICE yields **fewer diagnoses** than ADA/IADPSG, which reduces dietitian/educator demand but ensures higher specificity.
- **Equity concern:**
  risk-factor–based early testing may miss GDM in women without obvious risks; APRNs should advocate for surveillance when borderline factors exist.

7) Bottom Line

- **NICE criteria (UK):**
  75-g OGTT, diagnose if **fasting ≥5.6 mmol/L OR 2-h ≥7.8 mmol/L**.
- Prioritise **cost-effectiveness** and **clinical significance** in a publicly funded health system.
- For APRNs:
  apply rigorous history-taking, communicate diagnostic differences clearly, and remain vigilant for maternal–fetal complications, even in those who test negative under NICE.



When a single-step fasting OGTT is not possible, do a 2-step procedure, ie.,. 5gm Glucose challenge test (GCT) in the non-fasting state followed by 3hr OGTT in the fasting-state using 100gm Carpenter and Coustan criteria in those who screened positive in the GCT

ADIPS 2025 (AUSTRALASIA): WHAT'S NEW—AND WHY IT MATTERS

1) Core Policy

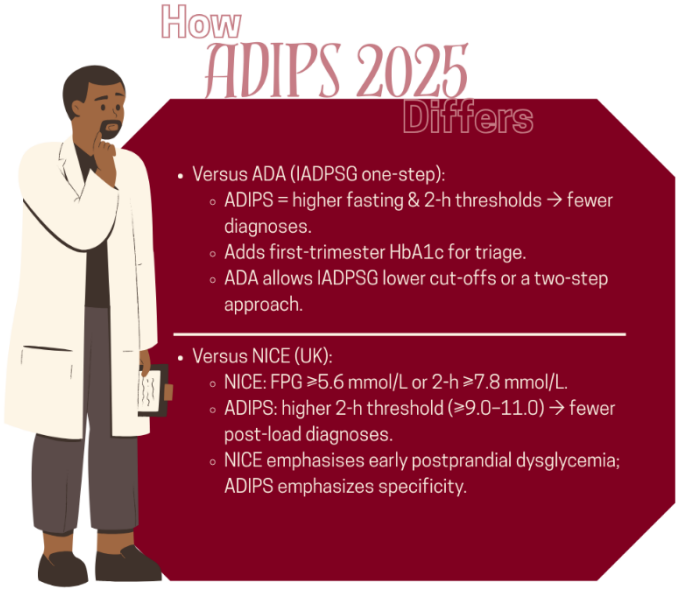
- **Who/when:**
  - **Universal 75-g OGTT at 24–28 weeks** for women without known diabetes.
  - **Targeted early screening** in 1st trimester using **HbA1c** for high-risk women (prior GDM, obesity, strong family history).
- **Test & cut-offs (raised vs prior IADPSG):** GDM diagnosed if **≥1 value** abnormal on 75-g OGTT:
  - Fasting: **5.3–6.9 mmol/L**
  - 1-hour: **≥10.6 mmol/L**
  - 2-hour: **≥9.0–11.0 mmol/L** *(Laboratory reporting updated July 2025 by RCPA/AACB).*

Rationale (the "why")

- **Higher thresholds** increase specificity, reducing low-benefit labeling.
- Response to evidence that **lower IADPSG cut-offs inflated case counts** without improving neonatal outcomes (e.g., LGA).
- **Early HbA1c** replaces blanket early OGTTs: improves patient acceptability and workflow, identifies overt diabetes or very high risk earlier.

Practical Implications for APRNs

- **Fewer diagnoses overall** → reduced load for dietitians, SMBG supplies, pharmacotherapy, with potential cost savings.
- **Documentation & communication:** always note **ADIPS 2025** as the diagnostic framework; explain to patients that thresholds differ across systems (ADA/NICE/WHO).
- **Workflow:**
  - **At booking:** order HbA1c for high-risk women.
    - If HbA1c ≥6.0–6.4% and no overt diabetes → arrange early OGTT (10–14 weeks if tolerated).
  - **At 24–28 weeks:** standard 75-g OGTT with new cut-offs.
- **Equity lens:** higher thresholds reduce labelling in low-risk women but require **vigilant follow-up** in high-risk groups to prevent missed disease.



Bottom Line for APRNs

ADIPS 2025 **raises OGTT thresholds** and introduces **early HbA1c triage** to curb overdiagnosis, streamline clinic load, and focus resources on women most likely to benefit—**without compromising safety**.

For APRNs, this means:

- Adjust **counselling scripts** ("diagnosis" may differ across systems).
- Prepare for **fewer women labelled with GDM** → smaller but higher-risk caseload.
- Support **system-level monitoring** (LGA, neonatal hypoglycemia, pharmacotherapy rates) through QI dashboards after adoption.

2) Diagnostic cut-offs and pathway

Frame work	Who to Test & When	Test Pathway	Diagnostic Thresholds
ADA (2025) / ACOG (U.S.)	Universal screening at 24–28 weeks; earlier testing for high-risk or to detect overt diabetes	Two options: Two-step (ACOG-preferred): 50-g 1-h GCT → if positive, 100-g 3-h OGTT (diagnose if ≥2 abnormal Carpenter–Coustan values). One-step (ADA-accepted): 75-g 2-h OGTT; diagnose if ≥1 abnormal value.	IADPSG/75-g (ADA one-step): FPG ≥92 mg/dL (5.1), 1-h ≥180 (10.0), 2-h ≥153 (8.5) (≥1 value). 100-g 3-h (two-step): F 95, 1-h 180, 2-h 155, 3-h 140 mg/dL (≥2 values).
WHO/NICE (UK)	Risk-factor–based or prior GDM → test early; otherwise, 24–28 weeks	75-g 2-h OGTT	Diagnose if FPG ≥5.6 mmol/L (100 mg/dL) OR 2-h ≥7.8 mmol/L (140 mg/dL).
ADIPS 2025 (Australasia)	Universal testing at 24–28 weeks; targeted early HbA1c for higher-risk women	75-g OGTT with raised thresholds (vs prior IADPSG) to improve specificity	FPG 5.3–6.9 mmol/L, 1-h ≥10.6 mmol/L, 2-h ≥9.0–11.0 mmol/L (diagnose if ≥1 value). Also introduces 1st-trimester HbA1c for risk-based early screening.

QUICK READ

ADA/ACOG permits either pathway; ACOG still favours a two-step approach. NICE uses a simpler two-value rule on a 75-g OGTT. ADIPS-2025 is the first major body to raise thresholds and formally embed early HbA1c for high-risk women.

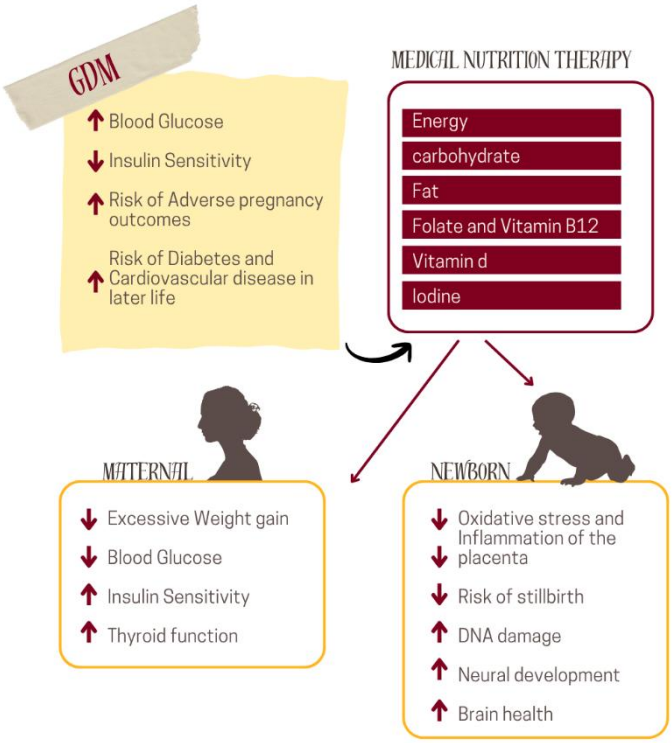
EVIDENCE-BASED NUTRITION AND LIFESTYLE MANAGEMENT IN GDM

Nutrition and lifestyle changes are the **first-line treatment** for gestational diabetes mellitus (GDM). Current guidelines, including the **ADA (2025)** and **NICE (2025)**, recommend starting medical nutrition therapy (MNT) and physical activity as soon as GDM is diagnosed. Research shows that about **70–85% of women** can keep their blood glucose within target ranges using diet and exercise alone, avoiding or delaying the need for insulin.

Evidence supports **balanced, low–glycaemic index diets, proper calorie distribution, and regular moderate exercise** to improve blood sugar control and reduce risks such as **macrosomia, neonatal hypoglycemia, and cesarean delivery**. Importantly, care must be **individualised**, plans should consider a woman's **cultural food preferences, financial situation, and lifestyle factors**.

For APRNs, the goal is not only to give advice but to **personalise care**, monitor progress, and work with dietitians and other team members. By applying evidence-based, patient-centred strategies, APRNs can improve outcomes for both **mother and baby** while supporting long-term healthy habits.

1) Core Principles of Medical Nutrition Therapy (MNT)



Medical Nutrition Therapy (MNT) is recognised as the **cornerstone of gestational diabetes mellitus (GDM) management**, endorsed by major guidelines including the **American Diabetes Association (ADA, 2025)**, **NICE (2025)**, and **ADIPS (2025)**. Evidence shows that **70–85% of women with GDM** achieve adequate glycemic control through individualised nutrition planning combined with moderate physical activity, often avoiding the need for pharmacologic therapy.

Primary Goals of MNT in GDM

1. **Maintain euglycemia within target ranges** (per ADA 2025):

- Fasting glucose: **<95 mg/dL (5.3 mmol/L)**
- 1-hour postprandial: **<140 mg/dL (7.8 mmol/L)**
- 2-hour postprandial: **<120 mg/dL (6.7 mmol/L)**

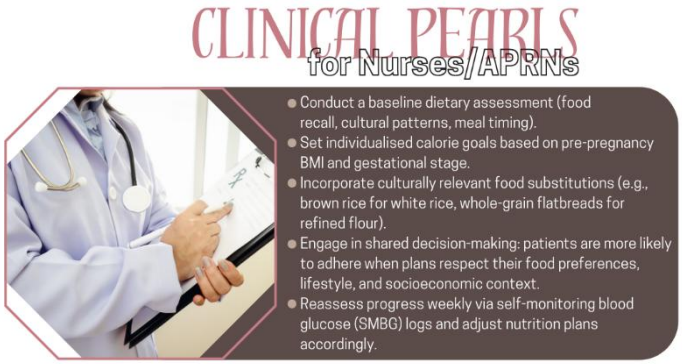
Rationale: Maintaining these targets reduces the risk of **macrosomia, neonatal hypoglycaemia, and shoulder dystocia**, as maternal hyperglycaemia drives excess fetal insulin secretion and growth.

2. **Ensure adequate maternal and fetal nutrition**:

- Caloric intake should support **fetal growth** and **maternal metabolic needs**, but remain within recommended gestational weight gain ranges.
- Restrictive diets are discouraged, as they may impair fetal growth or cause maternal ketosis.

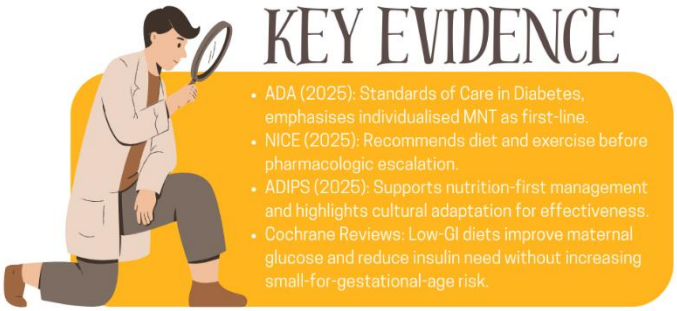
3. **Prevent ketosis and excessive weight gain**:

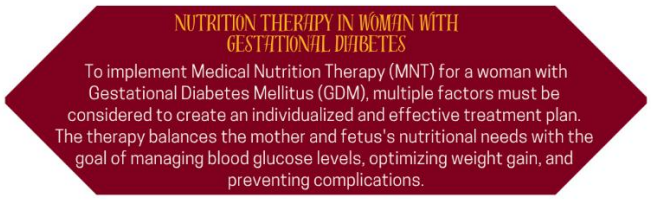
- Moderate caloric restriction (30–35 kcal/kg/day for normal weight; 24 kcal/kg/day for overweight/obese women) balances glycemic control with safety.
- APRNs should monitor for **urinary ketones** if caloric restriction is applied, especially in obese women.

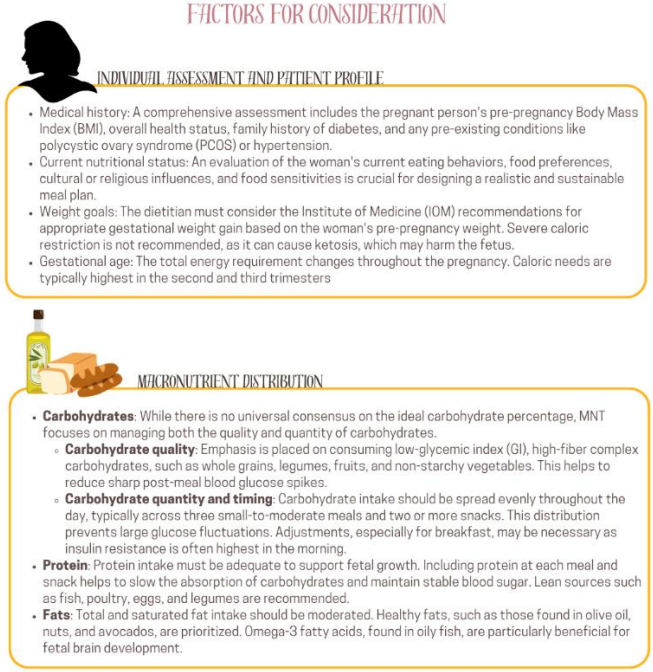


4. **Control postprandial hyperglycemia**:

- Structuring meals into **3 moderate meals and 2–3 snacks daily**, with emphasis on **low-glycaemic index (GI) and high-fibre carbohydrates**, reduces glucose excursions.
- Evidence shows that targeting postprandial glucose more tightly than fasting glucose **correlates better with neonatal outcomes**, particularly macrosomia.







2) Dietary Recommendations

Macronutrient Distribution

1. **Carbohydrates (40–45% of total calories):**
   - Prioritise **low–glycaemic index (GI)** and **high-fibre** foods (whole grains, legumes, non-starchy vegetables).
   - Avoid refined carbs (white rice, white bread, sweetened beverages) to minimise postprandial spikes.
2. **Protein (20% of total calories):**
   - Supports maternal tissue expansion and fetal growth.
   - Choose lean sources: poultry, fish (low-mercury), legumes, eggs, low-fat dairy.
3. **Fat (35–40% of total calories):**
   - Emphasise **monounsaturated (olive oil, avocado, nuts)** and **polyunsaturated fats (omega-3 rich fish, flaxseeds, walnuts)**.
   - Limit saturated fats and avoid trans fats.

Meal Frequency and Timing

- **3 moderate meals + 2–3 snacks daily →** smoothens glucose absorption and prevents postprandial hyperglycaemia.
- **Bedtime snack (protein + complex carbs)** may prevent overnight ketosis and fasting hyperglycemia.

<u>Caloric Adjustments (IOM/ADA, 2025)</u>

- **Normal weight (BMI 18.5–24.9):** 30–35 kcal/kg/day.
- **Overweight/obese (BMI ≥25):** ~24 kcal/kg/day, individualised to avoid excessive weight gain.
- **Clinical caution:** Avoid caloric restriction <1,800 kcal/day to prevent ketosis.

EVIDENCE Snapshots

- Low-GI diets significantly reduce the need for insulin therapy and lower the risk of infants >90th percentile birthweight, without raising rates of small-for-gestational -age (SGA).
- Structured meal planning improves glycemic variability and enhances adherence compared to unstructured advice.
- High-fibre diets improve postprandial glucose and reduce constipation, a common pregnancy complaint.

PRACTICAL APRN DIETARY CHART (2000 KCAL/DAY, LOW-GI, CULTURALLY ADAPTABLE)

Meal	Food choices	Approx. Calories (kcal)	Notes (APRN clinical use)
Breakfast	2 whole grain rotis (200 kcal) OR 1 slice whole grain toast (80 kcal), 1 boiled egg (70 kcal) OR low-fat yoghurt (100 kcal), ½ cup vegetables (25 kcal)	~350 kcal	Provides complex carbs, protein, fibre → stabilises morning glucose
Mid-morning Snack	1 apple (95 kcal) OR 1 pear (100 kcal), handful of nuts (almonds/walnuts, 150 kcal)	~200–220 kcal	Combines fruit fibre + healthy fats/protein; prevents glucose dips
Lunch	1 cup cooked brown rice (215 kcal) OR quinoa (220 kcal), grilled chicken breast (150 kcal) OR lentils (170 kcal), salad with olive oil (100 kcal)	~500–550 kcal	Balanced plate: carbs, lean protein, MUFAs/PUFAs, micronutrients
Afternoon Snack	Carrot sticks (50 kcal) + hummus (70 kcal) OR low-fat milk (100 kcal)	~120–150 kcal	Low-GI snack to prevent late-afternoon spikes; good Ca/protein source
Dinner	Baked fish (180 kcal) OR tofu (150 kcal), 2 multigrain chapatis (200 kcal), sautéed vegetables (100 kcal)	~450–500 kcal	Lean protein + whole grain carbs + vegetables; supports satiety & glucose control
Bedtime Snack	Whole grain cracker (70 kcal) + peanut butter (100 kcal) OR glass of low-fat milk (100 kcal)	~170–200 kcal	Prevents nocturnal hypoglycaemia/ketosis; supports overnight glucose balance

CLINICAL PEARLS for Nurses/APRNs

- **Individualise:** Adapt to cultural staples (e.g., rice, tortillas, chapatis) using portion control and low-GI alternatives.
- **Socioeconomic sensitivity:** Recommend affordable, accessible high-fibre options (beans, seasonal vegetables).
- **Patient empowerment:** Use visual food models and the plate method for women with low health literacy.
- **Monitor and adapt:** Review food diaries with SMBG logs; adjust plan if glucose targets are unmet within 1–2 weeks.

MANAGING GESTATIONAL DIABETES

DIET AND GLUCOSE CONTROL

- Carbohydrate Management: Since carbohydrates are broken down into glucose, the goal is to monitor portion sizes and choose whole grain or complex options (e.g., brown rice, whole grain bread) which are broken down slower.
- Meal Structure: It is recommended to include one portion of carbohydrate at every main meal but balance the plate with plenty of vegetables and a source of protein

PLATE COMPOSITION AND PORTION CONTROL

- The "Plate Method":
  Half the plate should be vegetables or salad.
  One quarter of the plate should be carbohydrates.
  One quarter of the plate should be protein.
- Carbohydrate Portion Example: A single portion size is equivalent to two slices of whole grain bread, or half to one cup of cooked rice or pasta.
- Snacks: Have low-carbohydrate snacks between meals to prevent overeating at main meals. Good examples include low-fat yogurt or a handful of unsalted nuts

FOOD GROUPS AND FLUIDS

- Protein: Essential for tissues and muscles; aim for two to three portions daily (80 grams of meat, 2 eggs) to bulk up a meal without increasing blood sugar levels.
- Fruit and Vegetables: Aim for more vegetables than fruit . Limit fruit because it contains natural sugar and space it out throughout the day.
- Fluids to Avoid/Limit: Limit fruit juice and smoothies to a maximum of 150ml per day due to high sugar content . Avoid energy drinks and regular sugary drinks . Water and sugar-free options are preferred.

OTHER RECOMMENDATIONS

- Exercise: Improves the body's sensitivity to insulin and helps control blood glucose levels.
- Supplements: Pregnant women with diabetes should take 500 micrograms of folic acid until 12 weeks and 10 micrograms of Vitamin D daily throughout pregnancy.

3) Physical Activity – Safe, Effective, Individualised

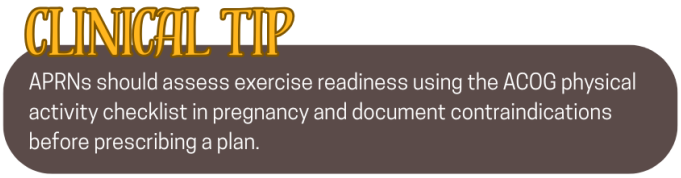
Physical activity is a **core non-pharmacologic therapy** for gestational diabetes mellitus (GDM), supported by the **ADA (2025)**, **NICE (2025)**, and **ADIPS (2025)**. It improves maternal insulin sensitivity, reduces postprandial hyperglycaemia, and may decrease the need for pharmacologic treatment.

Recommended Regimen

- **Moderate-intensity aerobic exercise:**
  - Aim for **≥150 minutes per week** (e.g., 30 minutes/day, 5 days per week).
  - Safe modalities include **walking, stationary cycling, and swimming**.
  - Use the **"talk test"**: intensity is adequate if the woman can talk but not sing during activity.
- **Light post-meal activity:**
  - **10–15 minutes of gentle walking after meals** significantly lowers postprandial glucose spikes by enhancing glucose uptake in skeletal muscle.
  - This is particularly valuable for women struggling with elevated 1-hour postprandial readings.
- **Strength/Resistance training:**
  - Light resistance exercises (elastic bands, body weight) 2–3 times per week can improve muscular insulin sensitivity without added risk when tailored to pregnancy.

Safety and Contraindications

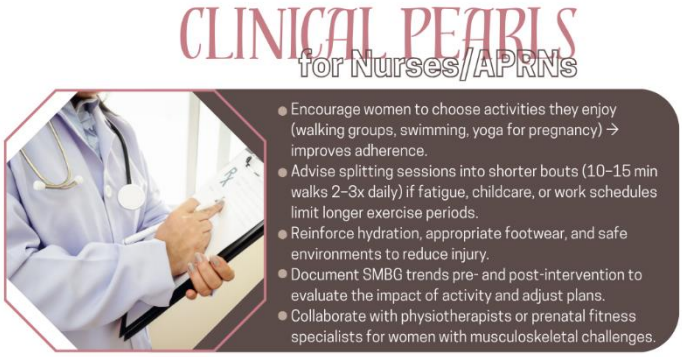
- **Absolute contraindications:**
  - Threatened preterm labour
  - Placenta previa after 26 weeks
  - Ruptured membranes
  - Severe anaemia
  - Uncontrolled maternal hypertension or cardiac disease
- **Relative contraindications:**
  - Poorly controlled type 1 diabetes, severe obesity, orthopaedic limitations.



Evidence Base

- **Meta-analyses** confirm that **structured exercise programs** in women with GDM:
  - **Lower fasting and postprandial glucose levels**
  - **Reduce insulin requirements** by up to 30% compared with usual care
  - **Improve maternal weight gain trajectories**
  - Are associated with a **lower risk of macrosomia** in some cohorts without increasing risk of preterm birth or fetal growth restriction.

Example: Ming et al. (2016, *BMC Pregnancy & Childbirth*) demonstrated that exercise interventions were linked to a **significant reduction in the need for insulin** and improved glucose tolerance across diverse populations.



4) Cultural, Socioeconomic, and Patient-Centred Adaptation in GDM Care

Cultural Food Patterns

APRNs should integrate staple foods into meal plans rather than excluding them, to promote acceptance and long-term adherence.

- **South Asian diets:**
  rice-based meals → encourage brown rice, millet, or quinoa; balance portions with legumes and vegetables.
- **Hispanic diets:**
  tortillas and beans → recommend corn tortillas instead of refined flour; combine with high-fibre beans and fresh vegetables.
- **Middle Eastern diets:**
  pita and couscous → switch to whole-wheat pita; choose bulgur or quinoa over semolina couscous.

Clinical rationale: Excluding culturally meaningful foods often leads to poor adherence and relapse to old habits. Portion control and substitutions allow glycemic control while respecting cultural identity.

Socioeconomic Barriers

Cost and food insecurity may limit access to recommended foods.

- Promote affordable staples:
  beans, lentils, oats, seasonal/local vegetables.
- Recommend frozen or canned vegetables (no added sugar/salt) as cost-effective options.
- Connect patients to community resources:
  WIC (U.S.), local food banks, nutrition assistance programs.

Clinical impact: Low-cost, nutrient-dense foods can replace expensive "diabetic diet" products, reduce inequity and improving long-term adherence.

Health Literacy and Communication

Limited literacy or numeracy can make carbohydrate counting and self-monitoring difficult.

- Use **visual tools**:
  plate models, portion visuals, food cards.
- Apply **teach-back**:
  ask patients to explain instructions in their own words.

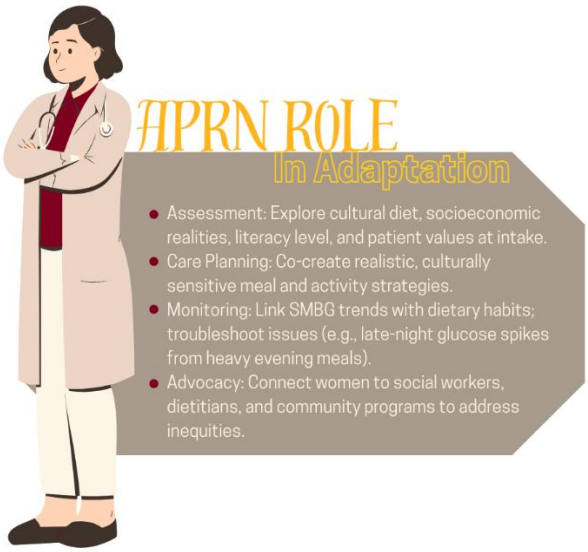
- Integrate **mobile health apps** or glucose-tracking tools with visual interfaces for tech-comfortable patients.

Evidence: Visual-based education significantly improves dietary adherence and SMBG accuracy in women with low literacy.

Patient Autonomy and Shared Decision-Making

Engaging women in collaborative care fosters adherence and reduces stress.

- Respect **family roles** (e.g., shared meals in collectivist households).
- Adapt plans for **occupational schedules** (night-shift workers may need meal/snack planning aligned with circadian rhythms).
- Encourage **patient-led goals**: start with achievable steps (e.g., replace sugary drinks first, then adjust carb portions).
- Involve **partners/family** in counselling to strengthen adherence and reduce stigma.



CLINICAL PEARL

Shared decision-making builds ownership and sustainability of lifestyle changes.

Culturally and socioeconomically tailored, patient-centred strategies are essential for effective GDM management. APRNs are uniquely positioned to integrate these adaptations into care, improving adherence, equity, and maternal–infant outcomes.

PHARMACOLOGIC THERAPY IN GDM

1) When to Initiate Pharmacologic Therapy in GDM

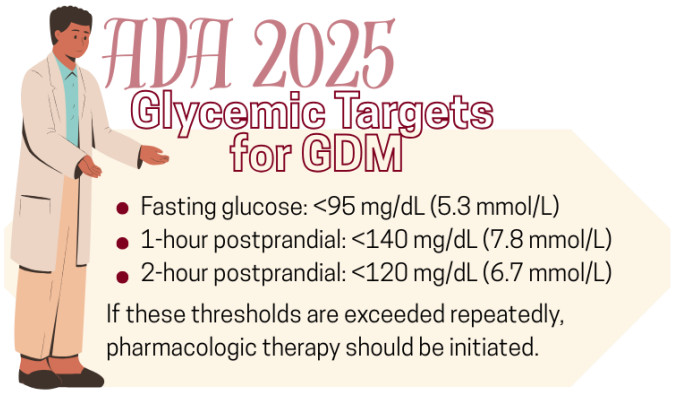
Lifestyle First Approach

All major guidelines, **ADA (2025)**, **NICE (2025)**, and **ADIPS (2025)**, recommend **medical nutrition therapy (MNT)** and **structured physical activity** as the **first-line intervention** for women with gestational diabetes mellitus (GDM). Evidence indicates that **70–85% of women** can achieve glycemic control through lifestyle measures alone, minimising the need for pharmacologic therapy.

When to Start Pharmacologic Treatment

Pharmacotherapy is indicated when **glycemic targets are not consistently achieved** despite 1–2 weeks of optimised lifestyle therapy, or **at diagnosis** if glucose values are markedly

elevated (e.g., fasting plasma glucose ≥105 mg/dL or 2-hour OGTT ≥200 mg/dL).



Rationale for Early Escalation

- Persistent maternal hyperglycemia is strongly associated with **macrosomia, neonatal hypoglycemia, shoulder dystocia, and cesarean birth**.
- Postprandial hyperglycemia, in particular, is a key driver of **excess fetal insulin secretion and growth**.
- Delaying pharmacologic therapy when targets are clearly unmet increases the risk of **adverse maternal-fetal outcomes**, even if lifestyle adherence is high.

Guideline Nuances

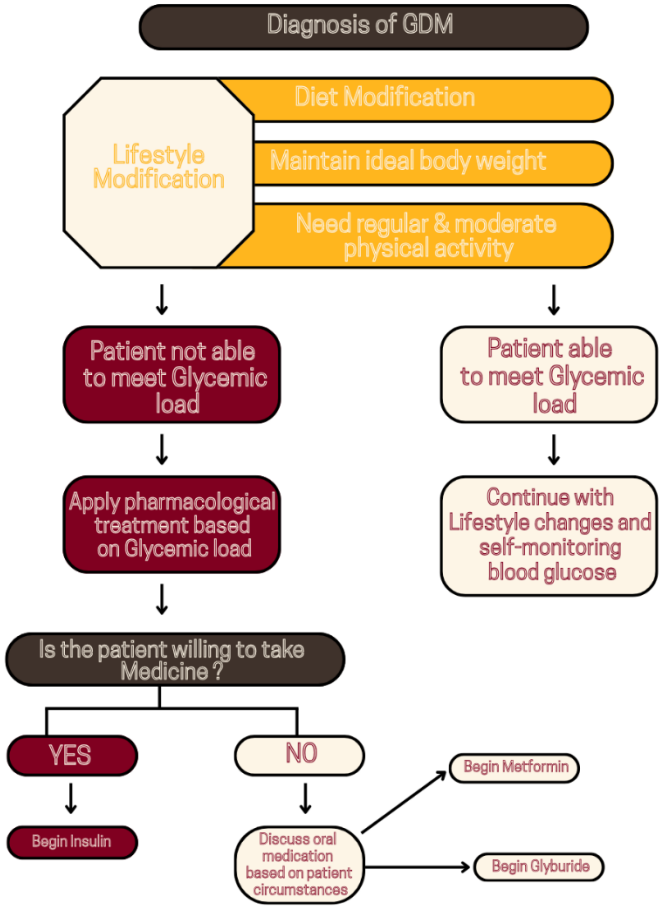
- **ADA (2025):**
  Insulin is first-line pharmacotherapy, though metformin may be considered if the patient declines insulin or has barriers to use, provided risks are discussed.
- **NICE (2025):**
  Metformin is recommended as the first-line pharmacologic option if lifestyle fails; insulin is added if control remains inadequate.
- **ADIPS (2025):**
  Insulin is preferred; metformin may be used if insulin is not acceptable or feasible. HbA1c in the first trimester helps identify women who may need earlier pharmacologic escalation.

APRN Clinical Pearls

- **Evaluate SMBG patterns holistically:** Look at fasting and both postprandial values; recurrent elevations signal the need for escalation.
- **Do not delay pharmacotherapy** in women with clearly high glucose levels at diagnosis, especially fasting >105 mg/dL, since lifestyle alone is unlikely to suffice.
- **Engage in shared decision-making** when initiating pharmacotherapy, exploring patient fears, cultural beliefs, and treatment preferences (insulin vs metformin).
- **Document escalation criteria clearly** in the care plan to support continuity across the care team.

Pharmacologic therapy should be initiated **promptly** if lifestyle measures fail to meet ADA glycemic targets within 1–2 weeks, or immediately in cases of marked hyperglycemia at diagnosis. APRNs are pivotal in **recognising thresholds, preventing treatment delays,**

and guiding patients through individualised therapy choices that balance evidence-based guidelines with patient values.



2) Insulin – The Reference Standard

Why Insulin is the Gold Standard

- **Does not cross the placenta** → no direct fetal exposure, making it the **safest pharmacologic option for the fetus**.
- **Highly effective:**
  Rapidly normalises both fasting and postprandial glucose when tailored appropriately.
- **Flexible dosing:**
  Can be **titrated precisely** to address isolated fasting elevations, postprandial excursions, or mixed patterns.
- **Long track record:**
  Decades of use in pregnancy with strong safety data.

Types of Insulin Commonly Used in GDM

- **Basal Insulin (for fasting control):**
  - **NPH** – widely used; intermediate-acting.
  - **Insulin Detemir** – long-acting; FDA-approved for pregnancy with reassuring safety data.
- **Bolus Insulin (for postprandial control):**
  - **Regular human insulin** – slower onset; less ideal for rapid post-meal spikes.
  - **Rapid-acting analogs (Aspart, Lispro)** – preferred in many cases as they better mimic physiologic insulin response and reduce post-meal excursions.

Dosing Strategies in APRN Practice

- **Starting doses:**
  Often **0.7–1.0 units/kg/day**, individualized based on gestational age, maternal weight, and glycaemic profile.
- **Titration:**
  - Adjust basal for fasting hyperglycaemia.
  - Adjust bolus for postprandial excursions.
- **Split-mixed regimens:**

(e.g., NPH + rapid-acting before meals) are common in GDM to balance fasting and prandial control.

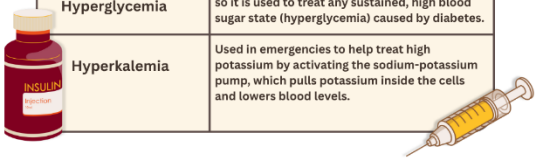
- **Monitoring:**

  Frequent **self-monitoring of blood glucose (SMBG)** guides dose adjustments.

ROLE OF INSULIN

Insulin acts as a "key" that binds to receptors, opening the "garage doors" of muscle, fat, and liver cells to allow glucose to enter and be converted into energy (ATP).

CONDITION	ROLE OF INSULIN
Type 1 Diabetes	Life-sustaining therapy, as the body produces no insulin.
Type 2 Diabetes	Used when diet, exercise, and oral medications are insufficient to manage insulin resistance.
Gestational Diabetes	Prescribed to protect both mother and baby from complications if the pancreas cannot keep up with the increased resistance.
DKA (Diabetic Ketoacidosis)	Given in emergency protocols to reverse the sugar overload and stop ketone production.
HHS (Hyperosmolar Hyperglycemic State)	Given in emergency protocols because it reverses the sugar overload and restores fluid balance.
Hyperglycemia	Insulin's primary job is to lower blood glucose, so it is used to treat any sustained, high blood sugar state (hyperglycemia) caused by diabetes.
Hyperkalemia	Used in emergencies to help treat high potassium by activating the sodium-potassium pump, which pulls potassium inside the cells and lowers blood levels.



Agents recommended for USE IN GDM

Drug class	Drug	Dosing recommendations in GDM	Consideration during Pregnancy	Drug
Insulin-typically considered first-line agents in GDM				
Rapid-acting Insulin	Insulin lispro; Insulin aspart	Insulin should be titrated to glycaemic goals and dosing individualized. For most, begin with a basal-bolusregimen; can consider initiating at 0.7 units/kg/day throughout the 0rst trimester, increasing to 0.8 units/kg/day around weeks 14-18, increasing to 0.9 units/kg/ day during weeks 26-27, and increasing to 1 unit/kg/ day around weeks 36-37 until delivery If NPH insulin is chosen as the basal insulin, two-thirds of the TDD can be given prebreakfast (in a 70:30 basal to bolus ratio) and one-third of the TDD can be given pre-evening meal (in a 50:50 basal to bolus ratio) If using long-acting basal insulin, 50% of the TDD can be given as basal insulin and 50% of the TDD can be split as premeal boluses Selected patients with either elevated fasting blood glucose or elevated postprandial blood glucose, but not both, may be candidates for only basal insulin or only prandial insulin, respectively	Use of lispro and aspart are recommended by several guidelines; lispro has been studied retrospectively in large cohorts where aspart has prospective data available for a smaller group of patients	Discontinue during labour and delivery Is not excreted in breastmilk; may restart postpartum if persistent hyperglycaemia is present
Short- acting Insulin	Regular Insulin		Has longstanding safety data; consider risk of hypoglycaemia	During labour and delivery,used in insulin IV infusion protocols to optimize glycaemic control at moment of delivery; discontinue immediately postpartum Is not excreted in breastmilk; may restart postpartum if persistent hyperglycaemia is present
Intermediate-acting Insulin	NPH Insulin		Has longstanding safety data8; consider risk of hypoglycaemia	Discontinue during labour and delivery is not excreted in breastmilk; may restart postpartum if persistent hyperglycaemia is present
Long-acting Insulin	Insulin detemir, Insulin glargine		Insulin detemir has greater evidence for use in GDM and supported by multiple international guidelines5 –7,13, 26; use of insulin glargine is more controversial due to less evidence but is often used and may be safe5 –7,13 , 26	Discontinue during labour and delivery is not excreted in breastmilk; may restart postpartum if persistent hyperglycaemia is present

Drug class	Drug	Dosing recommendations in GDM	Consideration during Pregnancy	Drug
Oral agents – typically considered second-line or alternative 0rst-line agents for patients who are not good candidates for insulin therapy				
Biguanide	Metformin	Initiate at 500 mg once or twice a day with food; increase every 1–2 weeks to meet glycaemic goals, up to a maximum of 2,500 mg	Long-term safety data, particularly effects on offspring after exposure are limited, show some risk or are controversial	Associated with increased risk of adverse fetal outcomes compared to insulin and metformin; additionally, long-term safety data are lacking
Sulfonylurea	Glyburide	Initiate at 2.5 mg once or twice a day with food; increase gradually to meet glycaemic goals, up to a maximum of 10 mg twice daily	Associated with increased risk of adverse fetal outcomes compared to insulin and metformin; additionally, long-term safety data are lacking	Discontinue during labour and delivery Drug is excreted into breastmilk in small amounts; likely safe to use postpartum in lactating mothers

Challenges and Barriers

- **Patient burden:**

  Requires injections (often multiple daily), which may cause fear, anxiety, or reduced adherence.

- **Hypoglycemia risk:**

  Maternal hypoglycemia more common than with oral agents; patient education and SMBG are critical.

- **Weight gain:**

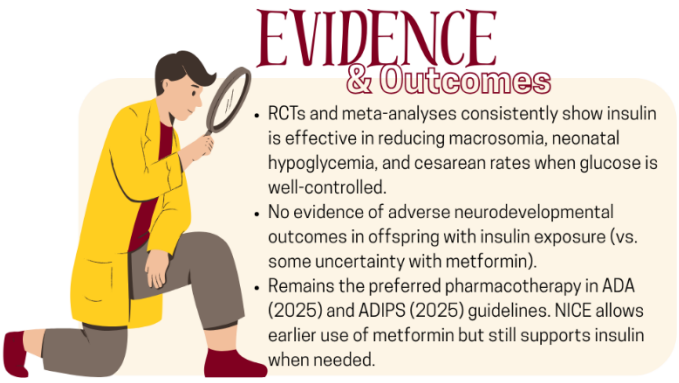
  Insulin may promote greater maternal weight gain, which itself can increase risk of cesarean and macrosomia.

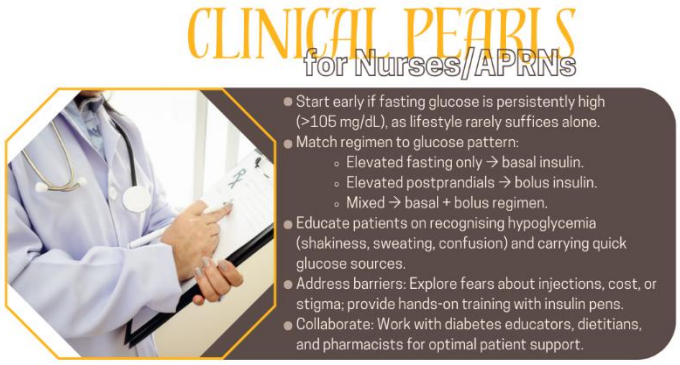
- **Cost/complexity:**

  Higher financial and logistical burden (supplies, refrigeration) compared with oral agents such as metformin.

- **Health literacy:**

  Some women require extra education for injection technique, storage, and dose titration.



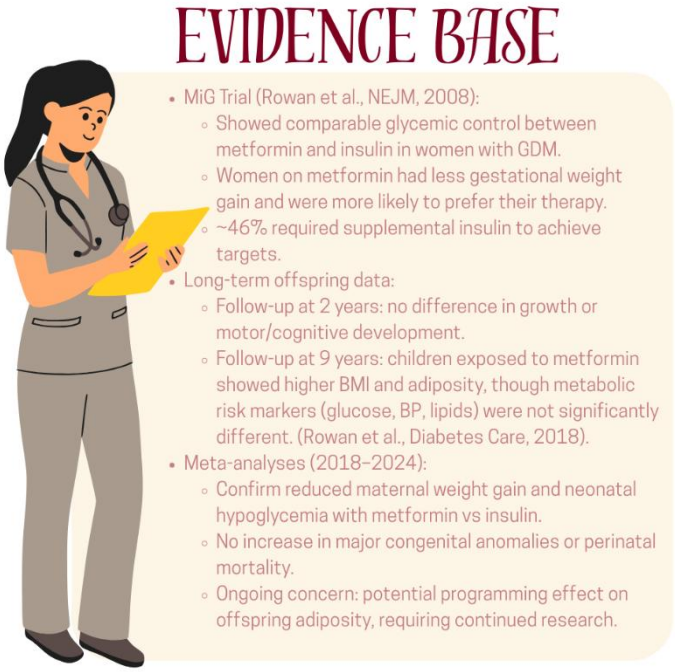


Insulin remains the **reference standard pharmacologic therapy for GDM** because of its **efficacy and fetal safety profile**. Despite challenges with injections, cost, and maternal hypoglycaemia, it provides the **most reliable glycemic control**. APRNs play a key role in **initiating, titrating, and supporting insulin therapy** through patient education, barrier reduction, and close monitoring.

3) Metformin – The Most Studied Oral Agent

Why Metformin is Considered

- **Convenient and oral**:
  Avoids injections, increasing patient acceptance and adherence.
- **Well-tolerated:**
  Generally mild GI side effects (nausea, diarrhea), often improve with dose titration.
- **Maternal benefits:**
  - Associated with **less gestational weight gain** compared with insulin.
  - Lower risk of **maternal hypoglycemia** than insulin.
- **Target population:**
  Often attractive in women with **obesity, insulin resistance, or needle anxiety**, or where cost/access to insulin is problematic



Concerns & Limitations

- **Placental transfer:**
  Metformin readily crosses the placenta, leading to **fetal concentrations similar to maternal levels**.
- **Incomplete efficacy:**

20–40% of women require **supplemental insulin** due to inadequate control, especially with higher fasting glucose.

- **Long-term uncertainty:**
  Possible association with increased childhood BMI/adiposity; unclear whether this translates into higher lifetime metabolic risk.
- **GI intolerance:**
  May limit adherence in some women.

Guideline Perspectives

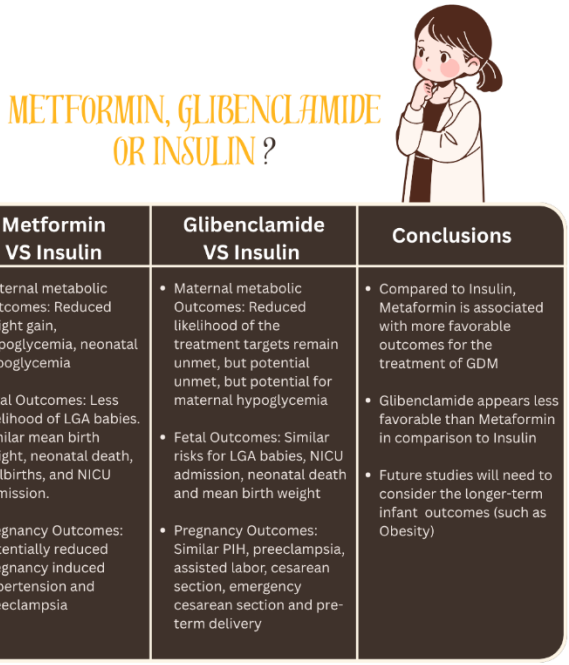
- **ADA (2025):**
  - **Insulin remains first-line**.
  - Metformin may be considered if a woman declines insulin or has barriers (cost, access, acceptability), provided informed consent is obtained regarding long-term safety uncertainties.
- **NICE (UK, 2025):**
  - Recommends **metformin as the first-line pharmacologic agent** if lifestyle therapy fails.
  - Add insulin if glycemic targets are not met.
- **ADIPS (2025, Australasia):**
  - Aligns more closely with ADA: insulin is preferred.
  - Metformin is reasonable for women who decline insulin or where access/feasibility is limited.
  - Stresses **patient counseling** about long-term offspring data and the likelihood of needing supplemental insulin.

APRN Clinical Pearls

- **Shared decision-making:**
  Present benefits (ease, weight, lower hypoglycemia) vs uncertainties (placental transfer, long-term offspring BMI).
- **Patient selection:**
  Best suited for women with **mild–moderate hyperglycemia**, BMI >30, or strong reluctance to use insulin.
- **Counsel clearly:**
  Up to **40% may still need insulin**, metformin is not always sufficient alone.
- **Titrate slowly:**
  Start 500 mg daily; increase to 2,000–2,500 mg/day as tolerated. Administer with meals to reduce GI side effects.
- **Document informed consent:**
  Ensure patients understand metformin crosses the placenta and long-term data are not fully conclusive.

Metformin is the most widely studied oral agent for GDM and offers clear maternal advantages, **oral dosing, less weight gain, and reduced neonatal hypoglycemia**, but it **crosses the placenta**, and **long-term offspring effects remain uncertain**. While **insulin remains the gold standard**, **NICE permits metformin first-line**, and **ADA/ADIPS allow it with informed choice**. APRNs play a central role in

weighing benefits against uncertainties, engaging women in shared decision-making, and monitoring for therapy escalation.



Metformin VS Insulin	Glibenclamide VS Insulin	Conclusions
• Maternal metabolic Outcomes: Reduced weight gain, Hypoglycemia, neonatal hypoglycemia • Fetal Outcomes: Less likelihood of LGA babies. Similar mean birth weight, neonatal death, stillbirths, and NICU admission. • Pregnancy Outcomes: Potentially reduced pregnancy induced hypertension and preeclampsia	• Maternal metabolic Outcomes: Reduced likelihood of the treatment targets remain unmet, but potential unmet, but potential for maternal hypoglycemia • Fetal Outcomes: Similar risks for LGA babies, NICU admission, neonatal death and mean birth weight • Pregnancy Outcomes: Similar PIH, preeclampsia, assisted labor, cesarean section, emergency cesarean section and pre-term delivery	• Compared to Insulin, Metaformin is associated with more favorable outcomes for the treatment of GDM • Glibenclamide appears less favorable than Metaformin in comparison to Insulin • Future studies will need to consider the longer-term infant outcomes (such as Obesity)

Pharmacologic Options in GDM: Insulin vs Metformin

DIMENSIONS	INSULIN	METFORMIN
Why/When	First-line when lifestyle fails or if hyperglycemia is clearly high at diagnosis; preferred for fasting hyperglycemia	Consider if patient declines insulin, has access/cost barriers, or prefers oral therapy; mild–moderate hyperglycemia
Placental transfer	No (does not cross placenta)	Yes (fetal levels ≈ maternal)
Efficacy	Highly effective; precise titration for fasting vs postprandial control	Comparable glycemic control to insulin in many RCTs; 20–40% will still need supplemental insulin
Maternal outcomes	Strong control; ↑ risk of hypoglycemia; more gestational weight gain	↓ gestational weight gain; ↓ maternal hypoglycemia; GI side effects common early (nausea/diarrhea)
Neonatal outcomes (short-term)	Good outcomes when targets are achieved (↓ macrosomia, ↓ neonatal hypoglycemia)	Similar perinatal outcomes in trials; often ↓ neonatal hypoglycemia vs insulin
Offspring long-term	No known adverse effects attributable to insulin exposure	Some cohorts show ↑ BMI/adiposity in mid-childhood; metabolic risk signals are mixed/uncertain
Dosing (typical)	Start ~0.7–1.0 U/kg/day, individualize; basal (NPH/Detemir) ± bolus (Aspart/Lispro)	Start 500 mg daily with meals; titrate to 2,000–2,500 mg/day as tolerated
Monitoring needs	SMBG multiple times daily; dose titration; hypoglycemia education	SMBG; assess GI tolerance; monitor for need to add insulin
Practical burdens	Injections, supplies, cost, training, refrigeration	Oral, inexpensive (many settings), easier adherence
Contra/precautions	Hypoglycemia risk, injection anxiety, cost/logistics	GI intolerance; placental transfer; caution in renal/hepatic impairment (use local thresholds)
Guideline stance	ADA 2025/ADIPS 2025: preferred first-line; NICE 2025: use when metformin is inadequate/contraindicated	NICE 2025: first pharmacologic after lifestyle; ADA 2025/ADIPS 2025: acceptable with informed consent; add insulin if targets unmet
Best fit	Marked fasting elevations; need for tight/prandial tuning; when fetal exposure is a key concern	Strong preference for oral therapy; obesity/insulin resistance; access/cost barriers; needle aversion
Counseling points	Most effective and safest for the baby; teach hypoglycemia management; set expectations about injections and weight gain	Easier to take; may still need insulin; crosses placenta; discuss uncertain long-term offspring effects; start low, go slow for GI

4) Shared Decision-Making (SDM) in APRN Practice

Shared decision-making is central to pharmacologic management of GDM, ensuring that treatment aligns with **clinical evidence, guideline recommendations, and the woman's personal values**. As frontline providers, APRNs play a key role in facilitating transparent discussions, addressing fears, and tailoring therapy.

Step 1: Present Both Options Clearly and Transparently

- **Insulin:**
  - Most effective therapy, **gold standard** across guidelines.
  - Does **not cross the placenta**, ensuring fetal safety.
  - Requires **injections, frequent SMBG, and closer monitoring**.
  - Associated with **maternal weight gain** and risk of hypoglycemia.
- **Metformin:**
  - Oral agent, convenient, and often **better accepted by patients**.
  - Leads to **less maternal weight gain** and fewer hypoglycemic events.
  - Crosses the placenta; **long-term offspring safety remains under study** (e.g., ↑ BMI/adiposity noted in some cohorts).

- 20–40% of women will still require **supplemental insulin**.

APRN role: Present the options **without bias**, using simple language, decision aids, or visual comparisons to enhance understanding.

Step 2: Explore Patient Values and Barriers

- **Concerns about insulin:**
  Fear of injections, needle phobia, cultural stigma, storage challenges (need for refrigeration), or cost of supplies.
- **Concerns about metformin:**
  Safety for the child, GI side effects, and the possibility of still needing insulin.
- **Other factors:**
  - Financial barriers (insurance coverage, affordability).
  - Lifestyle/work factors (night shifts, travel, child care responsibilities).
  - Cultural beliefs (e.g., perceptions about injections or medications during pregnancy).

APRN role: Ask open-ended questions ("What worries you most about starting medicine for your diabetes?") and **listen actively** to identify hidden barriers.

Step 3: Align With Guidelines and Patient Context

- **United States (ADA 2025):**
  Insulin is preferred, but metformin may be offered with **informed consent**.
- **United Kingdom (NICE 2025):**
  Metformin recommended first-line if lifestyle fails; add insulin if inadequate.
- **Australasia (ADIPS 2025):**
  Insulin preferred; metformin acceptable for women declining insulin or with access barriers.

APRN role: Integrate local standards with patient preference → e.g., in the U.S., insulin is the default, but if a patient is needle-averse and well-informed about metformin risks/benefits, initiating metformin may be appropriate.

- **Documentation:** Record the counselling provided, the patient's values/preferences, the decision made, and the agreed-upon follow-up plan.

Step 4: Monitor, Reassess, and Adjust Therapy

- If **metformin is chosen** but SMBG logs show persistent elevations, add insulin promptly to avoid prolonged hyperglycemia.
- If **insulin chosen**, titrate based on SMBG trends and maternal tolerance.
- **Follow-up:** Weekly review of SMBG data in early initiation; adjust regimen as pregnancy advances (insulin resistance increases in 2nd/3rd trimester).
- Revisit patient preferences periodically, circumstances may change.

APRN CLINICAL PEARLS for SDM

- Use decision aids (visual charts comparing insulin vs metformin) to simplify discussions.
- Emphasize that goals are maternal safety + healthy infant outcomes, not "one right drug."
- Normalize therapy adjustments: "Starting with metformin doesn't mean you failed if we need to add insulin later."
- Encourage partner/family inclusion in discussions if culturally appropriate, as this improves adherence.
- Always frame pharmacotherapy as part of a comprehensive care plan (nutrition, activity, monitoring, psychosocial support).

Shared decision-making ensures that women with GDM receive treatment that is both **evidence-based and personally acceptable**. APRNs must provide balanced information, uncover patient barriers, align choices with guideline frameworks, and continuously monitor for effectiveness, ensuring optimal outcomes for both mother and infant.

INTEGRATING CONTINUOUS GLUCOSE MONITORING (CGM) IN GDM CARE

what the LATEST EVIDENCE Shows

Glycemic control
- A 2025 randomised controlled trial in Diabetes Care (Dexcom G6, GDM ≥20 weeks) found higher Time-in-Range (63–140 mg/dL) and better glucose metrics with rt-CGM + adjunct CBG vs CBG alone.
- A 2025 meta-analysis pooling 6 RCTs (n≈482 GDM) reported lower end-of-pregnancy A1C with CGM vs SMBG.

Perinatal outcomes
- The 2025 RCTs were underpowered for hard neonatal endpoints, but trends favoured CGM for fewer hyperglycemic excursions (drivers of LGA). One 2025 open-label RCT in The Lancet Diabetes & Endocrinology is directly testing perinatal outcomes vs SMBG; early reporting focuses on feasibility and glycemic endpoints.

Guidelines (ADA 2025)
- ADA endorses CGM strongly in type 1 diabetes in pregnancy and recognises growing evidence in GDM; recommends considering CGM when it can improve glycemic management and patient experience, with shared decision-making.

Economic efficiency
- General diabetes: Systematic reviews suggest CGM is often cost-effective at common willingness-to-pay thresholds, but most data are from non-GDM or type 1 pregnancy cohorts.
- Pregnancy-specific signals: Older models show mixed results (some not cost-effective at historic device prices), highlighting that local device cost, sensor replacement cycle, and avoided visits drive value. Expect improving ICERs as sensor costs fall and remote monitoring reduces utilisation.

Equity considerations
- Access & affordability can limit CGM uptake; coverage varies by payer and country. Equity-minded rollouts should target those most likely to benefit (e.g., women with frequent postprandial spikes, needle aversion impeding SMBG, or high LGA risk) and pair CGM with education in the preferred language.

HOW TO INTEGRATE CGM

1. **Who benefits most (triage):**
   - Persistent **postprandial hyperglycaemia** despite MNT/exercise;
   - **High SMBG burden** or poor tolerance of finger sticks;
   - Need for **rapid insulin titration**;
   - Co-morbidities (e.g., steroid use) causing glycemic variability.
2. **Device & data setup:**
   - Choose **rt-CGM** with alerts (e.g., Dexcom G6/G7) when feasible; set pregnancy targets: **TIR 63–140 mg/dL**, **TAR >140**, **TBR <63**; review **AGP** every 1–2 weeks. (Use CBG to confirm outliers or suspected compression lows.)
3. **Therapeutic adjustments:**
   - **Pattern management** over single points:
     - Elevated **overnight** → adjust basal insulin/bedtime snack;
     - **Post-breakfast spikes** → lower GI carbs or add/advance prandial insulin;
     - **Late-evening highs** → meal timing, walk 10–15 min post-meal, or tweak dinner bolus. (CGM trend arrows guide safe titration.)
4. **Safety & education:**

- Teach sensor wear, site rotation, alarm use, and when to **verify with finger-stick** (rapid

changes, suspected hypoglycemia).

- Document plan for **sensor gaps** (adhesive failure, skin irritation).

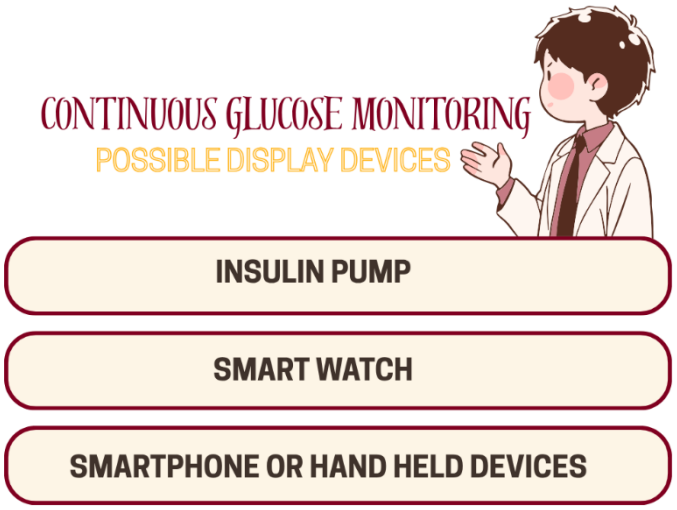
5. **Cost & access workflow:**

- Screen insurance; if not covered, consider **intermittent CGM** (e.g., 10–14-day insights) aligned with **insulin initiation** or **diet overhauls** to maximise yield.

6. **Equity lens:**

- Provide **visual, low-literacy training** and bilingual materials; build **remote check-ins** to reduce travel/time costs; loan **clinic readers** when smartphones are a barrier.

BOTTOM LINE FOR YOUR OBJECTIVE



- **CGM improves glycemic metrics (↑TIR, ↓A1C) in GDM**, with **emerging but not definitive** perinatal benefits;
- **Cost-effectiveness** is plausible but **context-dependent**;
- **Equitable implementation** requires payer navigation, targeted deployment, and patient-centred education;
- For APRNs, CGM is a **powerful intensification tool**, best used with clear targets, structured data review, and shared decision-making.

RISK-STRATIFIED CARE FOR GDM WITH HYPERTENSIVE DISORDERS OF PREGNANCY (HDP)

1) Why stratify? (What the literature shows)

- **GDM + HDP = compounded risk** for preeclampsia, preterm birth, LGA/SGA, cesarean, and NICU admission versus either condition alone; recent cohort and review data reinforce the **additive risk** profile.
- Women with prior GDM also show a **higher later-life hypertension risk** (pooled RR ~1.8), underscoring the need for vigilant antepartum and lifelong care.

2) Risk tiers you can use at the bedside

Tier A – Lower risk

- Diet-controlled GDM (A1) **without** hypertension **or** well-controlled chronic HTN (on one agent, BP in target), no proteinuria, normal growth.

Tier B – Moderate risk

- Medication-treated GDM (A2) **or** gestation-

al hypertension (GH) with BP in target and no severe features; normal labs; normal growth.

Tier C – High risk

- **Any GDM** + (preeclampsia without severe features, fetal growth restriction, or rising BP/meds ≥2).
- **Any GDM** + chronic HTN with superimposed preeclampsia suspicion (proteinuria, symptoms), abnormal labs, or abnormal uteroplacental Dopplers.

Tier D – Very high risk / escalate now

- **Any GDM + preeclampsia with severe features** (severe-range BP, end-organ signs), non-reassuring fetal status, severe growth restriction, or refractory hypertension.

3) Targets & medications (treat both glucose and pressure)

Blood pressure

- **Start/continue antihypertensives** if ≥140/90; **aim ~135/85 mmHg**. First-line: **labetalol, nifedipine; methyldopa** acceptable. (Avoid ACEi/ARBs in pregnancy.)

Aspirin prophylaxis

- If high risk for preeclampsia (e.g., **GDM + HTN**), prescribe **low-dose aspirin 81 mg nightly, start 12–16 wks (no later than 28 wks)** until delivery. **Glycemic targets (ADA 2025)**
- **Fasting <95 mg/dL; 1-h <140; 2-h <120.** Escalate promptly from lifestyle to **insulin** (preferred) or **metformin with informed consent** if targets unmet.

4) Surveillance bundle (match intensity to tier)

Tier	BP & Symptoms	Labs	Fetal Growth	Antepartum Testing
A	Home BP + clinic each visit	None routine	q4–6 wks if A1; otherwise, routine	Consider none or start NST weekly at 36–37 wks if other risks
B	Weekly BP review; home logs	Baseline CMP/platelets; repeat if BP trends up	q3–4 wks	NST/BPP weekly from 32–34 wks (earlier at 32 if A2)
C	2×/week BP review; symptom checks	Weekly labs if concern (platelets, creatinine, AST/ALT, proteinuria)	q3–4 wks + Dopplers if growth concern	NST/BPP 2×/week from 32 wks
D	Inpatient/triage BP and symptoms	Immediate labs; repeat as indicated	Growth + Dopplers as feasible	Continuous/serial assessment; prepare for delivery per status

Consider sFlt-1/PlGF ratio, where available, to help rule out/stratify suspected preeclampsia; FDA-cleared assays and 2025 NHS guidance support its utility as a rule-out within 7 days.

5) Timing and mode of delivery (principles)

- **GDM A1, no HDP:** generally, by **39–40+6 wks.** if no other risks.
- **GDM A2 (on meds), no HDP:** consider **39 wks**.
- **Gestational hypertension (no severe features): deliver at 37+0 wks**.
- **Preeclampsia without severe features: deliver at 37+0 wks**.

- **Preeclampsia with severe features or refractory HTN:**
  deliver at ≥34 wks (earlier if maternal/fetal status unstable).
- **Mode:**
  obstetric indications (EFW, presentation, prior scar). Tight intrapartum glucose management to reduce neonatal hypoglycaemia.

6) Practical APRN Guidelines:

1. **At booking / first HDP signal:**
   start **aspirin** if eligible; set **BP target 135/85**; optimise MNT; plan SMBG cadence and thresholds for escalation.
2. **Escalate early:**
   If fasting glucose stays >95 or postprandial above targets over **1 week**, **start insulin** (add metformin only with informed consent).
3. **Visit frequency:**
   at least **weekly** once GH or A2 GDM is present; **twice weekly** when preeclampsia is suspected/confirmed but without severe features.
4. **Testing:**
   move to **twice-weekly NST/BPP** for Tier C; add Dopplers if growth concern.
5. **Consider CGM** to tighten prandial control and reduce finger-stick burden in intensified care—evidence supports better glycemic metrics, though neonatal endpoints are still mixed.
6. **Postpartum:**
   arrange **OGTT at 6–12 weeks**, BP check within **7–10 days** (or earlier if severe range), and **lifelong cardiometabolic follow-up** (annual BP/glucose).

INTERPROFESSIONAL CARE PLANNING IN GESTATIONAL DIABETES MELLITUS (GDM)

Effective management of gestational diabetes mellitus (GDM) requires **collaboration across multiple disciplines**, including obstetrics, endocrinology, nursing, nutrition, and paediatrics. Interprofessional care plans should be designed to promote **clear communication, equity in access, responsible use of resources, and patient-centred decision-making**.

SHARED GOALS OF CARE

- Achieve **glycaemic targets** recommended by ADA (2025): Fasting <95 mg/dL; 1-h <140 mg/dL; 2-h <120 mg/dL.
- Prevent maternal complications (preeclampsia, cesarean delivery) and neonatal complications (macrosomia, hypoglycemia, NICU admission).
- Ensure **equitable access** to diagnostics, therapies, and education.
- Promote **efficient use of resources** by

avoiding unnecessary duplication of services.

- Support **patient autonomy and engagement** in care decisions.

TEAM ROLES AND RESPONSIBILITIES

- **Obstetric Providers (OB/MFM):**
- Lead antenatal and delivery planning; monitor maternal and fetal wellbeing; determine timing and mode of delivery.
- **Endocrinology/Diabetes Specialists:** Guide pharmacologic therapy (insulin, metformin); interpret SMBG/CGM data; adjust regimens.
- **Nursing (RNs/APRNs):** Coordinate care, provide patient education on SMBG, insulin administration, lifestyle interventions, and identify barriers to adherence.
- **Nutrition (Registered Dietitians):** Deliver individualised, culturally appropriate meal planning; monitor gestational weight gain; integrate low-cost, accessible options.
- **Paediatrics/Neonatology:** Prepare neonatal hypoglycemia protocols; counsel families; support breastfeeding and early newborn care.
- **Social Work/Case Management:** Address socioeconomic barriers, ensure insurance coverage, and connect patients with community resources.

COMMUNICATION STRATEGIES

- **Structured communication tools** (e.g., SBAR, standardised EHR notes) to streamline updates across disciplines.
- **Brief interprofessional huddles** (in-person or virtual) for case review of high-risk patients.
- **Shared care protocols** (insulin initiation, intrapartum glucose management, postpartum testing) to ensure consistency across providers.
- **Single point-of-contact coordination:** often the APRN, ensuring that patient queries and care transitions are seamless.

EQUITY AND PATIENT-CENTRED CARE

- Adapt care plans to **cultural food preferences**, socioeconomic realities, and literacy levels.
- Provide **language-appropriate education** and use visual tools for women with limited literacy.
- Respect **family and social roles** in decision-making, involving partners where appropriate.
- Ensure flexibility in scheduling (telehealth, after-hours visits) to reduce barriers.

RESPONSIBLE STEWARDSHIP OF RESOURCES

- Prioritize **timely but appropriate testing** (e.g., avoid unnecessary repeat OGTTs).
- Use CGM **strategically**, for women struggling with SMBG, on insulin, or with recurrent postprandial hyperglycemia.
- Consolidate appointments where possible (nutrition, nursing, and antenatal testing on the same day).
- Monitor outcomes and resource use through **interprofessional quality improvement metrics** (maternal glycaemic control, LGA rates, NICU admissions).

Interprofessional care plans for GDM should emphasise **collaborative teamwork, consistent communication, and patient-centred adaptation**. By integrating the expertise of obstetric, endocrine, nursing, nutrition, and paediatric teams, APRNs can lead strategies that not only optimise maternal-fetal outcomes but also uphold **equity, efficiency, and respect for patient preferences**.

POSTPARTUM CARE IN WOMEN WITH GDM: EVIDENCE-BASED APPROACHES

1) Postpartum Glucose Testing

- **ADA 2025:**
  - Recommend a **75-g, 2-hour OGTT at 4–12 weeks postpartum** as the gold standard (preferred over fasting glucose or A1C, which can miss impaired glucose tolerance).
  - If OGTT is normal, repeat **lifelong screening every 1–3 years** with fasting plasma glucose, HbA1c, or OGTT depending on risk profile.
- **NICE (UK):**
  - Recommend **fasting plasma glucose at 6–13 weeks postpartum**; HbA1c can be considered if fasting test is not feasible.
  - Annual HbA1c thereafter to screen for type 2 diabetes.
- **Rationale:** Women with GDM have a **10-fold higher lifetime risk of developing type 2 diabetes**, and up to **50% progress within 10 years** without preventive measures.

2) Prevention of Type 2 Diabetes

- **Lifestyle modification is central** (ADA 2025, NICE 2025):
  - **Weight management**: encourage gradual weight loss after delivery, individualized to pre-pregnancy BMI.
  - **Physical activity:** ≥150 min/week of moderate-intensity aerobic activity, plus resistance training ≥2 times/week.

- **Nutrition counseling:** promote balanced, calorie-appropriate diet; emphasize whole grains, high fiber, and reduced refined carbohydrates.

- **Pharmacologic prevention:**
  - **ADA 2025** allows **metformin** in high-risk women (e.g., BMI ≥35, age <60, history of GDM) when lifestyle modification is insufficient.
  - **NICE** does not routinely recommend pharmacologic prevention, emphasising lifestyle as first-line.
- **Breastfeeding:**
  - Both ADA and NICE emphasise that **exclusive breastfeeding** improves maternal glucose metabolism, supports postpartum weight loss, and reduces child obesity and metabolic risk.

3) Longer-Term Maternal Follow-Up

- **Cardiovascular risk:** Both ADA and NICE stress monitoring blood pressure, lipid profile, and weight, given the **2–3 fold increased risk of metabolic syndrome and CVD** in women with prior GDM.
- **Reproductive counselling:** Provide contraception counselling and preconception planning for future pregnancies, with early glucose testing if conception occurs.
- **Mental health:** Screen for postpartum depression and stress, as psychosocial factors influence adherence to lifestyle interventions and long-term metabolic outcomes.

4) Offspring Follow-Up

- **Short-term:** Monitor neonates for hypoglycemia, hyperbilirubinemia, and growth parameters.
- **Long-term:** Offspring of GDM pregnancies are at increased risk of obesity, impaired glucose tolerance, and type 2 diabetes later in life.
  - Encourage pediatric follow-up with **growth and weight trajectory monitoring**.
  - Provide anticipatory guidance to families on nutrition and physical activity for children.
- **Emerging evidence (2024–2025):** Epigenetic and metabolic programming in utero may predispose offspring to lifelong cardiometabolic risk, reinforcing the importance of **maternal glucose control during pregnancy and postpartum prevention strategies**.

5) APRN Clinical Pearls

- Schedule the **postpartum OGTT before hospital discharge** to improve follow-up rates.

- Use **EHR reminders or registries** to flag women with prior GDM for ongoing screening.
- Integrate **team-based care** (OB, endocrinology, primary care, pediatrics, nursing, nutrition) to coordinate long-term follow-up.
- Address **equity gaps** by ensuring women with limited access to care receive community-based referrals and culturally appropriate counseling.

Postpartum care of women with GDM must prioritize **early glucose testing, long-term diabetes prevention, and coordinated maternal–child follow-up**. Both **ADA 2025** and **NICE** reinforce structured surveillance and lifestyle interventions, with ADA supporting selective metformin use for prevention. APRNs play a pivotal role in bridging obstetric and primary care, ensuring ongoing monitoring, education, and family-centered support.

CONCLUSION

Gestational diabetes mellitus (GDM) remains one of the most common and impactful medical complications of pregnancy, with consequences that extend far beyond delivery. Contemporary evidence highlights the dual challenge of managing short-term perinatal risks, such as macrosomia, neonatal hypoglycemia, and preeclampsia, while also addressing long-term maternal and offspring risks, including type 2 diabetes, cardiovascular disease, and metabolic dysfunction. For this reason, GDM must be approached as both an obstetric and a chronic disease prevention issue.

For Advanced Practice Registered Nurses (APRNs), effective management of GDM requires integration of current guidelines with individualised, patient-centred care. Screening and diagnostic strategies continue to evolve, with ADA, NICE, and ADIPS offering differing criteria that influence who is diagnosed and treated. Nutrition and lifestyle modification remain the foundation of therapy, but these strategies must be adapted to cultural, socioeconomic, and personal circumstances to ensure adherence and equity. When pharmacologic therapy is required, insulin continues to be the gold standard, while metformin offers an oral alternative that is increasingly used, though long-term offspring outcomes remain an area of ongoing research. Shared decision-making is essential to guide women through these choices in a way that respects both evidence and personal preference.

Technology also plays an expanding role in GDM care. Continuous glucose monitoring (CGM) has demonstrated improvements in glycemic metrics and patient experience, though its effect on perinatal outcomes and its

economic efficiency are still under study. Selective, equity-minded implementation of CGM can support individualised care, particularly in women requiring insulin or struggling with postprandial control. For women with co-incident hypertensive disorders, a risk-stratified approach is critical, given the compounded maternal–fetal risks. APRNs are central to implementing surveillance bundles, adjusting therapies promptly, and coordinating timely delivery planning.

Interprofessional collaboration is the backbone of comprehensive GDM care. Obstetricians, endocrinologists, nurses, dietitians, paediatricians, and social workers each contribute expertise that must be integrated through structured communication, shared care protocols, and resource-conscious strategies. In the postpartum period, continued vigilance is essential. Both ADA 2025 and NICE guidelines emphasise the importance of early glucose testing, long-term diabetes prevention, and cardiometabolic follow-up, alongside pediatric monitoring for offspring metabolic health.

In summary, GDM care today requires an interprofessional, patient-centred, and equity-driven model. APRNs are uniquely positioned to lead this effort, bridging guideline-based recommendations with real-world patient needs, ensuring timely escalation of therapy, and promoting continuity of care into the postpartum period and beyond. By doing so, APRNs can not only improve maternal and neonatal outcomes during pregnancy but also change the long-term health trajectory for women and their children, reducing the burden of diabetes and cardiometabolic disease across generations.

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