**Gestational Diabetes**

OGSB clinical management protocol:

**Diagnosis**

GDM:

- Fasting plasma glucose: 5.1–6.9 mmol/L (92–125 mg/dl)

- 1-hour plasma glucose: ≥10.0 mmol/L (180 mg/dl)

- 2-hour plasma glucose: 8.5–11.0 mmol/L (153–199 mg/dl)

Diabetes in Pregnancy (DIP):

- Fasting plasma glucose: ≥7.0 mmol/L (126 mg/dl)

- 2-hour plasma glucose: ≥11.1 mmol/L (200 mg/dl)

- Random plasma glucose: ≥11.1 mmol/L (200 mg/dl) + symptoms

# Screening

All pregnant women at booking; rescreen at 24–28 weeks if normal initially.

High-risk women: rescreen at 34–36 weeks.

Risk factors: previous GDM, prediabetes, age ≥35, BMI ≥23, PCOS, steroid use, macrosomia, family history, acanthosis nigricans.

# Management

Lifestyle Management: Moderate aerobic exercise (30 min/day, 3–4 times/week).

Medical Nutrition Therapy (MNT):

- 3 meals + 3 snacks daily.

- Caloric needs:

Normal BMI: 30–38 kcal/kg/day;

Overweight: 25–30 kcal/kg/day;

Obese: 30–33% calorie restriction;

Underweight: 35–40 kcal/kg/day.

- Calorie distribution: Breakfast 10–15%, Lunch 20–30%, Dinner 30–40%, Snacks 0–10%.

- Macronutrients:

Carbs 40–50% (complex),

Protein 20%,

Fat 30–40%.

Pharmacologic Therapy:

- If uncontrolled after 2 weeks → Insulin.

- Insulin dosing:

0.8 U/kg/day (1st trimester),

1.0 U/kg/day (2nd trimester),

1.2 U/kg/day (3rd trimester).

- Regimens: Regular insulin before meals; or Mixtard 70/30.

# Glycemic Targets

Preprandial: <5.3 mmol/L

1h postprandial: <7.8 mmol/L

2h postprandial: <6.7 mmol/L

Self-monitoring: at least 4 times/day (fasting + 2h after meals).

# Antenatal Care

Well-controlled GDM: routine ANC.

Uncontrolled/complicated: 2-weekly in 2nd trimester, weekly in 3rd.

Fetal scans: anomaly at 18–22 wks, echo at 24–26 wks.

Fetal movement count monitoring due to IUD risk.

Delivery:

Well-controlled on MNT → term delivery;

On insulin → refer to higher centre for monitoring during labour, insulin therapy and neonatal mangement

# Care During Labour

Induction in early morning.

BG monitoring:

On MNT: every 4–6 hrs;

On insulin: hourly.

Target glycemia: 4–7 mmol/L.

May need insulin + 5% dextrose infusion.

Analgesia: epidural if available.

# Care During Caesarean Section

Plan elective CS in morning.

Continue night insulin; withhold morning dose.

Hourly BG monitoring.

Avoid hyperglycemia to reduce neonatal hypoglycemia risk.

Optimize glycemic control perioperatively.

# Neonatal Care

Ensure neonatologist/pediatrician presence if available.

Start feeds within 30 min of birth; continue every 2–3 hrs.

Maintain pre-feed glucose ≥2.0 mmol/L.

If <2.0 mmol/L twice, or feeding issues → tube feeds/IV dextrose.

# Postnatal Care

Women with GDM: Test for persistent diabetes at 4–12 weeks postpartum with OGTT.

**International guidelines for GDM**

**Nice guideline:**

# Gestational Diabetes (GDM)

Screen women with risk factors (obesity, previous GDM, family history).

Target glucose levels: Fasting ≤5.3 mmol/L, 1h post-meal ≤7.8 mmol/L, 2h post-meal ≤6.4 mmol/L.

Management: Start with diet + exercise.

If not controlled in 1–2 weeks: add Metformin.

If contraindicated/unacceptable or uncontrolled: Insulin.

If fasting ≥7 mmol/L at diagnosis: start insulin (± metformin).

Refer to dietitian and advise regular exercise.

# Antenatal Care

Joint diabetes + antenatal clinic follow-up every 1–2 weeks.

Regular blood glucose monitoring (fasting, pre/post-meal, bedtime).

HbA1c monitoring for pre-existing diabetes.

Retinal screening at booking and 16–20 weeks (if retinopathy).

Ultrasound scans: 20 weeks (anomaly + fetal heart), 28, 32, 36 weeks (growth + amniotic fluid).

Offer induction of labour or C-section at 37–38+6 weeks for type 1/2 diabetes.

For GDM: birth no later than 40+6 weeks.

# Intrapartum Care

Blood glucose control during labour: target 4–7 mmol/L.

Use insulin + dextrose infusion if needed.

Mode of delivery based on maternal/fetal condition.

Diabetes not a contraindication to tocolysis or steroids if preterm.

# Neonatal Care

Assess risk and admit to neonatal unit if necessary.

Prevent hypoglycaemia: early feeding, monitor blood glucose.

Watch for macrosomia, birth trauma, respiratory distress, jaundice.

# Postnatal Care

Women with pre-existing diabetes: return to routine diabetes care.

Women with GDM: Check blood glucose before discharge.

Fasting plasma glucose 6–13 weeks postpartum (or HbA1c if later).

Annual diabetes screening if normal.

Lifestyle advice (diet, exercise, weight).

Early screening/self-monitoring in future pregnancies.

Safe medicines during breastfeeding: continue metformin or insulin, avoid statins, ACEi/ARBs.

ACOG Guidance: Gestational Diabetes Mellitus (GDM) Management

# Classification

Class A1 GDM: Managed with diet alone.

Class A2 GDM: Requires medication (insulin, sometimes oral agents).

# Screening

ACOG supports the two‑step approach:

- Step 1: 50‑g oral glucose challenge test at 24‑28 weeks. If positive →

- Step 2: 3‑hour 100‑g OGTT. Diagnosis of GDM requires at least 2 abnormal values.

Screening before 24 weeks is not routine; only for women with risk factors.

# Early Screening / Risk Factors

Consider early screening if high risk:

- High BMI (≥25 kg/m²; lower for Asian populations).

- Inactivity, prior GDM, macrosomia, gestational hypertension, dyslipidemia, PCOS, strong family history.

- Elevated A1C (≥5.7%), impaired fasting glucose, or other pre‑diabetes markers.

# Postpartum Screening

Screen women with GDM between 4‑12 weeks postpartum for diabetes or prediabetes.

Alternative: During hospital stay after delivery, a 75‑g OGTT can be performed instead of waiting.

# Glucose Target Levels

Fasting/pre‑meal: <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)

# Diet and Exercise

Dietary plan ideally by a registered dietitian.

Balanced meals (often 3 meals + 2 snacks) to avoid large glucose fluctuations.

Exercise: at least 150 minutes/week moderate‑intensity aerobic activity (≈30 min, 5 days/week).

Walking after meals helps reduce glucose spikes.

# Pharmacologic Treatment

If diet + lifestyle do not achieve targets, insulin is preferred.

Start insulin dose: ~0.7‑1.0 units/kg/day, divided into long‑acting/intermediate + short‑acting insulin.

Short‑acting analogues (lispro, aspart) preferred over regular insulin due to quicker action.

Metformin is an option if insulin is not acceptable, but discuss placental transfer and limited long‑term data.

Glyburide is not preferred due to higher risk of adverse outcomes (e.g., macrosomia).

# Fetal Monitoring

A2GDM (on medication) with poor control: start fetal assessment around 32 weeks.

A1GDM: less clearly defined; monitoring may be based on local practice.

Ultrasound and amniotic fluid measurement are recommended if risk of polyhydramnios.

# Timing of Delivery

Controlled on diet: deliver between 39w0d and 40w6d.

Well controlled on medication: deliver between 39w0d and 39w6d.

Poorly controlled: consider earlier delivery between 37w0d‑38w6d.

If estimated fetal weight ≥4500 g: discuss scheduled C‑section due to risk of shoulder dystocia.

Reference:

Standard clinical management protocols and flowcharts on emergency obstetric and neonatal care 2019, OGSB

Diabetes in pregnancy: management from preconception to the postnatal period

ACOG Guidance: Gestational Diabetes Mellitus (GDM) Management