CLINICIAN EVIDENCE REVIEW

CGM in Gestational Diabetes

An Emerging Paradigm Shift

CGM expands what we can see. Research must establish how best to act on that information.

Measurement

More of the glucose pattern becomes visible.

Clinical utility

Outcome benefits vary across trials.

Treatment targets

GDM-specific percentage targets remain unresolved.

Chukwuma Onyeije, MD · OpenMFM

Targeted literature check: September 7, 2026 · Clinical review pending

Sources: ADA 2026 · International consensus 2026

01 / LEARNING OBJECTIVES

Three questions frame the clinical decision

01	**What is measured?**	Distinguish a timed blood glucose value from a sensor-derived pattern.
02	**What improves?**	Evaluate the primary endpoint and the care pathway tested in each trial.
03	**What should trigger action?**	Separate established guidance, expert consensus, and exploratory CGM targets.

> Identify the decision before interpreting the trace.

Sources: ADA 2026 · International consensus 2026

02 / SCOPE

Diabetes populations require separate evidence

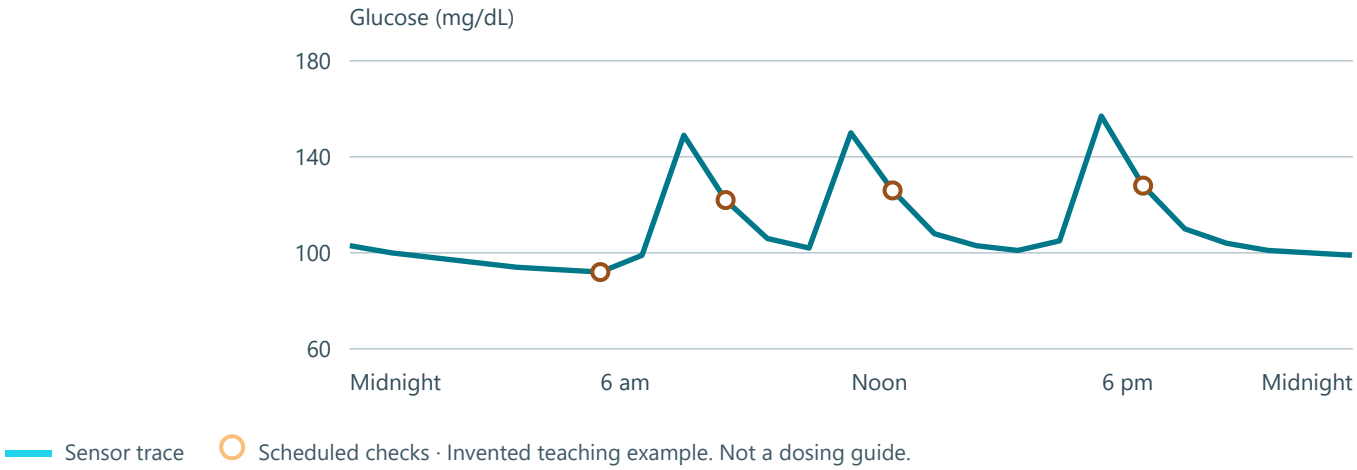
Population	Evidence and guidance	Implication
Type 1 diabetes	CONCEPTT supports pregnancy benefit; ADA recommends CGM	Use pregnancy-specific guidance and individualized therapy
Type 2 diabetes	Pregnancy evidence and percentage targets are less established	Individualize CGM use; avoid borrowing the magnitude of T1D benefit
Gestational diabetes	Recent randomized trials have mixed results	Discuss potential value alongside treatment, access, and burden

Sources: ADA 2026 · International consensus 2026 · CONCEPTT

03 / MEASUREMENT

Scheduled checks sample a larger glucose pattern

Duration, timing, trajectory, and overnight exposure become visible between fasting and postprandial checks.



Sources: ADA 2026

04 / BIOLOGICAL RATIONALE

A glucose–risk association does not validate a dosing target

01	**Association**	HAPO found graded relationships between maternal glucose and adverse pregnancy outcomes.
02	**Candidate metric**	CGM makes exposure over time measurable. Timing and duration may add information.
03	**Intervention test**	A treatment strategy must show benefit and acceptable harms before its threshold becomes a validated target.

> HAPO was observational and used an oral glucose tolerance test. It was not a trial of CGM-guided treatment.

Sources: HAPO

Accuracy and clinical utility answer different questions

Construct	Question
Analytical accuracy	How closely does the sensor agree with a reference measurement? Correlation alone is insufficient.
Trend accuracy	Does it correctly represent direction and rate of change?
Clinical accuracy	Could measurement error lead to a harmful decision?
Clinical utility	Does using the device within a care pathway improve outcomes?

> Reliable treatment requires accuracy even when the long-term value lies in patterns.

Sources: G7 validation · ADA 2026

06 / DISCORDANT READINGS

A discrepant pair can matter for an immediate decision

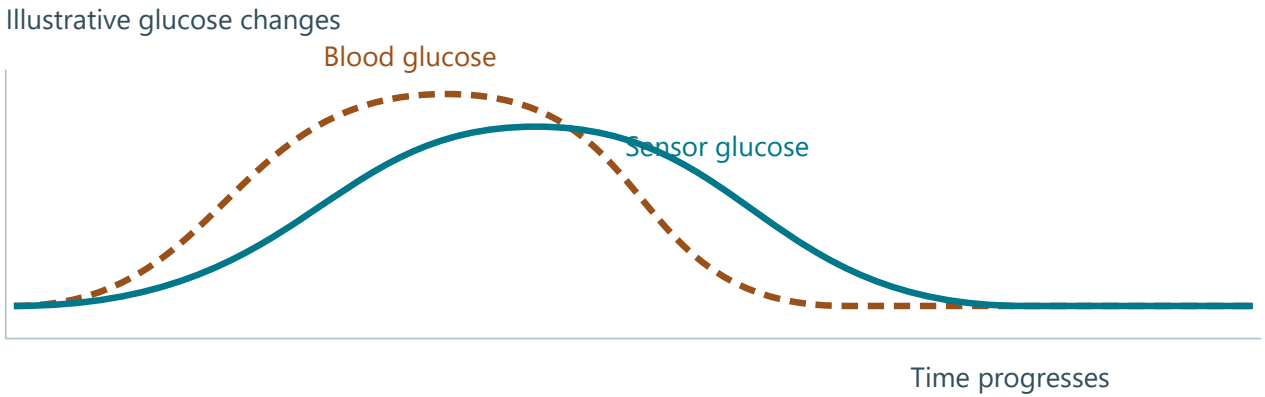


Illustration only. The gap varies and is not a fixed time correction.

Immediate assessment

Consider symptoms, glucose trajectory, recent treatment, sensor pressure, and device status. Use meter confirmation when indicated.

Overall assessment

One pair does not characterize accuracy across a sensor's wear period. Recurrent unexplained discrepancies deserve review.

ADA advises finger-stick checks in circumstances including symptoms that disagree, after hypoglycemia correction, and on day 1 when accuracy can be lower. Follow the device's instructions.

Sources: ADA 2026 · Dexcom G7 instructions

07 / DEXCOM G7 VALIDATION

Pregnancy validation is device- and population-specific

105

Enrolled: 59 T1D, 21 T2D, 25 GDM

96

Participants contributing accuracy data

92.5%

Overall 20/20 agreement across 2,102 pairs

Comparator: arterialized venous glucose measured with YSI. The study evaluated a specific device across mixed diabetes types.

▼ How to interpret these findings

20/20 agreement: within 20% of comparator readings ≥100 mg/dL, or within 20 mg/dL below 100 mg/dL. Agreement varied by wear day: 78.6% on day 1, 96.3% on days 4 and 7, and 97.3% on day 10.

Funding: Dexcom. This accuracy study does not establish neonatal benefit or validate every sensor in every pregnancy setting.

Sources: G7 validation

Compare the primary endpoint and the care pathway

Trial	Randomized	Primary endpoint	Comparator
GRACE	375	Large for gestational age (LGA)	SMBG plus standard care
DipGluMo	302	Composite perinatal outcome	SMBG six times daily
Steady Sugar	128	TIR 63–140 mg/dL	SMBG + monthly blinded CGM, with clinician review
Valent	111	TIR 60–140 mg/dL	CBG four times daily + periodic blinded CGM

> The glucose range, intervention, and clinical endpoint are not uniform.

Sources: GRACE · DipGluMo · Steady Sugar · Valent 2025

09 / PRIMARY ENDPOINT: LARGE FOR GESTATIONAL AGE

GRACE found fewer LGA births with CGM

Reported OR 0.32 (95% CI 0.10–0.87; p = 0.014)

▼ **Study design, safety, and limitations**

375 randomized (190 CGM / 185 SMBG); primary endpoint available for 345 (170 / 175). Open-label, four university hospitals in Austria, Germany, and Switzerland. Randomization at mean 28.6 weeks; Dexcom G6 through delivery versus SMBG. Control participants wore blinded CGM for assessment.

SGA: 33/170 (19%) versus 23/175 (13%); OR 1.59 (95% CI 0.86–2.99). This imprecise safety signal merits study, without proving overtreatment. LGA used customized GROW percentiles.

Funding: Dexcom. Limitations include open treatment, missing primary data, setting-specific care, and low event counts. Absolute percentages above are calculated from reported counts.

Sources: GRACE

10 / PRIMARY ENDPOINT: COMPOSITE PERINATAL OUTCOME

DipGluMo found no improvement in its composite endpoint

Scale: 0–50%

Adjusted OR 1.02 (95% CI 0.63–1.66)

▼ **Study design, correction, and limitations**

302 randomized (157 / 145); three withdrew before baseline, leaving 299 (156 / 143). Primary data: 297 (154 / 143). Single-center, open-label study in Bern. Dexcom G6 versus SMBG six times daily; blinded CGM assessments in controls.

Composite: LGA, macrosomia, polyhydramnios, neonatal hypoglycemia, or stillbirth. Unadjusted OR 1.06 (95% CI 0.66–1.71). The interval permits both benefit and harm; the study did not establish equivalence.

Funding: University of Bern and Swiss Diabetes Foundation. Limitations: single center, composite endpoint, and missing comparative sensor data. The published correction changes control-group TAR in Table 4 to 2.3%; it does not change this primary result. Percentages above are calculated from counts.

Sources: DipGluMo · DipGluMo correction

11 / PRIMARY ENDPOINT BEFORE SECONDARY FINDINGS

Steady Sugar's primary TIR result was nonsignificant

88.6%

CGM TIR

95% CI 82.5–94.3

87.4%

Control TIR

95% CI 79.1–93.9

Range 63–140 mg/dL · p = 0.37

Secondary LGA and NICU findings favored CGM. They require interpretation alongside the primary result and the CGM-informed comparator.

▼ Endpoints, denominator changes, and funding

Single-center early GDM, diagnosed after 8 and before 26 weeks. 128 randomized (87 / 41); 120 with CGM data (80 / 40). Dexcom G6 with recommended SMBG twice daily versus SMBG four times daily plus monthly blinded G6 Pro. Clinicians reviewed CGM in both groups.

LGA: 4/80 (5.0%) vs 7/38 (18.4%), p = 0.019. NICU: 18/80 (22.5%) vs 17/38 (44.7%), p = 0.013. Between-group confidence intervals for these binary outcomes were not reported in the outcome table. Two controls were excluded from delivery analyses, including one stillbirth.

Group TIR intervals above are the paper's reported mean 95% CIs, not the CI for a treatment difference. Funding and supplies: Dexcom; several authors had company affiliations. Multiple secondary comparisons and a single center limit inference.

Sources: Steady Sugar

Valent found higher TIR with real-time CGM

93 ± 6%

CGM TIR, mean ± SD

88 ± 14%

Control TIR, mean ± SD

Range 60–140 mg/dL · p = 0.027

> The trial does not establish a definitive neonatal benefit.

▼ Trial context and limitations

111 randomized at ≥20 weeks (74 CGM / 37 control), single center at Oregon Health & Science University. Continuous Dexcom G6 plus adjunctive capillary blood glucose (CBG) versus CBG four times daily with periodic blinded CGM.

Primary outcome: percentage of time in 60–140 mg/dL from enrollment to admission for delivery. The abstract reports group means and SDs; a between-group 95% CI is not supplied there. Numbers shown are percentages, despite a unit inconsistency in the abstract display.

Funding: Dexcom. Open-label, small study designed around glycemia. Sensor availability and adherence affect interpretation; neonatal outcomes require larger trials.

Sources: Valent 2025

Trial differences generate hypotheses about benefit

Comparator care

Frequent SMBG and structured review may narrow the added benefit of continuous data.

Population and timing

Early GDM, baseline risk, and gestational age may affect the opportunity to intervene.

Treatment response

Education, adherence, and the response to data may influence outcomes.

> None of these explanations was isolated experimentally. Missing data and chance also remain plausible contributors.

Sources: GRACE · DipGluMo · Steady Sugar · Valent 2025

Meta-analyses depend on what they pool

Review	Evidence set	Interpretation
Gautam 2026	11 GDM RCTs; 1,225 participants	Lower mean birth weight; no significant improvement in multiple other clinical endpoints
Yang 2026	21 GDM studies; 5,650 participants; RCTs and observational studies	Broader favorable associations; pooled causal interpretation is limited by mixed designs
Balaji 2026	35 studies; mixed designs; search through January 2025	Useful context on patterns; not a synthesis of all later trials

▼ **Why these summaries can differ**

Yang searched through April 2026 and reported reductions in selected glycemic and pregnancy outcomes. Gautam's RCT-only synthesis found no significant differences in macrosomia, neonatal hypoglycemia, or NICU admission. Compare included trials, study design, sensor generation, and endpoint definitions before comparing effect estimates.

A lower mean birth weight is not automatically a net clinical benefit. SGA, hypoglycemia, burden, and costs belong in the benefit–harm assessment.

Sources: Gautam 2026 · Yang 2026 · Balaji 2026

GDM blood glucose goals and T1D CGM goals are distinct

Blood glucose goals in pregnancy

Fasting **<95 mg/dL**
Either 1-hour postprandial **<140**
or 2-hour postprandial **<120**

Treatment goals, not diagnostic OGTT thresholds. Individualize for safety.

T1D pregnancy CGM percentage goals

63–140 mg/dL: **TIR >70%**
>140 mg/dL: **TAR <25%**
<63 mg/dL: **TBR <4%**
<54 mg/dL: **TBR <1%**

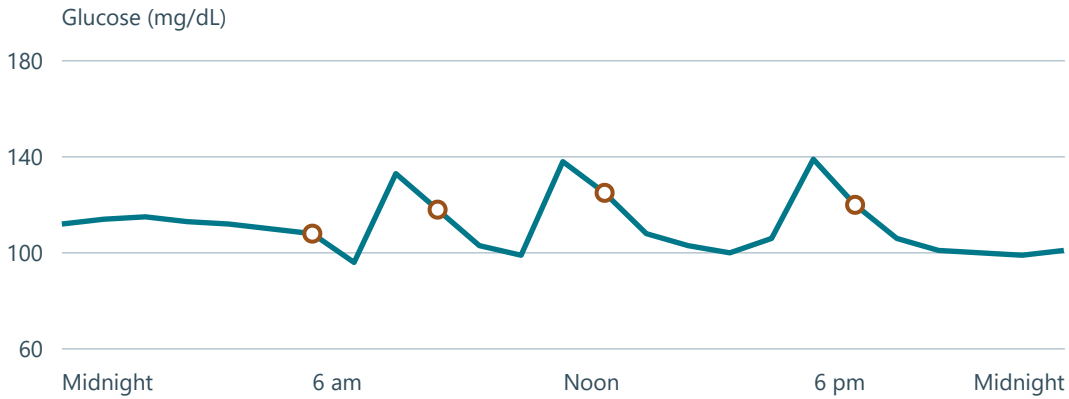
> Routine GDM and T2D percentage targets remain unresolved. The T1D percentage goals should not be presented as validated GDM targets.

Sources: ADA 2026 · International consensus 2026

16 / ILLUSTRATIVE CASE

Overnight elevation prompts contextual review

A patient’s sensor shows repeated overnight elevation despite a reassuring scheduled morning check.



Sensor trace Scheduled checks · Invented teaching example. Not a dosing guide.

▼ **Reveal the clinical reasoning**

Review several nights and trace quality. Reconcile symptoms, pressure on the sensor, meter checks when indicated, late meals, and current therapy. Then evaluate whether treatment needs adjustment within the patient’s plan.

This invented trace illustrates a review process. It does not supply a validated nocturnal threshold or an automatic insulin rule.

Sources: ADA 2026

An overall TIR can conceal timing-specific concerns

Trace A: 90 mg/dL all day

100%

TIR in 63–140 mg/dL

Trace B: 109 mg/dL overnight, 90 later

100%

TIR in the same range

Both invented profiles stay in range. Their overnight patterns differ.

▼ Reveal the clinical reasoning

A 63–140 mg/dL summary cannot determine whether fasting blood glucose meets its separate goal. Evaluate fasting and meal-specific readings with the clinical context. Sensor and blood glucose values are not interchangeable at every moment.

These simplified profiles are hypothetical, not physiologic predictions or a dosing algorithm.

Sources: ADA 2026 · International consensus 2026

CGM needs a defined review and response plan

01	**Select together**	Discuss treatment, preferences, access, device suitability, and out-of-pocket cost.
02	**Teach and prepare**	Explain alerts, symptoms, checking rules, and backup meter supplies.
03	**Assign responsibility**	Specify who reviews data, how often, and how urgent concerns reach the team.
04	**Reassess**	Review usefulness, treatment response, hypoglycemia, skin effects, and burden.

Sources: ADA 2026 · International consensus 2026 · Dexcom G7 instructions

Clinical Pearls

1. Separate GDM, T1D, and T2D evidence.
2. Distinguish better measurement from demonstrated clinical benefit.
3. Assess discordance when it matters to an immediate decision.
4. Read the primary endpoint before favorable secondary findings.
5. Review fasting and meal-specific patterns alongside summary metrics.

Sources: ADA 2026 · GRACE · DipGluMo · Steady Sugar · Valent 2025

Evidence & Controversies

Known

CGM reveals patterns between scheduled checks. Some trials show benefit, and others show no primary clinical improvement.

Uncertain

Which GDM patients benefit most, and which treatment algorithms improve neonatal outcomes safely?

Practice varies

Selection, escalation thresholds, review frequency, and reimbursement remain context-dependent.

Next studies

Compare actionable algorithms. Measure neonatal outcomes, SGA, hypoglycemia, patient burden, cost, and equitable access.

> The strongest next step is a validated action strategy for the additional information.

Sources: ADA 2026 · International consensus 2026 · GRACE · DipGluMo · Steady Sugar · Valent 2025

References: guidance and randomized trials

1. GUIDELINE

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3. GDM RANDOMIZED TRIAL

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4. GDM RANDOMIZED TRIAL

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Sources: ADA 2026 · International consensus 2026 · GRACE · DipGluMo · Steady Sugar · Valent 2025

References: measurement and evidence synthesis

1. DEVICE VALIDATION

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4. GDM RCT META-ANALYSIS

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5. MIXED-DESIGN GDM META-ANALYSIS

   Yang S, Boon ET, Yang Q, et al. Comparing efficacy in glycaemic control and pregnancy outcomes between continuous glucose monitoring and self-monitoring of blood glucose in pregnancies complicated by gestational diabetes mellitus: a systematic review and meta-analysis. Diabetes Res Clin Pract. 2026;239:113488. doi:10.1016/j.diabres.2026.113488.

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7. DEVICE INSTRUCTIONS

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Chukwuma Onyeije, MD / OpenMFM · Clinical review pending

Targeted search and source checks: September 7, 2026. This is an educational review, not a systematic search.

Sources: G7 validation · HAPO · CONCEPTT · Gautam 2026 · Yang 2026 · Balaji 2026 · Dexcom G7 instructions