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Continuous Glucose Monitoring in Type 2 Diabetes and Beyond
A Review

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IMPORTANCE Continuous glucose monitoring (CGM), initially recommended primarily for people with type 1 diabetes, has rapidly expanded to patients with type 2 diabetes and, more recently, even to individuals without diabetes. This broadening use underscores the importance of critically examining the evidence supporting CGM across populations, clarifying where benefits are established, where they are modest, and where they remain uncertain.

OBSERVATIONS We reviewed systematic reviews and meta-analyses of randomized trials and clinical guidelines evaluating CGM use beyond type 1 diabetes, with particular attention to glycemic outcomes, hypoglycemia, patient-reported outcomes, and potential unintended consequences in nonpregnant adults. In adults with type 2 diabetes, evidence from randomized trials consistently demonstrated that CGM use was associated, on average, with a modest yet consistent reduction in hemoglobin A_{1c} of approximately 0.3% compared with finger-stick monitoring or usual care; some patients benefited considerably more. Only limited and indirect evidence supported the adoption of CGM in people with type 2 diabetes not receiving glucose-lowering therapy or in those with prediabetes or obesity.

CONCLUSIONS AND RELEVANCE CGM should be deployed in response to a specific patient problem rather than as a default intervention. Deliberate, equitable deployment of CGM that is aligned with patient goals, clinical context, and system capacity will be necessary to ensure that those most likely to benefit are not left behind, while avoiding overuse in populations for whom benefit remains unproven.

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Continuous glucose monitoring (CGM) measures interstitial glucose levels in near real time. Since the first US Food and Drug Administration approval in 1999, both the technology and the evidence supporting its use have evolved.[1] Initially available only as a supplemental tool to finger-stick glucose monitoring for select patients with type 1 diabetes,[2] CGM is now recommended by several authorities worldwide for all patients with type 1 diabetes and for many with type 2 diabetes receiving insulin or other therapies that pose a risk of hypoglycemia[3-5]; some guidelines also suggest CGM alongside coaching for people with prediabetes.[3] In 2024, the US Food and Drug Administration approved an over-the-counter CGM system,[6] widening consumer access. The most commonly used modality is real-time CGM (**Figure**).[7-10] This review examines the evidence for CGM use beyond type 1 diabetes or pregnancy, explores its usefulness as a behavior change aid, and critically assesses its expanding role in the care of people with dysglycemia.

Methods

We searched the PubMed database for systematic reviews and meta-analyses of randomized trials published over the past 15 years (January 2010 to December 2025) that evaluated the effect of CGM on glycemic measures, hypoglycemia, and patient-reported outcomes in nonpregnant adults. Additionally, we reviewed individual trials and practice guidelines. In areas where evidence is limited, we drew on emerging practice patterns and clinical experience.

Results

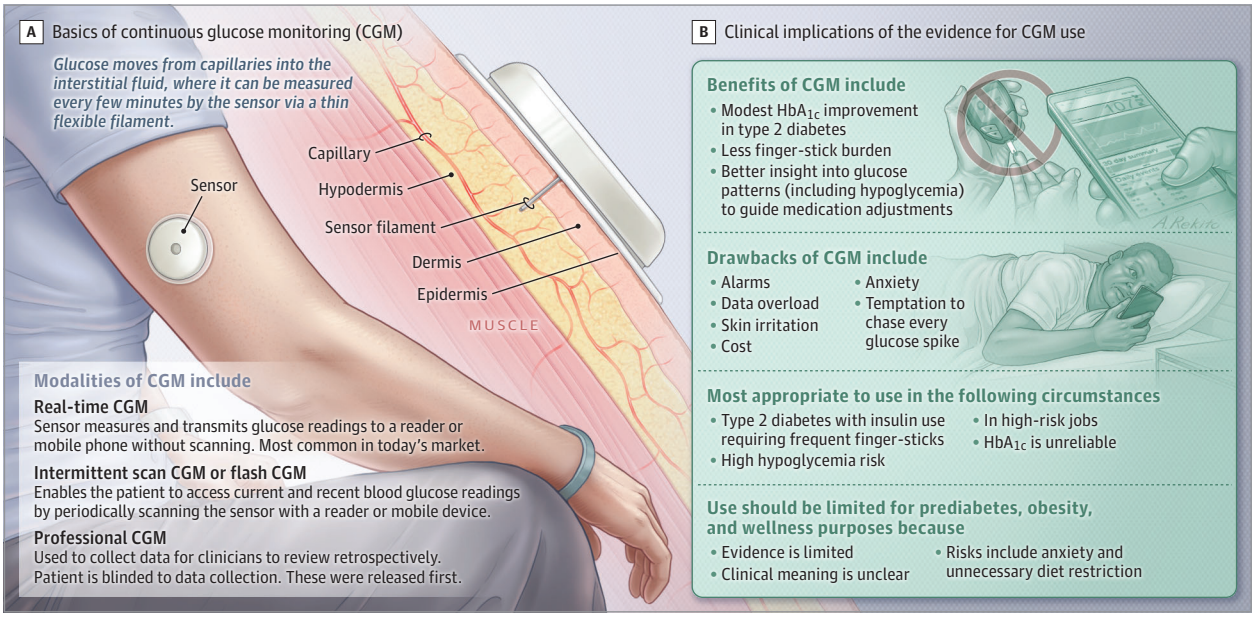
Evidence in Type 2 Diabetes

Effect on Glycemic Control

Multiple and overlapping systematic reviews have synthesized the results of randomized trials enrolling heterogeneous populations with type 2 diabetes—most using insulin—and evaluating the effect of a range of CGM approaches on hemoglobin A_{1c} (HbA_{1c}) levels (**Table 1**).[11-26] CGM use reduced HbA_{1c}, on average, by 0.3% (3.3 mmol/mol) compared with capillary monitoring or with usual care. Reviews comparing CGM modalities favored real-time CGM over intermittent scan CGM. Improvement in HbA_{1c} was consistent between patients with type 2 diabetes receiving insulin with or without noninsulin agents and those receiving noninsulin agents alone in studies that compared these groups. For example, 1 meta-analysis including 4 trials of 652 patients receiving insulin alone, 3 trials of 190 patients receiving noninsulin agents alone, and 5 trials of 406 patients receiving both found similar and statis-

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Figure. Basics of Continuous Glucose Monitoring and its Benefits and Drawbacks



Continuous glucose monitoring reduces the need for finger-stick testing; provides detailed information about glucose patterns and responses to insulin, other medications, and food; and can alert patients to impending hypoglycemia. However, it may increase intrusive alarms and alerts, contribute to anxiety or distress, and add costs. HbA_{1c} indicates hemoglobin A_{1c}.

tically significant mean reductions in HbA_{1c} in each subgroup of approximately 0.3% (3.3 mmol/mol).[19] Distinction was not made between those using once-daily vs multiple daily injections of insulin. Four meta-analyses summarizing evidence in patients receiving noninsulin treatment found similar HbA_{1c} improvements compared to control, ranging from −0.3% to −0.4% (−3.3 to −4.4 mmol/mol).[18,19,23,25] An additional meta-analysis, which focused specifically on trials enrolling patients treated with noninsulin therapies and comparing usual care with or without CGM coupled with nutritional education or feedback, found similar improvements in HbA_{1c}.[26] Additional trials evaluating CGM among populations receiving noninsulin therapies are underway; as such, evidence is likely to evolve over time.

Effect on Hypoglycemia

In patients with type 2 diabetes using insulin or insulin secretagogues, CGM can detect asymptomatic hypoglycemia and modestly reduces time spent in hypoglycemia. However, there is no clear evidence from randomized trials that CGM use in people with type 2 diabetes reduces the risk of severe hypoglycemia requiring third-party assistance. In 1 meta-analysis, limited by the rarity of such severe events, CGM use, compared with capillary monitoring, reduced the time below target range by −0.7% (95% CI, −1.2% to −0.1%) without statistically significant reduction in the risk of severe hypoglycemic events (relative risk, 0.66; 95% CI, 0.15-3.0).[19] In another meta-analysis, CGM use reduced time below 70 mg/dL (3.9 mmol/L; to convert glucose to mmol/L, multiply by 0.0555) by an average of approximately 27 minutes over a 24-hour period and time below 54 mg/dL (3 mmol/L) by 14 minutes.[16] Neither meta-analysis examined nocturnal hypoglycemia.

Effect on Other Outcomes

Few studies have reported on the risk of macrovascular or microvascular outcomes with CGM use in patients living with type 2 diabetes. Multiple patient-reported outcomes have been evaluated in trials of CGM. One meta-analysis summarizing 2 trials reported no statistically significant difference in fear of hypoglycemia or other measures of quality of life between CGM and control.[11] Another meta-analysis reported no statistically significant difference in quality-of-life measures in 1 trial and no statistically significant difference in patient satisfaction in another.[14] A third meta-analysis found no statistically significant difference in diabetes distress scores measured in 3 trials, quality-of-life scores measured in 2 trials, and well-being and depression scores measured in 1 trial.[22] Several, but not all, studies reported increased patient satisfaction scores with CGM compared with capillary self-monitoring or usual care.[15,22,25]

Quality of the Evidence

Across the reviews, the trials of CGM demonstrated generally consistent effects, but their methodologic quality, even after considering lack of participant blinding, was mixed, including concerns about lack of allocation concealment, incomplete outcome data, and selective reporting. When these domains are considered together, the certainty of evidence is best characterized as moderate.

Evidence Beyond Type 2 Diabetes

CGM devices are increasingly marketed to and used by people without diabetes seeking greater insight into how their diet and activity affect glucose levels. For example, CGM is advertised as a useful tool for people with prediabetes and obesity,[27,28] with some lifestyle experts promoting its use to detect dangerous trends in metabolism

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Table 1. Narrative Summary of Meta-Analyses of Clinical Trials of Continuous Glucose Monitoring (CGM) in People With Type 2 Diabetes[a]

Source	No. of trials	No. of trial participants	Type of diabetes included	Type of CGM	Treatment regimen	Control group	Mean difference in HbA_{1c}, CGM vs control (95% CI), %	*P* value	Mean difference in HbA_{1c} in subgroups of interest, CGM vs control
Gandhi et al,[11] 2011	3	128	2	Real-time devices and non-real-time devices	Various	SMBG, variable type and frequency	−0.7 (−1.14 to −0.27)	NA	NA
Poolsup et al,[12] 2013	4	228	2	rtCGM and pCGM	Various	SMBG	−0.31 (−0.6 to −0.02)	.04	pCGM was not superior to SMBG; rtCGM was superior to SMBG
Park et al,[13] 2018	7 Trials and 3 cohort studies	6286	2	rtCGM, pCGM, and isCGM	Various	Usual care/SMBG	rtCGM/pCGM: −0.20 (−0.31 to −0.09)	NA	isCGM demonstrated no statistically significant change (−0.02%; 95% CI, −0.07% to 0.04%)
Janapala et al,[14] 2019	5	374	2	rtCGM/pCGM	Various	SMBG (or other routine methods for monitoring hyperglycemia)	−0.25 (−0.45 to −0.06)	.01	NA
Castellana et al,[15] 2020	2	325	2	isCGM	Insulin (prandial, multiple daily injection, or insulin pump)	SMBG	−0.22 (−0.72 to 0.28)	.38	NA
Maiorino et al,[16] 2020	15	2461	1 and 2 (only 2 trials with type 2 alone and 1 trial with both)	rtCGM and isCGM	Insulin (multiple daily injection or insulin pump)	Usual care	−0.17 (−0.29 to −0.06)	.003	rtCGM: −0.23%; 95% CI, −0.36% to −0.10%; $P < .001$
Di Molfetta et al,[17] 2023	7 Trials and 6 cohort studies	9385	2	pCGM	Various	Usual care	−0.31 (−0.41 to −0.21)	<.001	NA
Ferreira et al,[18] 2024	6	407	2	rtCGM and isCGM	Noninsulin agents only	SMBG	−0.31 (−0.42 to −0.21)	<.01	NA
Jancev et al,[19] 2024	12	1248	2	rtCGM (8 trials) and isCGM (4 trials)	Various	SMBG	−0.31 (−0.43 to −0.19)	<.001	Insulin with or without oral agents: −0.30% ($P = .03$); oral agents alone: −0.29% ($P = .004$); rtCGM: −0.36% ($P < .001$); isCGM: −0.16% ($P = .31$)
Lu et al,[20] 2024	11	1425	2	rtCGM and isCGM	Various	SMBG	−0.31 (−0.45 to −0.18)	<.001	NA
Richardson et al,[21] 2024	25	2996	1, 2, Gestational, and no diabetes	rtCGM, isCGM, and pCGM	Various	SMBG	−0.28 (−0.42 to −0.15)	<.001	NA
Seidu et al,[22] 2024	26	2783	2	rtCGM (17 trials) and isCGM (9 trials)	Various	Usual care/SMBG	rtCGM: −0.19 (−0.34 to −0.04); isCGM: −0.31 (−0.46 to −0.17)	NA	NA
Uhl et al,[23] 2024	14	1647	2	rtCGM (9 trials) and isCGM (5 trials)	Various	SMBG	−0.32 (−0.41 to −0.23)	NA	isCGM: −0.33%; 95% CI, −0.61% to −0.05%; rtCGM: −0.34%; 95% CI, −0.48% to −0.20%; noninsulin medications only: −0.26%; 95% CI, −0.53% to 0.01%
Rizos et al,[24] 2025	19	1968	2	rtCGM (13 trials) and pCGM (6 trials)	Various	SMBG	rtCGM: −0.4 (−0.55 to −0.24); pCGM: −0.35 (−0.5 to −0.2)	NA	NA
Aronson et al,[25] 2025	8	517	2	rtCGM, isCGM, and pCGM	Noninsulin agents only	SMBG/usual care	−0.37 (−0.49 to −0.24)	<.001	isCGM: −0.41%; 95% CI, −0.61% to −0.21%; rtCGM: −0.44%; 95% CI, −0.94% to 0.06%
Bannuru et al,[26] 2025	20	2473	2	rtCGM, isCGM, and pCGM	CGM plus education or feedback (intervention) intended to modify nutrition choices	Standard of care or education/feedback intervention alone	−0.46 (−0.71 to −0.22)	<.001	NA

Abbreviations: HbA_{1c}, hemoglobin A_{1c}; isCGM, intermittently scanned CGM; NA, not applicable; pCGM, professional CGM; rtCGM, real-time CGM; SMBG, self-monitored blood glucose.

[a] For meta-analyses that included trials enrolling participants with type 1 and type 2 diabetes but reported results separately by diabetes type, only the data for participants with type 2 diabetes are included. For trials that enrolled both groups but did not report results separately, combined findings are reported.

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and intervene prior to the onset of inflammation and metabolic disease.[29] However, data on the impact of CGM in people without diabetes is scant.

A systematic review focusing on behavioral outcomes with CGM use synthesized 25 trials, including 3 that enrolled participants with overweight and obesity without diabetes. Although many trials reported 1 or more dietary or physical activity outcomes (with some showing improvement in these outcomes), these measures were too heterogenous to pool. Across multiple studies, there were no statistically significant changes in weight, body mass index, or total energy intake.[21] Overall, sample sizes were small, and few trials directly evaluated the impact of CGM on changes in behavior. One additional trial in 30 adults with prediabetes and overweight or obesity found that real-time CGM lowered the Glucose Management Indicator (an approximation of HbA_{1c} calculated with CGM data) by 0.2% compared with blinded CGM after 30 days (P = .02), without differences in time in range or in caloric intake.[30]

Apart from the evidence on health outcomes, it is important to keep in mind that the accuracy and reliability of CGM measurements may differ between individuals with and without diabetes, and standardized thresholds for normal glucose variability in individuals without diabetes are lacking. Studies have shown discordance between laboratory HbA_{1c} and the CGM-derived Glucose Management Indicator in healthy individuals,[31] and emerging research in healthy adults reveals striking interindividual variability in postprandial glucose responses, even to identical meals.[32] Meal composition (rather than individual ingredients), meal timing, sleep, and physical activity can affect those responses, making it difficult to attribute specific glycemic effects to particular foods or to interpret isolated glucose spikes in a meaningful way.[32] Using such spikes to guide food choices may overstate the importance of day-to-day fluctuations of unclear clinical relevance to healthy people. Dietary restrictions informed by CGM may also carry risk, including adverse nutritional effects, worsening of disordered eating patterns, or increased health-related anxiety. These potential harms remain largely unexamined.[33]

In summary, while CGM offers real-time, personalized feedback that may appeal to health-conscious individuals without diabetes, evidence supporting its use for improving metabolic, psychological, or health outcomes is lacking. Rigorous trials assessing meaningful outcomes for this population, including attention to unintended consequences of continuous self-monitoring, are needed before CGM can be recommended confidently for people without diabetes outside of research settings.

Practical Considerations: When to Use Real-Time CGM in Type 2 Diabetes

Start With the Clinical Problem (Not the Device)

Before offering CGM, clinicians and patients should consider a basic question: what are we trying to achieve, and why? Although achieving more than 70% of time in range (70-180 mg/dL [3.9-10.0 mmol/L]) is a widely used target, it is not inherently meaningful unless it aligns with patient's goals and circumstances. Pursuing specific targets without considering how these advance each patient's situation and priorities can easily drift into care that is increasingly demanding yet unhelpful. Some patients may find it more meaningful to avoid hypoglycemia or reduce the burden of treatment. Patients living with multimorbidity and complex lives may not have the time, energy, or attention to problem solve sensor dysfunctions, deal with sensor alarms, or interrogate the data to identify signals in data patterns. By clarifying purpose at the outset, clinicians can ensure that self-monitoring in general, and CGM use in particular, supports the patient's self-management and well-being rather than adds unnecessary work[34] and that any subsequent interpretation and response align with what matters most to the person wearing the device. This requires envisioning, in conversation, what life with diabetes would be like if the patient were not monitoring, doing so occasionally and strategically using finger-stick glucose measurements, or doing so continuously using CGM.

Patient Groups Most Likely to Benefit

Although decisions about CGM should weigh potential benefits, harms, and burdens for the individual, clinicians should focus on certain patient groups who are more likely to find it favorable to use CGM. Examples include patients testing capillary glucose repeatedly (eg, ≥3 times per day) to optimize the efficacy and safety of their diabetes regimen, including those implementing an intensive insulin treatment program with either multiple daily injections or insulin pumps (including sensor-augmented automatic insulin pump therapy). As demonstrated in trials of patients with type 1 diabetes, patients appreciate the convenience and flexibility afforded by real-time CGM compared with intense capillary glucose self-monitoring.[35]

CGM should also be discussed with patients receiving insulin therapy for whom the risks and consequences of hypoglycemia are particularly salient. This may include patients in high-risk occupations, such as commercial drivers or construction workers, individuals with hypoglycemia unawareness, or select older patients with frailty for whom insulin or sulfonylureas are necessary options and the risk of hypoglycemia is high.

Additionally, CGM could be helpful in patients with type 2 diabetes in whom HbA_{1c} is inaccurate,[36] including patients with severe anemia, such as those with sickle cell disease, advanced chronic kidney disease, and patients receiving frequent blood transfusions. These and other common clinical scenarios are considered in **Table 2**.[37,38]

Using CGM Data in Practice

Getting Usable Data

Fidelity of data collection is crucial prior to attempts at interpretation. Because some patients have limited digital literacy, health systems must provide support to ensure that CGM devices function properly and that data can be reliably shared with clinicians, especially during virtual visits. To use CGM effectively, clinicians and patients should focus on trends rather than isolated values and rely on a sufficient monitoring period to ensure that the data reflect typical circumstances.

Core Metrics to Review

Once adequate data are available, interpretation can begin, keeping in mind the goals of monitoring. An ambulatory glucose profile includes time in range (ie, time spent between 70 and 180 mg/dL [3.9-10.0 mmol/L]) and provides a standard, overall assessment of glycemic control, while time below 54 mg/dL (3.0 mmol/L) signals

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Table 2. Examples of Patient Scenarios With Rationale for Considering Continuous Glucose Monitoring (CGM), Evidence, and Practical Considerations

Patient scenario	Rationale for considering CGM	Evidence strength for glycemic outcomes	Practical considerations/cautions
Person with type 2 diabetes receiving intensive insulin regimen (basal/bolus or insulin pump)	Frequent glucose assessment is required for safe insulin titration; CGM reduces the burden of self-monitoring and can guide insulin dosing, which is essential when implementing automated insulin delivery systems	Modest but consistent HbA_{1c} improvements	Provide orientation to trends vs single readings, manage alarm load, and reduce risk of overcorrection
Person with type 2 diabetes receiving basal insulin with chronic hyperglycemia and sparse or no finger-stick data	CGM can uncover fasting and overnight patterns that self-monitoring misses, supporting more informed basal insulin adjustments	Modest but consistent HbA_{1c} improvements	Intermittent CGM may suffice; ensure interpretation focuses on actionable patterns
Person with type 2 diabetes receiving insulin therapy with limited access to in-person visits, relying on hybrid telemedicine care	Remote access to glucose data can allow clinicians to review patterns efficiently and adjust therapy without frequent in-person visits; this can reduce burden and cost for hourly and low-wage workers who cannot routinely take time off work, as well as for physically disabled or semihomebound older adults	Anecdotal only; limited formal studies	Ensure patients can upload or share data reliably, provide digital support for those with limited technical skills, and telemedicine workflows need to accommodate CGM data review
Person with type 2 diabetes actively requesting CGM to reduce the pain, inconvenience, or low utility of finger-stick monitoring	CGM may facilitate patient participation in self-management and offer clinicians usable data when self-monitoring adherence is low	Modest but consistent HbA_{1c} improvements	Clarify goals, prevent drift toward micromanaging CGM output, and tailor alarms to minimize burden
Person with type 2 diabetes in a high-risk setting (commercial drivers, machinery operators, and construction workers)	CGM can enhance safety through more reliable detection of hypoglycemia during safety-critical activities	Anecdotal/physiologic rationale is strong but limited formal studies; no evidence that CGM reduces severe hypoglycemia	Emphasize detection of hypoglycemia, verify device reliability, and consider occupational regulations
Person with type 2 diabetes receiving insulin or other medications associated with hypoglycemia during Ramadan or other periods of prolonged fast or during periods of considerably reduced caloric intake, such as long dietary phase before and after weight loss surgery	CGM can enhance safety through more reliable detection of hypoglycemia during periods with reduced caloric intake and changed patterns of caloric intake	Recommended by international consensus[37] with strong physiologic rationale; hypoglycemia frequency increases for patients with diabetes observing Ramadan[38]	Prepare ahead of time by adjusting medication regimen appropriately, ensuring proper monitoring of blood glucose during period of altered caloric intake, and providing hypoglycemia precautions
Person with type 2 diabetes and frequent or unexplained hypoglycemia	Continuous data can reveal patterns, triggers, and timing of hypoglycemic episodes better than intermittent capillary self-monitoring	Anecdotal only; no clear evidence that CGM use reduces severe hypoglycemia	Watch for compression lows, adjust therapy conservatively, and reinforce symptom awareness
Person with severe (symptomatic) hyperglycemia or at risk of hyperglycemic or hypoglycemic emergencies at the end of life	CGM can guide the introduction of antihyperglycemic agents in patients with a limited therapeutic window for these drugs	Anecdotal only, based on accounts that CGM reduces burden of finger-stick monitoring to patient, family, or health care personnel; no clear evidence that CGM use reduces severe hyperglycemia or hypoglycemia	Clarify goals, prevent drift toward micromanaging CGM output, adjust therapy conservatively, and tailor alarms to minimize burden
Person without diabetes interested in weight loss and diabetes prevention	User interest is high	Limited data on impact of CGM in this population regarding HbA_{1c}, weight, implementation of healthy habits, or long-term outcomes	Risk of anxiety, diet restriction, and misinterpretation; increased clinician workload; and unclear value

Abbreviation: HbA_{1c}, hemoglobin A_{1c}.

safety concerns that require prompt attention.[39] Because CGM sensors can register false compression lows when pressure is applied to the site during sleep or rest, patients should confirm any unexpected or implausible readings with a glucometer. Time above range helps distinguish between sustained hyperglycemia and isolated postprandial excursions. The Glucose Management Indicator, particularly when the CGM is used consistently for weeks, can be a useful estimator of HbA_{1c}.[40] Measures of glucose variability can reveal inconsistent medication timing, irregular meal patterns, or other behavioral or technical factors that warrant attention. Readers are encouraged to review a recently published primer on CGM for a rapid and thorough introduction to CGM report review and interpretation.[39]

Target ranges and alarm settings should be individualized. Although 70 to 180 mg/dL (3.9-10.0 mmol/L) remains the standard range for most adults, patients with high risk for hypoglycemia may benefit from slightly higher thresholds. On the other hand, excessive alarms can undermine adherence and should prompt review of alarm settings, verification of accuracy with capillary glucose measurements, and consideration of whether alarms reflect meaningful concerns.

Clinicians should also be alert to a subtle shift that can occur with continuous monitoring. What begins as an effort to identify hypoglycemia or clarify patterns can evolve into a focus on hitting specific targets or tidying up the CGM trace. Behavioral science suggests that highly visible, continuously updated metrics draw attention toward optimizing what is measurable, sometimes at the expense of what matters most (eg, full participation in relational, occupational, and social activities). Because CGM displays are immediate and compelling, minor fluctuations can take on disproportionate importance, prompting unnecessary self-correction, medication intensification, or anxiety. Regularly revisiting the purpose of monitoring may help ensure that CGM remains a tool, not a taskmaster.

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Duration of Use

In most cases, 2 weeks of largely complete CGM data are adequate to establish clinically relevant patterns.[41] This duration captures variation across weekdays and weekends, includes a range of meals and activity levels, and generates estimates of time in range and other standardized CGM metrics. Shorter intervals may be useful for troubleshooting a specific concern, but substantive changes in therapy, particularly to address hyperglycemia, should be based on at least a full week of data.

Clinicians and patients should periodically reassess whether CGM continues to offer sufficient benefit to justify its cost and burden. Intermittent use may be preferable in some patients (eg, patients with stable glycemia, receiving regimens at low risk of hypoglycemia, or experiencing monitoring fatigue). Short 2- to 4-week monitoring periods several times per year can provide meaningful insight with less burden. In other cases, CGM may be discontinued entirely when the costs, anxiety, or inconvenience outweigh its value.

Treatment Decisions

Treatment adjustments should be guided by repeated patterns (rather than single instances) in the context of overall goals of therapy. Basal insulin dosing can be increased in response to rising glucose levels overnight and fasting hyperglycemia, or decreased to address decreasing glucose levels overnight or nocturnal hypoglycemia. Prandial insulin can be modified to address excessively large postmeal excursions. Noninsulin therapies, including glucagon-like peptide-1 receptor agonists, sodium-glucose cotransporter 2 inhibitors, and metformin, may help blunt postprandial rises, and CGM can be used to adjust insulin therapy to account for their addition.

Lifestyle Changes

Diet and physical activity counseling can be tailored when CGM reveals meals that consistently produce large glycemic excursions or lows that occur with or following exercise. However, CGM should not become a mandate to dissect the glycemic impact of each meal; such micromanagement risks turning eating into a clinical task rather than a normal part of living.

Device Tolerance

Device tolerance is also an important part of CGM use. Skin irritation, adhesive reactions, and contact dermatitis can occur and be managed by rotating sites, using barrier films, off-label use of topically applied nasal fluticasone,[42] changing adhesives, or switching device models. Severe or persistent reactions may require discontinuation of CGM. Commercially available overpatches can help patients whose sensors frequently dislodge to keep them in place longer.

Considerations for Health Care Systems

Resource Considerations

Health care operates within fixed limits of time, attention, and resources. Every new clinical task, whether collecting data, reviewing it, or acting on it, occupies space that could otherwise be available for something else. Introducing CGM into this ecosystem may offer important benefits, but it also adds new streams of information for physicians, nurses, pharmacists, and diabetes educators to collect, interpret, and respond to. Understanding these trade-offs is essential for assessing when CGM meaningfully supports care and when it risks crowding out other priorities that matter to patients.

Data Integration

Integration of CGM data directly into electronic health records is emerging as a priority to support efficient data sharing and enable data-driven decisions.[43-45] Multiple efforts have demonstrated feasibility and outlined practical approaches to embed CGM data within clinician workflows, overcoming the current reliance on separate manufacturer portals. Across these efforts, common barriers include heterogeneous device platforms, lack of standardized data definitions, and resource requirements for integration, but benefits include consolidated clinical documentation, better access during patient visits, and streamlined clinician workflows.[43,44]

Workload Considerations

For people with type 2 diabetes receiving an intensive insulin regimen, who need to do intermittent capillary testing 3 or more times per day, CGM may save time for both the patient and the clinician. Compared to intermittent capillary testing or to no testing, CGM in most other patients with type 2 diabetes entails a large increase in the volume of information collected. More clinician time will be needed to review and interpret CGM results for some of these monitored patients to experience valuable benefit. An increased workload for clinicians can also be driven by an expansion of glucose monitoring to populations who would not have been selected for intermittent capillary testing, such as people with obesity or people with an interest in optimizing their own health. Even when offered alongside intelligent algorithms or applications designed to support self-management without the participation of health care professionals, the broadening use of CGM in these new populations has the potential to increase workload substantially for clinicians, diverting attention from other issues of importance to these patients during the consultation, while reducing access to potentially higher value care for other patients.

Affordability and Equity Considerations

Despite the benefits of CGM for some patients, its use remains uneven and inequitable. Across multiple studies, including national analyses of US veterans and commercially insured populations, patients who are Black, Hispanic, or of another racial or ethnic minority background who receive insulin are considerably less likely than non-Hispanic White patients to be prescribed CGM, even after accounting for differences in age, comorbidities, or diabetes severity.[46,47] These inequities persist in integrated systems like the Veterans Affairs, where financial barriers are minimized, suggesting that cost alone does not explain the gap.[48] Instead, broader structural forces may underlie these inequities, such as implicit bias, differences in communication during encounters, variability in clinician familiarity or enthusiasm for new technology, and potentially lingering mistrust among patients from marginalized groups.

These inequities complicate the broader narrative around CGM's rapid expansion. As devices become more common among people with type 2 diabetes and even spill into the wellness market, the maldistribution of access may favor both overuse and underuse. Affluent, digitally literate patients are adopting CGM for optimization, while many patients receiving intensive insulin therapy still

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go without. Ensuring that CGM fulfills its clinical promise will require not only better evidence on who benefits most, but also deliberate attention to equitable use.

Conclusions

Evidence from randomized trials shows that CGM produces, on average, a modest reduction in HbA_{1c} of about 0.3% in adults with type 2 diabetes. This average effect likely masks substantial variation, with some patients accruing important reductions in both hyperglycemia and hypoglycemia. For many patients who need to monitor glucose several times a day for optimal self-management, CGM is more convenient and less burdensome than finger-stick testing. Data on CGM use beyond type 2 diabetes remain limited and do not support broad adoption in people with mild forms of dysglycemia or without it. As CGM use expands, shared decision-making is essential to ensure that the technology is used as a response to the patient's problem and that it aligns well with each patient's goals and capacity.[49] Health care systems and clinicians should deploy CGM deliberately, considering practical issues, workload, and attention demands, ensuring that access to CGM and care responsive to the data it produces is equitable so that those most likely to benefit are not left behind.

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