

Tracking Your Blood Sugar: What the Numbers Mean

The Three Key Numbers Every Person with Type 2 Diabetes (T2D) Should Know

Tracking your blood sugar tells you and your doctor whether your diabetes is well managed, how your body responds to food and activity, and whether your treatment is working. The three main numbers are: glycated haemoglobin (HbA1c), fasting blood glucose, and after-meal blood glucose.

1. HbA1c

- **What it is:** a clinic blood test showing your average blood sugar over 2 to 3 months. Think of it as a report card for diabetes control. ^[1]
- **Why it matters:** higher HbA1c means greater risk of eye, kidney, and nerve complications over time. ^[2]
- **Target:** below 7.0% for most adults with T2D. Your doctor may set a personalised target. ^[1]
- **How often:** every 3 to 6 months.



2. Fasting Blood Glucose

- **What it is:** blood sugar taken before eating or drinking in the morning, after at least 8 hours without food. Shows overnight blood sugar control. ^[1]
- **Target:** 80 to 130 mg/dL. ^[1]
- **Above 130 mg/dL:** overnight control may need reviewing. ^[1]
- **Below 72 mg/dL:** low blood sugar (hypoglycaemia)



3. After-Meal Blood Glucose

- **What it is:** blood sugar 1 to 2 hours after your meal. Shows how much blood sugar rose in response to what you ate. ^[2]
- **Why it matters:** repeated large post-meal spikes quietly damage blood vessels, even if your average looks reasonable. ^[2]
- **Target:** below 180 mg/dL at 1 to 2 hours after eating. ^[1]
- **Consistently above target:** review carbohydrate type and amount in that meal and discuss with your care team.

Note: These are general targets. Your personal targets may differ based on age, health conditions, and medications. Always confirm with your diabetes care team.

References

1. American Diabetes Association. Standards of Care in Diabetes—2024. Diabetes Care. 2024;47(Suppl 1):S1–S321.
2. International Diabetes Federation. Guideline for Management of PostMeal Glucose in Diabetes. Brussels: IDF; 2011.

How to Check Your Blood Sugar: Tools, Timing, and Tips

Using a Glucometer at Home

A glucometer measures blood sugar from a tiny drop of blood from your fingertip, giving real-time information no clinic test can match. Your doctor will advise how often to check based on your treatment. ^[1]

When to Check



Before breakfast:

your fasting reading. Tells you how overnight blood sugar control went. ^[1]



1 to 2 hours after a meal:

shows how blood sugar responded to what you ate. Helps identify problem foods. ^[1]



Before and after exercise:

activity can raise or lower blood sugar. Checking keeps you safe. ^[3]



Before bed:

ensures a safe overnight level, especially if you take insulin. ^[1]



When you feel unwell:

shakiness, sweating, or dizziness may mean low blood sugar. Always check.

How to Get an Accurate Reading

- ◆ Wash hands with soap and warm water first. Residual alcohol from swabs affects results. ^[4]
- ◆ Use a new lancet every time. Reusing makes lancets blunt and increases infection risk. ^[4]
- ◆ Prick the side of your fingertip, not the very tip. Rotate fingers to avoid soreness. ^[4]
- ◆ Let a small drop form naturally. Squeezing too hard can give a falsely low result. ^[4]
- ◆ Check strip expiry and storage. Heat and humidity make strips inaccurate.

Continuous Glucose Monitors (CGM)

A CGM sensor worn under the skin checks blood sugar automatically every few minutes, day and night, showing a full picture of glucose movements. ^[1]

Key CGM Terms

- **Time in Range (TIR):** glucose between 3.9–10.0 mmol/L. Target: above 70% of the day. ^[5]
- **Time Below Range (TBR):** below 3.9 mmol/L. Should be under 4% of the day (under 58 minutes). ^[5]
- **Time Above Range (TAR):** above 10.0 mmol/L. Should be under 25% of the day.

Note: Every reading gives useful information. Bring your meter or CGM app data to every appointment. Think of readings as feedback, not judgement.

References

1. American Diabetes Association. Standards of Care in Diabetes—2024. *Diabetes Care*. 2024;47(Suppl 1):S1–S321.
2. International Diabetes Federation. Guideline for Management of PostMeal Glucose in Diabetes. Brussels: IDF; 2011.
3. Colberg SR, et al. Physical Activity/Exercise and Diabetes: ADA Position Statement. *Diabetes Care*. 2016;39(11):2065–2079.
4. BMJ Best Practice. Diabetes mellitus type 2 — monitoring. Updated 2023.
5. Battelino T, et al. Clinical Targets for Continuous Glucose Monitoring Data Interpretation. *Diabetes Care*. 2019;42(8):1593–1603.

Reading the Patterns: What Your Numbers Are Telling You

Your Readings Are Telling You a Story

Checked regularly, patterns emerge as your body's way of communicating. Here are four common patterns in T2D, their likely causes, and what to do. ^[1]

Pattern 1: Morning Readings Regularly High

- **Dawn Effect:** hormones released 4–8am cause the liver to release sugar. People with T2D cannot compensate as easily. ^[2]
- **Overnight rebound:** blood sugar dips at night, hormones push it back up too far. Signs: night sweats or disrupted sleep. ^[2]
- **Medication running out overnight.** ^[1]
- What to do:** a 2–3am reading identifies the cause. A small medication adjustment usually resolves it. ^[1]

Pattern 2: Spikes After Meals

- **Causes:** large portions of refined carbs (white rice, roti, sugary drinks); eating quickly; medication timing. ^[1,3]
- What to do:** swap high-carb items (more vegetables, brown rice). A 10–15 minute walk after eating helps reduce the spike. ^[3]

Pattern 3: Low Blood Sugar (Hypoglycaemia)

Below 70 mg/dL (3.9 mmol/L): treat immediately.
Below 54 mg/dL (3.0 mmol/L): serious emergency. ^[1]

The 15-15 Rule:

- **Step 1:** take 15 g of fast-acting sugar (4 glucose tablets, 150 ml fruit juice, or 3 tsp sugar in water).
- **Step 2:** wait 15 minutes and re-check. Repeat the step 1 if blood sugar level is still below 70 mg/dL.
- **Step 3:** once safe, have a small snack with carbohydrate and protein. ^[1]

Pattern 4: Blood Sugar Swings

Below 70 mg/dL (3.9 mmol/L): treat immediately.
Below 54 mg/dL (3.0 mmol/L): serious emergency. ^[1]

- **Causes:** skipping meals; intense unplanned exercise; alcohol (delayed blood sugar drop); stress or illness; inconsistent medication timing. ^[1,3]
- What to do:** eat and take medications at regular times, keep carbohydrate portions consistent. A CGM can pinpoint when and why swings occur. ^[5]

When to Contact Your Care Team Without Delay

- Blood sugar above 300 mg/dL twice in a row with no known cause. ^[1]
- Blood sugar below 54 mg/dL or a severe low requiring someone else's help. ^[1]
- Vomiting or unable to keep fluids down. ^[1]
- Confusion, rapid breathing, or fruity breath are signs of a serious emergency. ^[1]

References

1. American Diabetes Association. Standards of Care in Diabetes—2024. *Diabetes Care*. 2024;47(Suppl 1):S1–S321.
2. Monnier L, Colette C, Owens DR. The Dawn Phenomenon in Type 2 Diabetes. *Diabetes Care*. 2017;40(7):872–874.
3. Colberg SR, et al. Physical Activity/Exercise and Diabetes: ADA Position Statement. *Diabetes Care*. 2016;39(11):2065–2079.
4. Reynolds AN, et al. Postprandial glycaemia, insulinaemia, and satiety: systematic review. *Nutrition Journal*. 2022;21(1):4.
5. Battelino T, et al. Clinical Targets for Continuous Glucose Monitoring Data Interpretation. *Diabetes Care*. 2019;42(8):1593–1603.