Continuous glucose monitoring (CGM) has been shown to be beneficial for adults with type 2 diabetes using intensive insulin therapy, but its use in type 2 diabetes treated with basal insulin without prandial insulin has not been well studied.

**Objective**

To determine the effectiveness of CGM in adults with type 2 diabetes treated with basal insulin without prandial insulin in primary care practices.

**Methods**

**Participants Eligibility**

- T2D
- Mean age 57
- 50% women
- 53% ethnic/racial minority population
- Treated with basal insulin, without prandial insulin
- Recruited from primary care practices in the US
- A1C range of 7.8%-11.5%

8 month randomized clinical trial

- RT-CGM with blood glucose monitoring (BGM) testing performed as needed (n=116)
- BGM testing performed when fasting and postprandial 1 to 3 times daily (n=59)

The primary outcome was hemoglobin A1c (HbA1c) level at 8 months. Key secondary outcomes were CGM-measured time in target glucose range (TIR) of 3.9 to 10.0 mmol/L, time with glucose level at greater than 13.9 mmol/L, and mean glucose level at 8 months.
Results

Mean HbA1c level decreased from 9.1% at baseline to 8.0% at 8 months in the CGM group and from 9.0% to 8.4% in the BGM group.

-0.4%  
Mean change  
(95% CI, −0.8% to −0.1%); P = .02

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Risk-adjusted difference was significant

| Mean percentage of TIR 3.9-10.0 mmol/L at 8 months | 59% | 43% |
| Mean percentage of time >13.9 mmol/L at 8 months | 11% | 27% |

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- Mean percentage of TIR 3.9-10.0 mmol/L at 8 month was equivalent to 3.6 hours more per day for CGM group
- Mean percentage of time >13.9 mmol/L at 8 months was equivalent to 3.8 hours less per day with glucose >13.9 mmol/L for CGM group

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Key takeaways

Among adults with poorly controlled type 2 diabetes treated with basal insulin without prandial insulin, CGM, as compared with BGM, resulted in significantly lower HbA1c levels at 8 months.

The CGM group reported high rates of satisfaction with CGM and median CGM use was 6.1 days/week over 8 months.

A1C reduction and glycemic improvements in CGM group without a significant increase in insulin doses or non-insulin medications

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