

## Simplified method allows CGM users to leverage trend arrow data

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Endocrine Society experts have developed a streamlined method for using the Dexcom G5 Mobile Continuous Glucose Monitor (CGM) to help individuals with diabetes maintain better control of their glucose levels, according to two perspectives published in the *Journal of the Endocrine Society*.

More than 30 million Americans have diabetes, according to the Centers for Disease Control and Prevention. The condition occurs when the body's ability to process sugar is impaired.

The Endocrine Society recommends CGMs as the gold standard for managing type 1 diabetes. The devices, which can also be useful for people with type 2 diabetes, measure [glucose levels](#) in the fluid between the body's cells every few minutes throughout the day and night. The technology can tell the user whether glucose levels are rising or falling, and monitor trends from the past several hours.

The Dexcom G5 Mobile CGM displays trend arrows to let users know if their glucose levels are rising or falling and to anticipate where glucose level will be in the near future.

"While this information can help CGM users decide how much insulin to take, there is limited data available on how to factor the trend arrows into insulin dose calculations," said one of the papers' authors, Endocrine Society member Grazia Aleppo, M.D., of Northwestern University's Feinberg School of Medicine in Chicago, Ill. "We have developed tables

to help patients easily calculate how these arrows should influence their insulin dose decisions. This new tool will help individuals maintain better control of their glucose levels, while minimizing dangerous glucose fluctuations."

If [blood glucose levels](#) are persistently elevated, they can put a person with diabetes at risk of developing long-term complications such as microvascular disease, which can lead to kidney failure and vision loss. When glucose levels drop below a certain level, an individual can experience hypoglycemia which, based on its severity, can be dangerous or even fatal.

"This new method will make it simpler for healthcare providers to help their patients with diabetes to adjust their insulin doses based upon the trend arrows. In turn, persons with diabetes should receive greater benefit from the CGM and the trend data collected by the device," said one of the authors, Lori M. Laffel, M.D., M.P.H., of Joslin Diabetes Center and Harvard Medical School in Boston, Mass. "It will help individuals maintain their glucose levels within target range, rather than experience substantial variation between highs and lows."

The experts created one table of insulin dose adjustments for adults and a separate one for children and adolescents. The method provides suggested dose adjustments in insulin units to simplify calculations for CGM users. The tables were developed based on an individual's insulin sensitivity. In other words, the lower the sensitivity to insulin, the greater the recommended dose adjustment.

Previous approaches to using the trend arrows required complex calculations, such as knowing precise amounts of food consumed during a meal, then adding a percentage of the dose to account for the rate of change arrows. Other approaches included adding predetermined values to [glucose](#) levels and were of limited use to CGM users on insulin pens,

who can only adjust their insulin doses in pre-defined increments. The Society sought to refine existing approaches to address these challenges while accounting for both pediatric- and adult-aged persons with [diabetes](#), displaying a wide range of [insulin](#) sensitivities.

**More information:** Grazia Aleppo et al. A Practical Approach to Using Trend Arrows on the Dexcom G5 CGM System for the Management of Adults With Diabetes, *Journal of the Endocrine Society* (2017). [DOI: 10.1210/js.2017-00388](https://doi.org/10.1210/js.2017-00388)

Lori M Laffel et al. A Practical Approach to Using Trend Arrows on the Dexcom G5 CGM System to Manage Children and Adolescents With Diabetes, *Journal of the Endocrine Society* (2017). [DOI: 10.1210/js.2017-00389](https://doi.org/10.1210/js.2017-00389)

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