# CGM alarms often not set to alert children with diabetes to harmful blood glucose fluctuations

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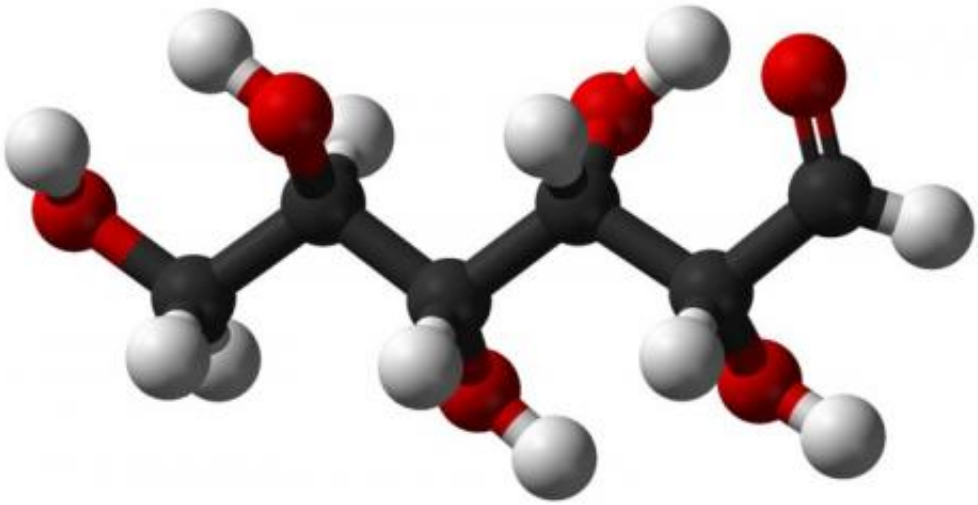

Glucose C6H12O6. Credit: Wikipedia.

Children and teenagers who use continuous glucose monitors (CGM) to manage diabetes often fail to use the appropriate alarm settings to alert to dangerously low or harmful high blood sugar levels, according to a study being presented Thursday at ENDO 2023, the Endocrine Society's annual meeting in Chicago, Ill. This variability makes the monitors less useful in tracking glucose levels.

Children with diabetes employ a large range of CGM alarm settings and cutoffs, many of which differ significantly from recommended values. The study found it was more common for patients and parents to set fewer alarms than recommended, according to researcher Victoria Ochs of Indiana University School of Medicine.

Ochs said that ensuring CGM alarm best practices are followed will help children with diabetes and their caregivers get needed real-time glycemic data while minimizing alarm fatigue.

"Patients make their alarm glucose thresholds too sensitive, so they learn to tune out the alarms, similar to the way we tune out a phone that has been ringing or a car maintenance alarm," she said.

Continuous glucose monitors automatically tracks glucose levels throughout the day and night. They allow a person to see their glucose level anytime at a glance. A person using CGM can also review how glucose changes over a few hours or days to see trends. Seeing glucose levels in real time can help with making more informed decisions throughout the day about how to balance food, physical activity and medicines, including insulin.

It is important to keep blood glucose levels in the targeted range. Over time, high blood glucose levels can harm blood vessels, the heart, kidneys, eyes and nerves and lead to serious health problems. Dangerously low blood glucose levels, or hypoglycemia, can lead to seizures, coma or even death.

CGMs offer customizable alarms that can be adjusted to provide glucose information to patients and caregivers. However, few data exist on how real-time CGM alarms are used in large clinical pediatric populations.

This study included 150 children and teenagers with diabetes using

Dexcom G6 continuous glucose monitoring devices at a large pediatric diabetes center. The researchers evaluated summaries printed from the devices that indicated alarm use and settings over two weeks.

The data revealed children with diabetes and their parents use a large range of alarm settings and values for notification. Only 87 percent of the study participants had set low alarm alerts, and 73 percent had set high alarm alerts. There were often significant differences between patients' settings and recommended values. Children using insulin pumps and patients under age 12 years were more likely to employ alarms.

"Overall, the wide variability of observed alarm settings indicates likely educational gaps in CGM onboarding and use," Ochs said. "This study shows that there is both the opportunity for the diabetes health care team to mention alarm use best practices during onboarding and to continue to message and work with patients and families to optimize use on an ongoing basis."

Ochs is scheduled to present at the Society's ENDO 2023 hormones and technology news conference at 9 AM Central on Saturday, June 17.

**More information:** Conference livestream at endomediastream.com.

Provided by The Endocrine Society

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