

ADA lowers target HbA1C levels for children with type 1 diabetes

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Diabetes is characterized by elevated levels of sugar or glucose (hyperglycemia) in the blood. This occurs due to the lack of the hormone insulin in type 1 diabetes, and to reduced insulin levels in combination with insulin resistance in type 2 diabetes. A recent review of data supports stricter control of hemoglobin A1C levels (HbA1C) among pediatric patients with T1D. This review was led by Dr. Maria J. Redondo, pediatric endocrinologist at Texas Children's Hospital and professor at Baylor College of Medicine, in collaboration with Dr. Sarah Lyons, pediatric endocrinologist at Texas Children's and assistant professor at Baylor College of Medicine, along with other leading endocrinologists and diabetes experts across the U.S.

This article, published in the journal *Diabetes Care*, presents the evidence used by Redondo and her colleagues at the American Diabetes Association (ADA) Professional Practice Committee to issue the new guidelines for optimal A1C in children with T1D in January 2020. This review is intended to increase awareness, present the strong evidence that was used to issue the new recommendations

and to reassure caregivers and family medicine practitioners of the safety of this approach. The ADA's 2021 A1C guidelines will remain the same as the guidelines mentioned in this review, which were set forth this year.

The review highlights mounting evidence that shows chronically elevated levels of blood glucose can cause several detrimental effects including abnormal brain development, increased [heart problems](#) (e.g. coronary or peripheral heart diseases, stroke), other diabetes-related complications (e.g. diabetic nephropathy, neuropathy and retinopathy), and mortality rates in children and adolescents with T1D. All of these are reasons for stricter HbA1C control among these patients.

Based on this, the ADA's 2020 Standards of Medical Care now recommends most children with T1D should strive for less than 7% HbA1C levels, instead of 7.5%, as per their 2019 guidelines. They also provide distinct guidelines for patients with other predisposing factors or health status.

"Until recently, there was a mistaken belief that sugar fluctuations in pre-pubescent children do not cause any long-term harm. However, it is increasingly evident that is not true. Moreover, studies show intensive insulin therapy that strives to bring sugar levels close to the normal range, beyond what is needed for controlling hyperglycemia, is the best to reduce the risk of most acute and long-term organ damage and diabetes-related complications in T1D children and teens. However, these stringent measures are not always practiced by caregivers of T1D patients or diabetes providers due to concerns and fear that it may cause sudden or dramatic drops in sugar levels. Historically, lower A1C levels was associated with increased risk of hypoglycemia, which led to guidelines with higher glycemic targets among youth," Redondo said.

Hypoglycemia is accompanied by a host of symptoms including dizziness and can cause serious complications such as seizures, coma and brain damage. The review presents several lines of evidence supporting the fact that incidences of hypoglycemia have been declining in T1D children over the past three decades. Additionally, they found the link between lower glucose targets and hypoglycemia risk has weakened over the past 15 years.

"We now know more about the risk factors for hypoglycemia and how to prevent it. In addition, new innovations such as the development of insulin analogs, and diabetes technologies—such as continuous glucose monitoring, insulin pumps and integrated systems—now allow caregivers and patients to measure and regulate sugar levels in relatively pain-free ways. These have also made it more feasible to maintain glucose levels within a pre-specified target A1C range. This is why, based on overwhelming emerging evidence, the ADA has revised its HbA1C targets several times through the years. It is important to note that these [new guidelines](#) reflect similar guidance issued by other diabetes societies worldwide," Redondo said.

As per ADA's 2020 guidance, a higher target A1C of

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