

Embargoed until Sunday, June 22, 2025 at 1:30 PM CT

Inhaled Insulin Shown as a Safe and Effective Replacement for Standard-of-Care in Children with Type 1 Diabetes

Findings Highlight Potential for Novel Approach to Insulin Delivery in Pediatric Population

CHICAGO, IL. (June 22, 2025) - Today, a new study demonstrates inhaled insulin as a safe and effective replacement for rapid-acting meal insulin in children with type 1 diabetes. Results from the INHALE-1 study were presented today as a symposium at the 85th Scientific Sessions of the American Diabetes Association® (ADA) in Chicago.

In the U.S., 304,000 children and adolescents have type 1 diabetes and depend on ongoing insulin treatment to regulate their blood glucose levels. Although most manage their condition through daily injections or insulin pumps, there is a growing demand for next-generation, tailored treatment approaches.

INHALE-1 evaluated the safety and efficacy of an inhaled insulin regimen (Afrezza) as a replacement for rapid-acting meal insulin in children with type 1 diabetes. The study included 230 patients aged 4–17, using basal injected insulin and randomized to either inhaled insulin or rapid-acting analogue for meals. The primary endpoint was the change in A1C at 26 weeks.

The findings indicate that inhaled insulin is safe and effective in children with type 1 diabetes, demonstrating glycemic control comparable to injected rapid-acting insulin. Inhaled insulin was also associated with less weight gain and slightly higher patient and parent preference scores.

“Inhaled insulin is the fastest acting insulin available and is a valuable alternative to injected analogue insulin. Afrezza should be available as an option to all children and adults with type 1 diabetes,” said Michael J. Haller, MD, MS-CI, professor and chief of pediatric endocrinology, University of Florida, and lead author of the study. “These results will help clinicians better tailor treatment plans, ultimately improving patient satisfaction and overall outcomes.”

Building on the findings of the inhaled insulin study, they are looking ahead to potential FDA approval and additional studies to evaluate inhaled insulin at diagnosis and in automated insulin delivery systems.

Research presentation details:

Dr. Haller will present the findings of, Discovery to Treatment—Latest Updates on Inhaled Insulin Treatment, at the following symposium:

- Symposium: Future Ready—Breakthroughs in Pediatric Type 1 Diabetes Care
- Presented on Sunday, June 22 from 1:30–3:00 p.m. CT

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About the ADA's Scientific Sessions

The ADA's 85th Scientific Sessions, the world's largest scientific meeting focused on diabetes research, prevention, and care, will be held in Chicago, IL on June 20-23. Thousands of leading physicians, scientists, and health care professionals from around the world are expected to convene both in person and virtually to unveil cutting-edge research, treatment recommendations, and advances toward a cure for diabetes. Attendees will receive exclusive access to thousands of original research presentations and take part in provocative and engaging exchanges with leading diabetes experts. Join the Scientific Sessions conversation on social media using #ADASciSessions.

About the American Diabetes Association

The American Diabetes Association (ADA) is the nation's leading voluntary health organization fighting to end diabetes and helping people thrive. This year, the ADA celebrates 85 years of driving discovery and research to prevent, manage, treat, and ultimately cure—and we're not stopping. There are 136 million Americans living with diabetes or prediabetes. Through advocacy, program development, and education, we're fighting for them all. To learn more or to get involved, visit us at diabetes.org or call 1-800-DIABETES (800-342-2383). Join us in the fight on Facebook ([American Diabetes Association](https://www.facebook.com/AmericanDiabetesAssociation)), Spanish Facebook ([Asociación Americana de la Diabetes](https://www.facebook.com/AsociaciónAmericanaDeLaDiabetes)), LinkedIn ([American Diabetes Association](https://www.linkedin.com/company/AmericanDiabetesAssociation)), and Instagram ([@AmDiabetesAssn](https://www.instagram.com/AmDiabetesAssn)). To learn more about how we are advocating for everyone affected by diabetes, visit us on X ([@AmDiabetesAssn](https://twitter.com/AmDiabetesAssn)).