Study showed MiniMed™ 780G system achieved ADA-recommended time-in-range goals even on days users forgot to bolus

GALWAY, Ireland, Jan. 7, 2026 /PRNewswire/ -- A new real-world retrospective analysis published in*Diabetes Care* showed that users of the MiniMed™ 780G system achieved American Diabetes Association (ADA) recommended goals for time-in-range (TIR)– even on days when mealtime boluses were missed. CareLink™ data showed that the studied user population achieved 76.3% TIR on missed bolus days when using SmartGuard™ technology with recommended optimal settings (100 mg/dL glucose target; two-hour active insulin time). The study investigated off-label user behavior as the system labeling requires users to announce meals when using SmartGuard™ technology. Deliberately not bolusing is an unapproved use of the device and is not recommended. While meal announcement is required, this study highlights the importance of optimized settings, especially when some users occasionally missed boluses.

Mealtime burden

Mealtimes are one of the biggest challenges for people living with type 1 diabetes and frequently linked to diabetes distress.[1,2] The constant need for decision-making and mental load around calculating carbohydrates and insulin requirements at mealtimes contributes to the overall burden of the condition. Missed boluses can significantly impact diabetes management and glycemic outcomes. A 2024 study published in *Diabetes Technology & Therapeutics* found that children and adolescents using AID systems missed an average of 2.2 boluses per day, with each additional missed bolus reducing TIR by nearly 10%.[3]

"While labeling requires meal bolusing for all automated insulin delivery systems, including the MiniMed™ 780G system, missed boluses are a reality in real-world use," said Jennifer McVean, MD, Senior Medical Affairs Director, Medtronic Diabetes, and lead investigator of the study. "Using real-world CareLink™ data, this analysis showed that when using recommended optimal settings, 71.2% of MiniMed™ 780G system users studies achieved ADA-recommended TIR goals on days when meal boluses were missed."

While announcing meals is required per the labeling of the MiniMed™ 780G system, the algorithm adjusts the delivery of insulin every five minutes based on sensor readings to auto-correct† glucose levels—providing support when boluses are occasionally missed or carbohydrates are underestimated. The MiniMed™ 780G system is not approved for no bolusing for meals.

Study Design & Key Findings

The study retrospectively analyzed real-world global CareLink user data (N=369,467) of those using the MiniMed™ 780G insulin pump with a compatible Medtronic sensor‡ who experienced at least 10 days without bolusing (N=54,553) betweenJanuary 2, 2020 to March 31, 2025.

The analysis compared glycemic outcomes on missed bolus days with (N=12,723) and without (N=41,830) use of the recommended optimal settings. Those using the recommended optimal settings achieved significantly better outcomes than those using other settings in all age groups, including both type 1diabetes and type 2 diabetes populations:

- TIR: 76.3% recommended optimal settings vs. 69.3% for non-recommended optimal users
- Mean Sensor Glucose: 149 mg/dL vs. 160 mg/dL
- Glucose Management Indicator: 6.9% vs. 7.1%
- More than 61% of recommended optimal setting users met all three of the ADA recommended glycemic targets on missed bolus days compared to 36.6% in users of other settings

"These findings underscore the advanced capabilities of the MiniMed™ 780G system and its potential to ease the daily burden of diabetes care," said Que Dallara, EVP and President of Medtronic Diabetes. "Our goal is to empower people with technology that adapts to their lives, even when things don't go as planned."

† Refers to auto correct, which provides bolus assistance. Can deliver all auto correction doses automatically without user interaction, feature can be turned on and off.

§ Refers to SmartGuard™ feature. Individual results may vary.

‡ "CareLink Personal" data from January 2020 to March 31, 2025 were extracted from global MiniMed™ 780G system users who provided consent. Users with ≥10 days of sensor glucose data before automation and users with ≥10 days of sensor glucose data after advanced hybrid closed loop (AHCL) initiation were included in analyses. A "No Bolus" population was defined as users who did not administer boluses for ≥10 days; and only those days without user-initiated boluses were analyzed. These days were not required to be consecutive. The datasets included individuals who self-reported age (i.e. ≤15, 16-28, 29-42, 43-55, ≥56 years) and diagnosis of type 1 diabetes (T1D) or type 2 diabetes (T2D).

1 Bergenstal RM, et al. Exploring the Burden of Mealtime Insulin Dosing in Adults and Children With Type 1 Diabetes. Diabetes Care. 2021; Published online.

2 Monaghan M, Herbert LJ, Wang J, Holmes C, Cogen FR, Streisand R. Mealtime behavior and diabetes-specific parent functioning in young children with type 1 diabetes. Health Psychol. 2015 Aug;34(8):794-801. doi: 10.1037/hea0000204. Epub 2015 Feb 9. P

3 Laugesen C, et al. Impact of Missed and Late Meal Boluses on Glycemic Outcomes in Automated Insulin Delivery-Treated Children and Adolescents with Type 1 Diabetes. *Diabetes Technol Ther*. 2024;26(12):897-907.

About the Diabetes Business at Medtronic
Medtronic Diabetes is on a mission to make diabetes more predictable, so everyone can embrace life to the fullest with the most advanced diabetes technology and always-on support when and how they need it. We've pioneered first-of-its-kind innovations for over 40 years and are committed to designing the future of diabetes management through next-generation sensors (CGM), intelligent dosing systems, and the power of data science and AI while always putting the customer experience at the forefront.

About Medtronic
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