

# Evaluation of long-term glycemic outcomes by ethnicity in adults with type 1 diabetes using Control-IQ technology

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## Introduction

Despite increasing prevalence of T1D in ethnic minorities, they remain underrepresented in research studies evaluating diabetes technologies.

Experiences of diverse cohorts are essential to assessing acceptability of diabetes devices.

The Control-IQ Observational (CLIO) study is an IRB-approved, single-arm, longitudinal study evaluating real-world use of Control-IQ technology in diverse groups of people with T1D (PWT1D) from the United States (NCT04503174).

## Aim

To examine glycemic outcomes by ethnicity in adult participants who had completed the 12-month CLIO study.

## Method

We evaluated relationships between ethnicity, baseline HbA1c, Glucose Management Indicator (GMI) derived from CGM data, sensor Time in Range (TIR) (70-180 mg/dL) and sensor time below range (<70 mg/dL) for adult CLIO participants.

Adult participants (≥18 years) who had ≥75% overall CGM use during their 12 months as part of the study were included in the analysis.

Outcomes were analyzed using a Wilcoxon test.

## Results

**Overall:** Study sample included 1,045 adults of various ethnicity (921 White, 74 Latino, 34 Black, 16 Asian).

**Glycemic control:** Black participants reported the highest baseline HbA1c

(median=8%, IQR=7-8.6) followed by Latino participants (7.3%, 6.8-8.4) (Figure 1). Glucose Management Indicator (GMI) at study end reflected glycemic improvements for all participants with Black adults showing a clinically relevant 0.7% overall reduction (7.3%, 6.9-7.6) (p<0.001).

**Sensor Time in Range (TIR):** TIR at 12 months ranged from 65% [57-71] for Black participants to 73% [63-81] for the White cohort (Table 1).

## Conclusions

Results confirm long-term glycemic improvements for adults with T1D across diverse ethnicities using Control-IQ technology.

Further evaluation of glycemic disparities that persist within these ethnic groups is recommended to help inform patient support systems for improved benefits with diabetes technologies.

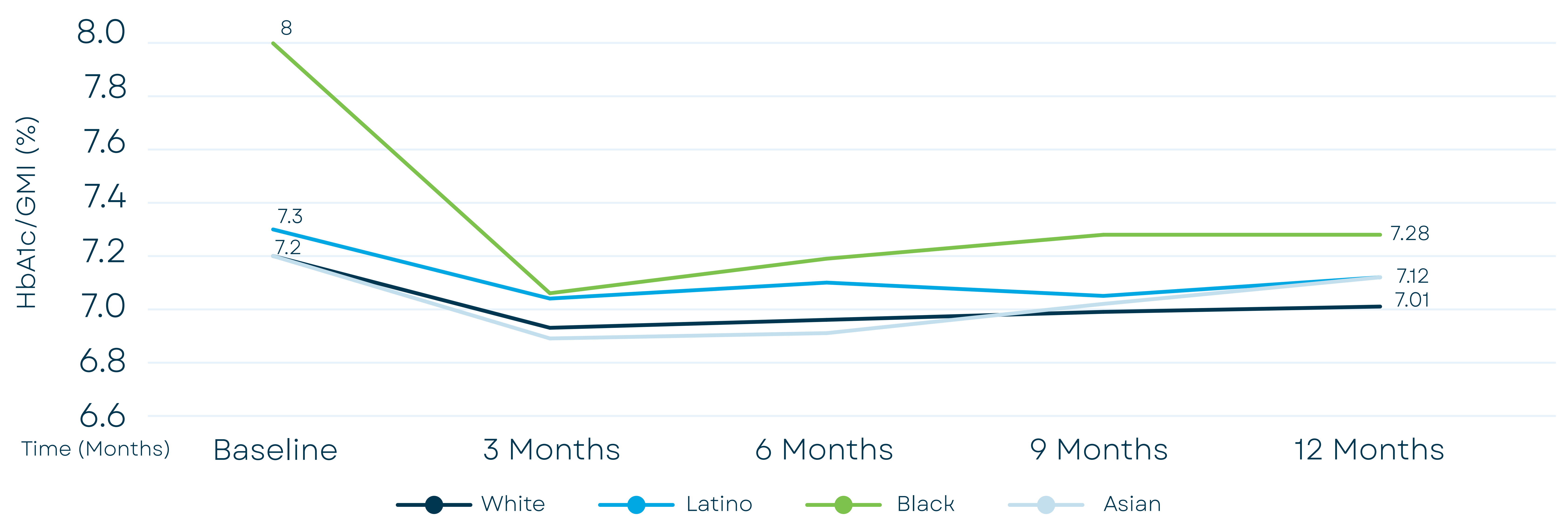
TABLE 1

Sensor Time in Range (70-180 mg/dL) and Time Below Range (<70 mg/dL) after 12 months of using the t:slim X2 insulin pump with Control-IQ technology for adult CLIO participants by ethnicity

Participant ethnic cohort	n	Sensor Time in Range post Control-IQ technology (median, IQR)	Sensor Time Below Range post Control-IQ technology (median, IQR)
White	921	73% (63-81)	1.1% (0.4-2.1)
Latino	74	70% (60-78)	1.3% (0.4-2.6)
Black	34	65% (57-71)	1.5% (0.7-2.3)
Asian	16	72% (66-79)	1.3% (0.7-2.3)

FIGURE 1

Comparison of baseline HbA1c and GMI at 3, 6, 9 and 12 months based on ethnicity for adult participants in the CLIO study.



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