



# Medical Outcomes





Measuring medical outcomes is not only useful to clinicians, but it is a way to monitor the impact of services provided directly to patients. The following studies show data and clinical outcomes of people living with diabetes that have used mySugr to proactively manage their diabetes. The results of these studies highlight increased blood glucose management through the use of the mySugr application - ultimately, resulting in improved quality of life for those living with diabetes.

The focus of these studies was to highlight findings from real world observations of changes in glycemic management and patient engagement associated with the use of a mHealth application. The benefit to this approach is that real world observational studies help to document the benefits and challenges of treatment in a wider population and to determine whether patients in routine practice are achieving expected outcomes.



# Retrospective Analysis of Impact on SMBG and Glycemic Control of Mobile Health (mHealth)-Application for Diabetes Management

## Objective

This study investigates the potential impact of using the mySugr app on self-monitoring blood glucose control.

## Analysis



Number of users:  
**2,104**



Engagement:  
**Logging frequency  
very high**  
( $\geq 5$  days/week)



Time period:  
**6 Months**



Diabetes Type:  
**T1D**

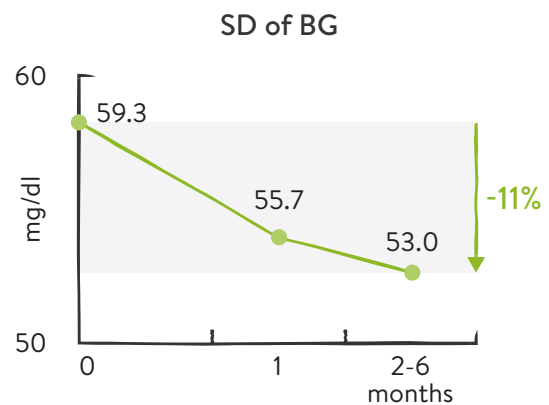
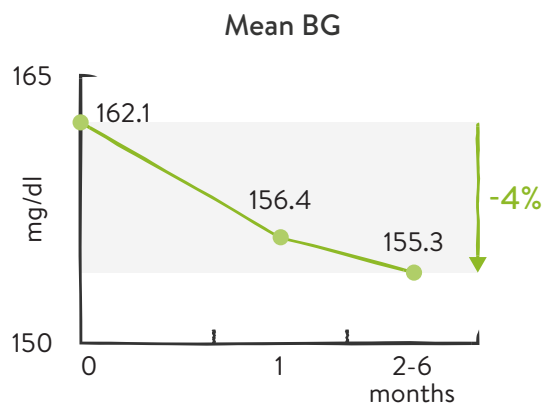


Age:  
 **$34.5 \pm 16.1$**



Gender:  
**45.8% Female  
54.2% Male**

Changes in mean blood glucose (BG) and standard deviation (SD) were analyzed at baseline, month 1, and months 2-6.



## Key Findings

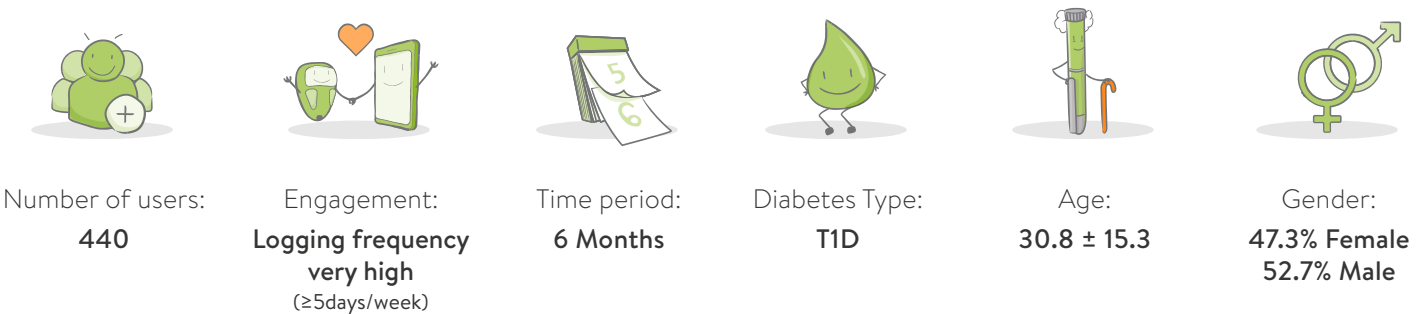
- The mean blood glucose decreased on average more than 4% and its standard deviation 11% after six months of app usage.
- This corresponds to an **absolute reduction of eHbA1c by 0.3%** in an already well-controlled population.

## Significant Improvement of Blood Glucose Control in a High Risk Population of Type 1 Diabetes Using a Mobile Health App – A Retrospective Observational Study

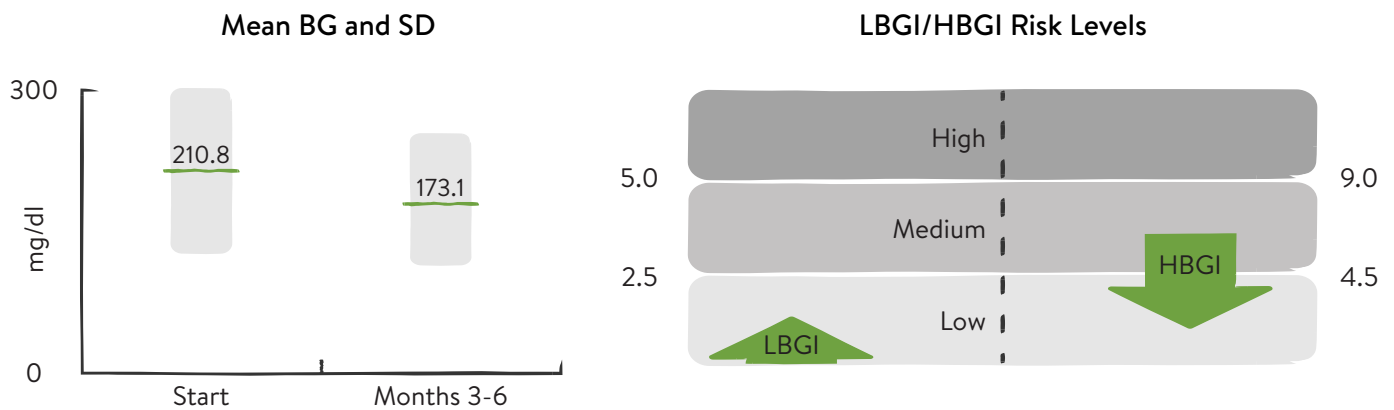
### Objective

This study investigates the potential impact of using the mySugr app on diabetes management for a high risk population. It is focused on users with an initial estimated HbA1c (eHbA1c) of at least 8%.

### Analysis



Changes in mean blood glucose (BG) and its standard deviation (SD) were analyzed at baseline and months 3-6. Additionally, the low blood glucose index (LBGI) and the high blood glucose index (HBGI) were investigated. Those parameters indicate risk levels for hypoglycemia and hyperglycemia, respectively.



### Key Findings

- After six months we see an improvement in mean BG that corresponds to an absolute decrease of the **eHbA1c by 1.3%** (from 9.0% to 7.7%).
- The slight increase in LBGI typically corresponds to the **decrease in HBGI**.

# High Risk Population Using Mobile Logging Application Shows Significant Reduction in LBGI

## Objective

This analysis of real world data looks into the impact of using the mySugr app on the occurrence and severity of hypoglycemia.

## Analysis



Number of users:  
**457**



Engagement:  
**Logging frequency  
very high**  
(≥5days/week)



Time period:  
**6 Months**



Diabetes Type:  
**T1D**

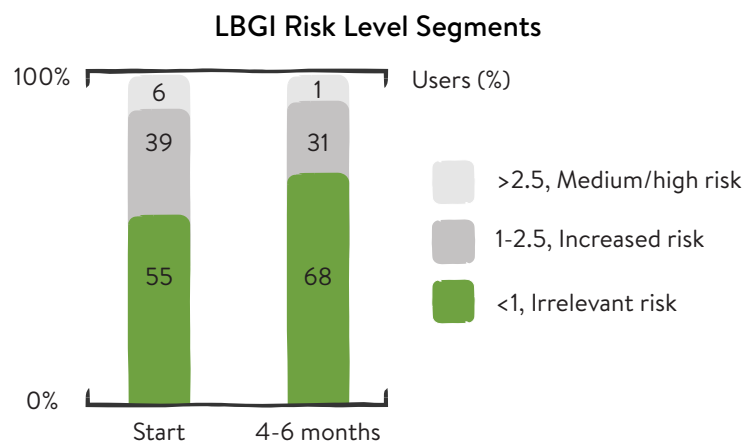


Age:  
**35.5 ± 15.6**



Gender:  
**49.7% Female**  
**50.3% Male**

Users with higher risk of hypoglycemic events, represented by the low blood glucose index (LBGI) at the first three days of using mySugr were retrospectively selected and assessed at months 4-6.



## Key Findings

- There was a consistent shift of users towards an **irrelevant LBGI risk level** (+13%).
- The average **LBGI decreased by 17.4%** after six months.
- There were **no differences regarding nationalities or gender observed**.

# Clinically-Relevant Improvement in Quality of Blood Glucose Control in Well-Controlled Users of mySugr's Mobile Diabetes Management Tool

## Objective

This study shows the impact of the mySugr bundle on parameters of blood glucose control of users based in the United States.

## Analysis



Number of users:  
**52**



Engagement:  
**Logging frequency  
very high**  
(≥3times/day)



Time period:  
**4 Months**



Diabetes Type:  
**55.8% T1D**  
**36.5% T2D**  
**7.7% Other**



Location:  
**United States**

Parameters of blood glucose control such as mean blood glucose (BG), standard deviation (SD), estimated HbA1c (eHbA1c), tests within the target range (TelR) of 70mg/dl and 180mg/dl as well as number of tests per day were analysed 2 months before and after users received the mySugr bundle.

	Before	After
Mean BG (mg/dl)	154.3	138.2 ↓
SD of BG (mg/dl)	55.5	50.3 ↓
eHbA1c (%)	6.7	6.3 ↓
Tests in range (%)	64.5	73.0 ↑
Test frequency (tests/day)	5.8	6.2 ↑

## Key Findings

- All of the analysed **parameters of blood glucose control improved** within 4 months (2 months after users received the bundle).
- A subgroup with a **higher eHbA1c of at least 6.7%** at baseline showed even **stronger results** (e.g. reduction of eHbA1c by 1.1%).

# Sustainable Improvement in Quality of Blood Glucose Control in Users of mySugr's Integrated Diabetes Management Solution

## Objective

This study is an update of our previous work and shows long-term effects of the mySugr bundle on parameters of blood glucose control of users based in the United States.

## Analysis



Number of users:  
**61**



Engagement:  
**Logging frequency  
very high**  
(≥3times/day)



Time period:  
**6 Months**

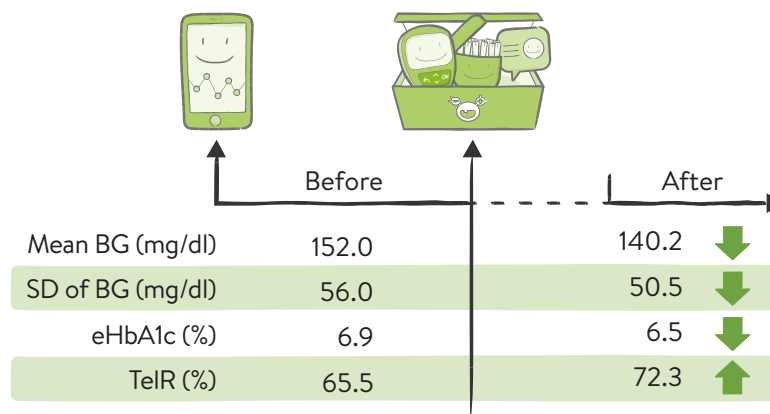


Diabetes Type:  
**59.0% T1D**  
**32.8% T2D**  
**8.2% Other**



Location:  
**United States**

Parameters of blood glucose control such as mean blood glucose (BG), standard deviation (SD), estimated HbA1c (eHbA1c), tests within the target range (TelR) of 70mg/dl and 180mg/dl as well as number of tests per day were analysed 2 months before and 4 months after users received the mySugr bundle.



## Key Findings

- There is significant and **sustainable improvement** on parameters of BG control after 6 months (4 months after users received the bundle)
- The **test frequency** rose on average by **+21.4%**
- A subgroup analysis showed the **strongest improvement for users** who start with an eHbA1c between 7.1% and 10.6% (e.g. reduction of eHbA1c by 1.5%).

# Mobile health application usage shows long-term improvement on blood glucose control

## Objective

This study analyses if there is a sustainable and clinically relevant effect on diabetes self-management by using a mobile app on a long-term scale. Moreover, we wanted to find out which user group benefits most from using the app for one year.

## Analysis



Number of users:  
**5751**



Engagement:  
**≥ 2 Logs/day**  
**≥ 14 days/month**



Time period:  
**12 Months**

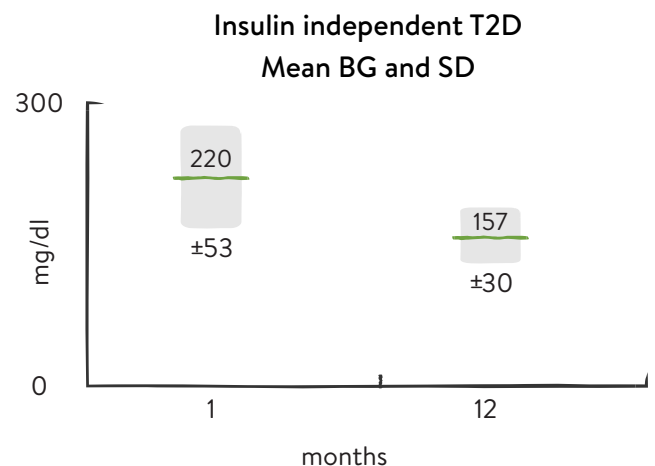
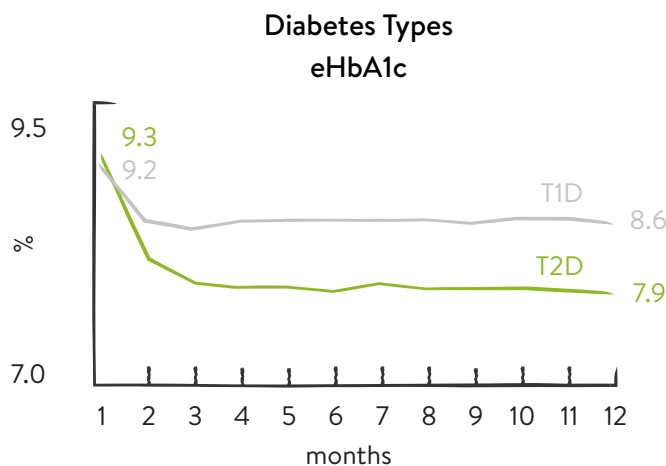


Diabetes Type:  
**50.1% T1D**  
**45.3% T2D**  
**4.6% Other**



Location:  
**Global**

We applied an additional inclusion criterion of estimated HbA1c (eHbA1c) ≥8% at Baseline to show the potential improvement over 12 months. Changes in mean blood glucose (BG), standard deviation (SD) and eHbA1c were analysed in different subgroups divided by diabetes type and therapy type.



## Key Findings

- People with T2D show a stronger decrease in eHbA1c than with T1D
- Strongest decrease in eHbA1c for insulin independent people with T2D (-2.17%)
- Reduction of variability shown by SD and CV after 12 months



# Used Abbreviations

<b>BG</b>	Blood glucose
<b>CV</b>	Coefficient of variability
<b>eHbA1c</b>	Estimated hemoglobin A1c
<b>HBGI</b>	High blood glucose index
<b>LBGI</b>	Low blood glucose index
<b>RWD</b>	Real world data
<b>SD</b>	Standard deviation
<b>SMBG</b>	Self-monitoring of blood glucose
<b>T1D</b>	Type one diabetes
<b>T2D</b>	Type two diabetes
<b>TeIR</b>	Tests in range

## The mySugr App and Bundle

The mySugr app simplifies life with diabetes, making it quick and easy to collect relevant therapy data in one place through a growing number of connected devices, integrations and manual entry. As of January 2020, the app is available in 79 countries and 24 languages. Our company is a medical device manufacturer with ISO 13485 certification. The mySugr Logbook is registered as a class I medical device in the EU and is available as an exempt device under FDA regulation in the United States.



The mySugr bundle is our all-in-one solution for people with diabetes to support their daily therapy management. It includes unlimited test strips, a blood glucose meter, the mySugr pro app and diabetes coaching and is currently available in the US and Germany.

# About mySugr

mySugr envisions a world where a person with diabetes can live a full and healthy life, freed from worrying about the daily grinds of their therapy. Since 2012, mySugr has been driven by people with diabetes who are committed to making diabetes suck less through its app-based diabetes care solution. A part of Roche since 2017, mySugr has offices in Vienna and San Diego, CA. The company has over 2M users in 79 countries worldwide and continues to grow.

The scientific approach applied at mySugr and its medical and research department, be it diabetology, algorithms or psychology, is aimed at improving the lives of people with diabetes. Together with partners across the globe, we explore and communicate the impact mySugr is having as well as new ways and methods to make diabetes suck less.

Learn more at <https://www.mysugr.com/en/science-and-research/>  
or contact us at: [johanna.kober@mysugr.com](mailto:johanna.kober@mysugr.com)