

## Introduction

High Glycemic Variability (GV) and high blood glucose average is a key risk factor in the presence of Diabetes<sup>1</sup>. Frequent glucose fluctuations may not only contribute to increase in the average blood glucose, but also favors the development of chronic Diabetes complications. Glycemic variability is an independent risk factor for diabetes complications, particularly cardiovascular disease<sup>2</sup>. Dario™ provides a digital Diabetes management system that may assist patients to achieve better control on their Diabetes by improving their blood glucose average and improving their GV.

## Method

A retrospective data evaluation study was performed on the Dario™ database. A population of T2D high-risk patients (blood glucose measurements average (GM<sub>avg</sub>) >180 mg/dL) measuring more than 20 times in the first 30 days (analysis baseline) was evaluated on days 60-90 (3 months) and 150-180 days (6 months). Standard deviation (SD) and GM<sub>avg</sub> were calculated and compared to the baseline. For routine clinical practice, it is likely that the SD obtained using either SMBG or CGM will be able to permit the assessment of changes in GV with time<sup>3</sup>.

### Glucose Variability Reduction

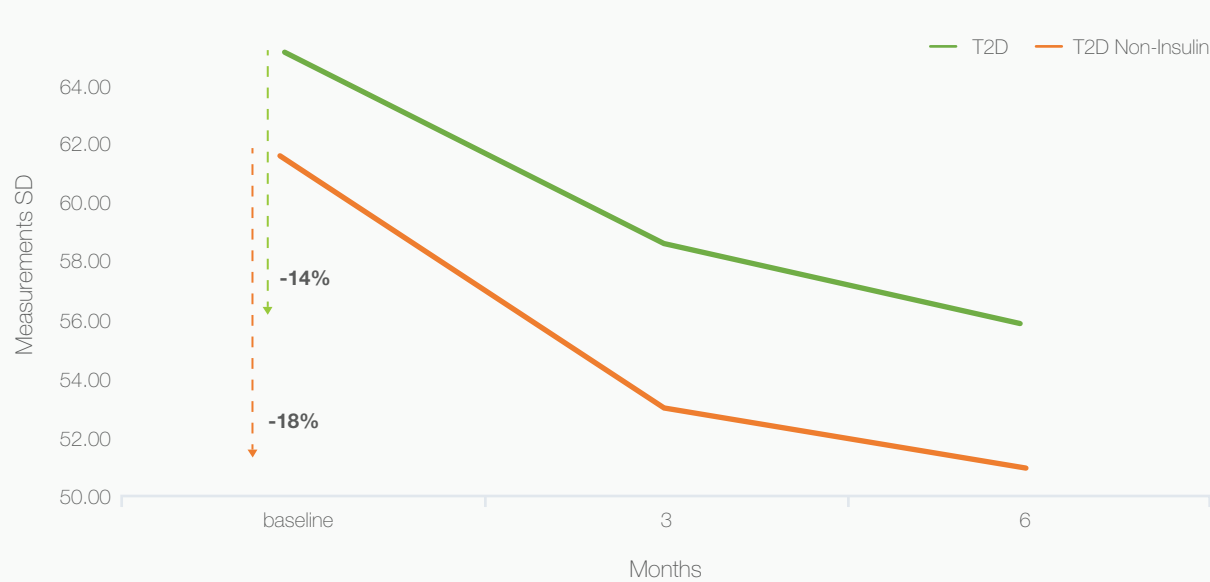


Figure 1: The graph represents measurements SD over six months in T2D and Non-Insulin T2D Dario users

### GM average Reduction

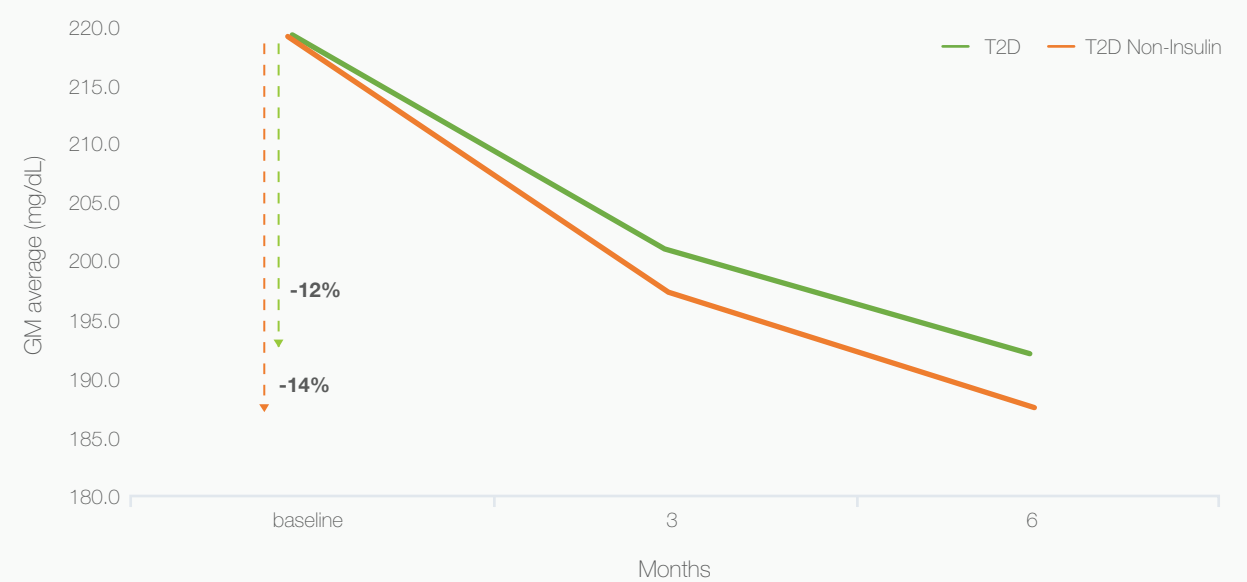


Figure 2: The graph represents the glucose measurements average over six months in T2D and Non-Insulin T2D Dario Users

## Results

For a group of 698 T2D high-risk active Dario™ users:

- GV was reduced by 10% and 14% from baseline after 3 and 6 months, respectively (SD of 55.7, 58.4 vs.65.0) (Fig.1).
- GM<sub>avg</sub> was reduced by 8% and 12% from baseline through 3 and 6 months, respectively (201.1±25.6, 192.8±54.3 vs. 219.5±38.5) (Fig.2).
- Patient's hypoglycemic event (<70mg/dL) was on average, less than one (<1) during the period of analysis.

Subgroup analyses (355 patients) of non-Insulin dependent T2D patients revealed substantial GV improvement.

- GV was reduced by 14% and 18% from baseline through 3 and 6 months, respectively (SD of 52.8, 50.7 vs.61.7) (Fig.1).
- GM<sub>avg</sub> was reduced by 8% and 12% from baseline through 3 and 6 months, respectively (197.5±25.2, 188.0±51.9 vs. 219.7 ±38.8) (Fig.2).

## Conclusions

- Patients using a digital Diabetes management platform have the potential to promote behavioral modification and enhance adherence to diabetes management, demonstrating better glycemic control, reduction in GV and sustainment of their clinical results over time.
- The present study shows a reduction in SD over time including non-insulin dependent users. This is a clinical benefit observed previously with treatment of insulin especially in the group of patients with increased glycemic variability (reduction of SD 70 to 50)<sup>4</sup>.
- Overall, the present study supports the hypothesis that using mobile health management application facilitates improvement in several glycemic outcomes. Previous studies had shown that users of the mobile platform had lower average glucose levels compared to the control group<sup>5</sup>.

## References

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