

# USE OF EKIYOU APP FOR CHO COUNTING AND BOLUS COMPUTING IMPROVES GLUCOSE CONTROL IN PATIENTS WITH TYPE 1 DIABETES IN A TWO MONTH STUDY



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## Introduction

Many studies showed that more than 60% of patients with type 1 diabetes are unable to evaluate correctly their bolus insulin doses. Carbohydrate counting errors are directly correlated to bolus dosage accuracy, and lead to blood glucose excursions.

DiappyMed developed two applications, EkiYou Carbs for carb-counting only and EkiYou Dose for carb&bolus calculation (CE-pending) with the objective to help patients to comply with functional insulin therapy. A pilot study was performed that allowed to assess the performance of the two applications.

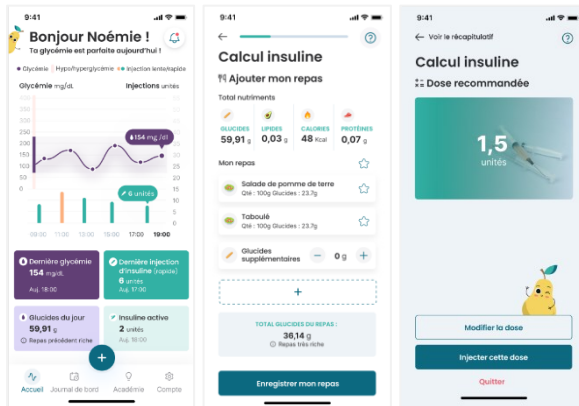


Figure 1. Pictures of EkiYou Dose APP

## Design

Patients received EkiYou APP for a period of two month. During first month, only EkiYou Carbs was active with carbohydrate counting functionalities. After one month, all data were collected to evaluate glucose control and allow the evaluation of dosing parameters by doctors. The second month, EkiYou Dose was active with functionality allowing to do bolus calculation taking account of meals and physical activity inputs.

## Objectives

- TIR TAR and TBR at inclusion and after One-month use
- User satisfaction about Application.

	Mean [min – Max]
Age	47 [ 21 – 62]
Sex	8 M , 9 W
Devices	6 CSII , 11 MDI
HbA1c at inclusion	7.7 [ 6.8 - 8.5]
Knowledge of FIT	7 No / 10 Yes

Table 1. Patient demographics

## Patients and data

17 adults were recruited with MDI or CSII, and with different levels of FIT expertise. Two patients were excluded from analysis, one due to CGM data loss, and one due to illness at the end of the study.

Mean [Min-Max]	At Inclusion	After two month	Difference
TIR 70 -180	53,87 % [ 37 , 72]	62,83 % [ 35 , 85]	8,96 % [ -2 , 18]
TBR 70	2,44 % [ 0 , 9]	1,74 % [ 0 , 5]	-0,7% [ -8 , 2]
TAR 180	43,69 % [ 28 , 62]	35,42 % [ 15 , 65]	-8,27% [ -18 , 3]

Table 2. Comparison between Inclusion and after two Month

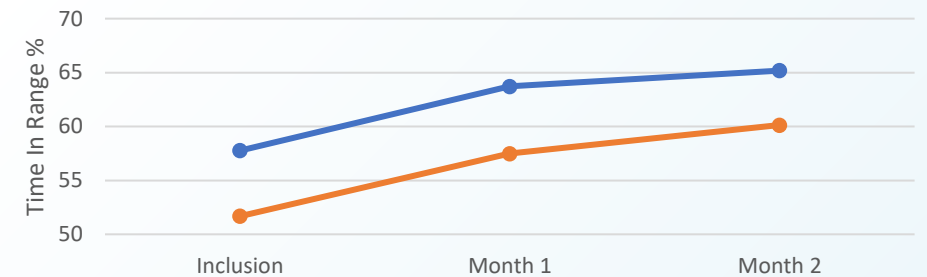


Figure 2. Progress of TIR depending on Flexible Insulin therapy knowledge ( Blue = trained ; Orange = Not trained )

## Results

- Usage of the application resulted in a general increase of TIR of 9%. Compared to first month were most TIR increase was visible with patients trained to FIT, bolus calculation allowed MDI patients with no training to have same clinical benefit.
- 75% of patients noticed that the application helped them to manage complex meals. More than 80% of patients expressed that they would advice the application and they would like continue to use it after the study period.

## Conclusion

Our data supports the benefits of using EkiYou Dose to improve glucose control in T1D patients through easy and more precise bolus calculation, by making carbohydrate counting more accesible. Combination of food database and easy User Interface allowed all patients to benefit from flexible insulin therapy event without training.