# Inreda®

## Impact diabetes

In 2021, about 8.4 million people are diagnosed with type 1 diabetes worldwide[1]. A disease that affects a person's life 24/7, as the body is no longer able to regulate blood glucose levels independently. To maintain the glucose levels, people with type 1 diabetes have to perform fingersticks and need to measure, inject and calculate on a daily basis. The impact of type 1 diabetes on daily life is huge. Did you know that 42 different factors can affect your blood glucose? What you eat, drink and whether you exercise or not, will all affect the blood glucose level[2,3].

The blood glucose levels of people with type 1 diabetes is often measured using glucose sensors. Treatment of type 1 diabetes is done with insulin. The insulin is administered through injection pens or insulin pumps (with and without predictive algorithms)[4]. These treatment methods show good results, but still require a lot of input from the user. This can and should be different, Inreda® Diabetic is ready for the next step.
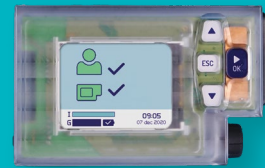
## The Inreda AP®

**AP5**
Used in projects and studies

**AP6**
In development

CE 0344
MDR certified

## A unique system...

A unique treatment on the market is the Inreda AP®: a bi-hormonal fully closed loop system.
This treatment is different in several ways which makes it possible to decrease the diabetes burden.

## Bi-hormonal

The Inreda AP® uses two hormones: insulin and glucagon, to prevent or treat hyper-/hypoglycaemia, respectively. The addition of glucagon makes the treatment unique in its kind.

## Fully closed loop

The blood glucose levels are regulated fully automatic. People who use the Inreda AP® do not need to control or influence the regulation. Meal or exercise announcement is therefore not required. The Inreda AP® is thus a fully closed loop system.

## All-in-one

Two glucose sensors with a transmitter measure the glucose levels and physical activity. The levels are sent wirelessly to the Inreda AP®. Based on this information, insulin or glucagon will be injected automatically. All components communicate with each other and are integrated into one system.

## Responsive and self-learning algorithm

The algorithm of the Inreda AP® is responsive and reacts to changing blood glucose levels. Besides the responsiveness, the algorithm is self-learning. Insulin settings will be adjusted automatically to suit individual patients' needs. Because of this, the glucose regulation will be optimized and personalized as well.

# "The AP gives me mental freedom and inner peace."

- Anneke, Inreda AP® user since September 2021

[1] G.A. Gregory et al. Global incidence, prevalence, and mortality of type 1 diabetes in 2021 with projection to 2040: a modelling study. Lancet Diabetes Endocrinol. 2022 Oct;10(10):741-760. doi: 10.1016/S2213-8587(22)00218-2.
[2] Good to Know: Factors Affecting Blood Glucose. Clin Diabetes. 2018 Apr; 36(2): 202 https://doi.org/10.2337/cd18-0012
[3] https://diatribe.org/42-factors-affect-blood-glucose-surprising-update
[4] https://www.diabetes.org.uk/diabetes-the-basics/types-of-diabetes/type-1/treatments

# FREE 1

A clinical trial has been performed for one year to evaluate the glucose regulation, safety and quality of life of people with diabetes type 1 using the Inreda AP®.
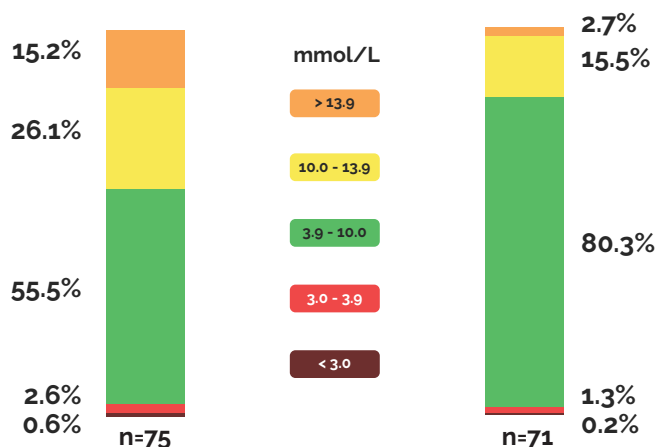
82   1 year

8   Home

## Results

### The Inreda AP® proves itself in a long-term study[5]

After 1 year of bi-hormonal fully closed loop treatment...

**mmol/L**

> 13.9
10.0 - 13.9
3.9 - 10.0
3.0 - 3.9
< 3.0

Baseline (n=75):
- 15.2%
- 26.1%
- 55.5%
- 2.6%
- 0.6%

9-12 months AP usage (n=71):
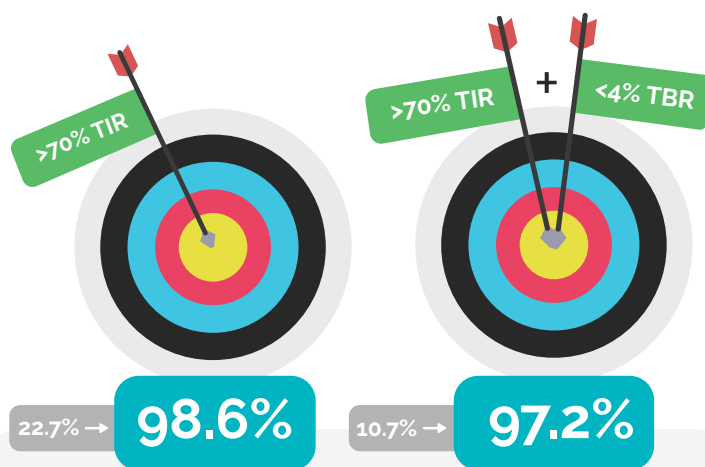- 2.7%
- 15.5%
- 80.3%
- 1.3%
- 0.2%

**Baseline**

**9-12 months AP usage**

... the Time in Range (TIR) improves from 55.5% to 80.3%.

... the Time below Range (TBR) improves from 3.2% to 1.4%.

>70% TIR

22.7% → **98.6%**

>70% TIR + <4% TBR

10.7% → **97.2%**

... 98.6% of the participants achieves the recommended treatment goal of >70% TIR (this was 22.7% of the patients at baseline).

... 97.2% of the participants achieves the combined recommended treatment goals of >70% TIR and <4% TBR (this was 10.7% of the patients at baseline).

30    10

... the diabetes burden (assessed with the PAID questionnaire) decreases from 30.0 to 10.0.

## Scan here!

Would you like to read the entire FREE 1 article? Scan the QR code below!

## Conclusion

The FREE 1 study is the first study in which a fully closed-loop system, with insulin and glucagon, has been tested by a large group of people with type 1 diabetes in the home setting. The study shows that the Inreda AP® leads to improved glucose regulation, with as primary outcome measure a high Time in Range (TIR). The improvement in glucose regulation can be safely achieved without announcement of meals or activities, which can reduce the diabetes burden. This study indicates that the Inreda AP® can be a valuable treatment for people with type 1 diabetes.

[5] Diabetologia 2023 Sep;66(Suppl 1):1-536 (abstractnummer 227)

**Inreda®**