

# The Role of Insulin Smart Pens in Diabetes Management

## WORD WALL :

### **Insulin stacking:**

Taking insulin doses too close together,

### **Insulin on board:**

Insulin that is still active from previous dose,

### **Bolus calculator:**

Built-in feature programmed with individualized settings.

### **Insulin to carb ratio:**

the grams of carbohydrate covered by 1 unit of insulin,

### **Correction factor:**

the drop in blood sugar expected from 1 unit of insulin.

## What Is A Smart Pen And A Smart Pen Platform?

- » A smart pen is an insulin pen device that communicates with a mobile app to track insulin delivery, such as the timing and dose of insulin given.
- » Smart pen technologies include reusable insulin pens or smart cap/attachments that attach to a disposable, pre-filled, insulin pen.
- » Smart pen platforms provide people with diabetes personalized information and guidance through smart pen technology integration with an app that can capture blood glucose readings, insulin dosing data, and other behavior metrics such as physical activity and carbohydrate intake.

## What Are The Benefits Of A Smart Pen Platform?

- » **Smart pens can facilitate insulin management for patients and providers by:**
  - Recording insulin doses in real time
  - Accurately tracking of insulin delivery
  - Eliminating the need to manually log insulin doses and blood glucose readings
  - Identifying potential insulin stacking by monitoring insulin on board
  - Enabling accurate insulin doses using a bolus calculator
- » **Smart pens provide access to comprehensive data by adding key information (e.g. insulin dose, time of insulin delivery, and blood glucose readings) that may have been missing in the past from patients' self-reports.**
  - Data from the smart pen can provide deeper insights by integration with other personalized technologies, such as glucose values from CGM devices.

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## How Can Using Smart Pen Platforms Help Address Barriers To Managing Diabetes?

### >> Barrier: Missed doses

#### ....>> DISPLAYS LAST DOSE

Smart pen platforms display the last insulin dose given. This can help patients remember when the last dose was given and prevent missed or double dosing.

#### ....>> PROVIDES INSULIN DOSE REMINDERS

Smart pen platforms track insulin delivery and reminds patients when the next dose is due.

### >> Barrier: Miscalculation of bolus dose due to limited numeracy

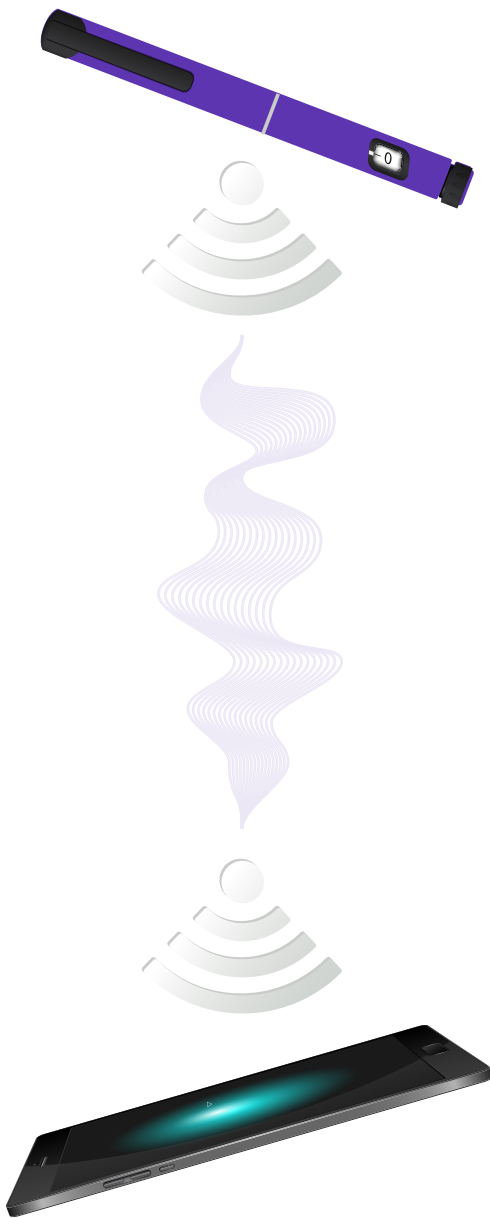
#### ....>> PREVENT ERRORS IN DOSE CALCULATIONS

Using a bolus calculator that determines indicated dose based on the amount of carbohydrates entered and the current glucose value helps prevent errors in dose calculations.

### >> Barrier: Lack of insight on insulin dosing effects

#### ....>> PROMOTES DEEPER UNDERSTANDING

Being able to integrate and visualize the data promotes a deeper understanding of the impact that food, exercise, and insulin delivery have on overall diabetes management.



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## Checklist to get started: easy and 1-2-3!



Prescribe the smart pen, cap, or attachment, and associated supplies (pen needle, insulin cartridge).



Download the corresponding app on a compatible smart phone.



Pair smart pen/attachment to app.

## Who Is A Good Candidate For Using A Smart Pen?

### »» Any person with diabetes who:

- ....»» Uses multiple daily injections (MDI) and has access to a compatible smart phone and app
- ....»» Struggles to calculate doses accurately and may benefit from the bolus calculator feature available with smart pen technology
- ....»» Misses doses and/or forgets when the last dose was given
- ....»» Is challenged by the need for frequent blood glucose logging and may benefit from the integrated meter features that automatically transmit the reading to the app
- ....»» Does not want to use an insulin pump, but desires access to more comprehensive data regarding their insulin dose and glucose trends



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