insulineo

Insulineo is the tracking book for your diabetes always at your fingertips.

Write down the results of your blood sugar, insulin injections, meals and carbohydrate intakes, and physical activities. All this information will be written into your self-monitoring notebook and you can show it or send it to your doctor.

Insulineo helps you calculate the number of carbohydrates in your meals. The application incorporates a carbohydrate booklet in the diet containing the main commercial foods and their amount of carbohydrates. You can also scan the barcode of a commercial food product to get its carbohydrate levels as well as its nutritional composition, allergens and additives that may be present.
You will be able to customize the list of foods by adding your own eating habits.

Insulineo offers you an assistant to calculate the ideal dose of insulin to inject before meals and takes into account residual boluses and upcoming physical activities. This assistant uses the principle of functional insulin therapy.
Insulineo can also be used even if you are not using functional insulin therapy, it handles all methods.

Insulineo is designed to adapt to your treatment, regardless of your protocol: injections by syringes, pens or insulin pump. Simply fill in the information and settings of the application.
Insulineo has an aid to calculate your insulin/carbohydrate ratios. You can ask your doctor to help you set up the app properly.

Insulineo offers you several modes of display of your self-monitoring notebook. Either in the form of a complete history of all the information entered, or in the form of a classic notebook identical to paper format, or in the form of graphs. It also tells you the statistics that doctors usually ask for. It even calculates a theoretical value of your Hb1Ac (glycated hemoglobin). You can email your self-monitoring book and statistics directly to your doctor.

Insulineo offers a procedure for importing data from your blood glucose meter. This will help you avoid re-entering your blood glucose tests.

Insulineo offers management of your medical appointments, a notepad to scan your prescriptions or record important information.
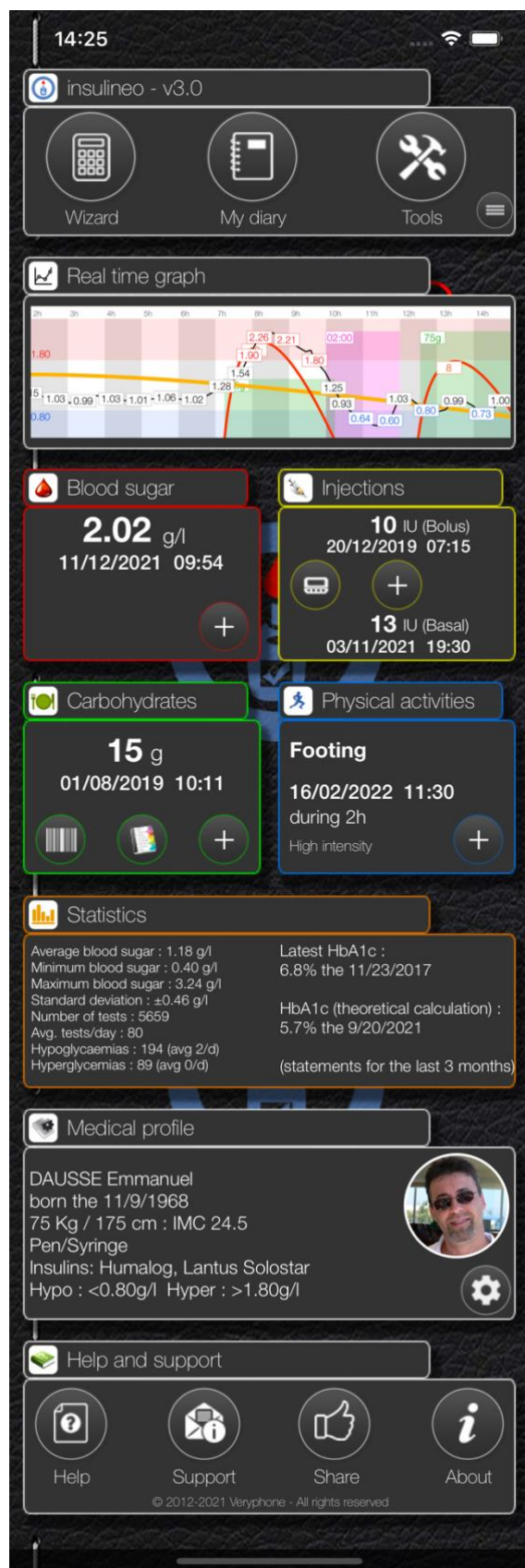
Insulineo sends you reminder notifications for your basal injections, post-meal blood glucose tests, changes to your pump catheter, or taking a medication other than insulin.

For more clarity throughout the application, a rule of use has been defined at the level of color codes:

- **Red** : for everything related to blood sugar levels.

- **Yellow** : for everything related to injections, insulin, pump, etc.

- **Green** : for everything related to carbohydrates, diet, meals, etc.

- **Blue** : for everything related to physical activities.

- **Orange** : for everything related to the utilities of the application.

- **White** : for everything related to the configuration of the application.

Table of Contents

1. THE GENERAL MENU

Launches the Bolus wizard to calculate the dose of insulin to be injected.

Displays the menu giving access to your diary data in different forms and to the application utilities.

Displays the menu to manage your database.

Allows you to rearrange the frames in the general menu to your liking.

Frame Real time graph : real-time graph of blood glucose, injections, meals and physical activities over the last 12 hours.

Frame Blood sugar : the last blood glucose entered. Click on it to edit it or on the button + to add a new one (cf. Chapter 3. Blood sugar levels).
Frame Injections : the last Bolus entered. Depending on your protocol, the last Basal injection or the current base flow of your pump will be displayed. Click on the statements to edit them or on the button + to add a new injection. If you are under pump, click the button to enter a pump shutdown or temporary flow (cf. Chapter 2. Injections).

Frame Carbohydrates : the last meal entered. Click it to edit it or the button + to add a new one. (cf. Chapter 5. Carbohydrates).
Click on the button to consult the carbohydrate booklet (cf. Chapter 5.4 Carbohydrate Booklet) or on the button to scan the barcode of a retail product (cf. Chapter 5.5 Scanning a Product Barcode).
Frame Physical activities : the last activity entered. Click on it to edit it or on the button + to add a new one (cf. Chapter 6. Physical activities).

Frame Statistics : statistics of your statements over the last 3 months. Comparison of your last HbA1c (glycated hemoglobin) against the theoretical calculation that the application makes in real time according to the blood glucose levels entered.

Frame Medical Profile : click in the contents of the frame or on the button to define your identity, your morphology and adjust the parameters of the protocol of your diabetes. If in doubt, ask your diabetologist to help you fill it out (cf. Chapter 2. Preferences).

Frame Help and Support :

If you have a problem or have a question, use the Support button to send a request to **insulineo** technical support.

If you like this application, make it known by sharing it with your contacts by email, sms, Facebook, Twitter, etc.
Don't forget to give your opinion and rate the application on the AppStore to make it evolve.

2. THE PREFERENCES

First of all, you need to set the app correctly according to the medical protocol prescribed by your doctor. Some parameters are to be filled in precisely. If in doubt, ask your diabetologist to help you fill them out.

2.1 General informations

Fill in the different fields to identify yourself.
This information will be printed in the PDF reports that you can send to your doctor.

The BMI (Body Mass Index) will be calculated automatically for each entry of your weight or height. In case of diet or growth of a child, inform them regularly to get your weight, height and BMI curves very useful for a good follow-up with your doctor.

2.2 Blood sugar

Indicate the measurement of your blood glucose levels. It depends on your glucose meter (g/l, mg/dl or mmol/l).

Indicate your thresholds for hypoglycemia and hyperglycemia. These thresholds are used to show blue or red your blood sugar results when they are outside this range.

Select the type of blood glucose meter you are using and indicate its limit values when it displays "Lo" and "Hi" (see your meter's documentation).

Indicate the target range of your blood glucose levels recommended by your diabetologist. It will be used for the analysis of your results.

Note the result of the HbA1c (glycated hemoglobin) level and the date of your last blood test. They will also be displayed in the reports to be given to your doctor.

2.3 Injections

Select the insulin(s) you are using and the associated protocol: Pen/Syringe or Insulin Pump.

Indicate the precision to be taken for injections : either to the nearest unit (1IU), or to the nearest 0.5, 0.1 or 0.05 units. It depends on the accuracy of your pens or pump.

If you are on insulin pump treatment, indicate for information the type of pump you are using and fill in the basic flow rates of your basal injection scheme that you have defined in your pump.

Caution : never use this parameter to entry a temporary flow rate. It is only used to enter the normal base flows of you daily pattern.

Click the button ⊕ to add a row to the base flow table, or click one of the rows to edit it. Swipe left a flow to delete it.

For each input, give the time and flow of the pump programmed for that time.

You can enter a note to comment or give additional information to your doctor about changing a base rate by clicking the button 📝. The note entered will appear in the history (cf. Chapter 8. Entering a note).

2.4 Meal times

Set the usual time slots for your meals.

This setting is very important. It is used throughout the application to correctly place your results in the analyses and self-monitoring notebook.

2.5 Bolus wizard

These parameters must be filled in carefully if you want to use the Bolus wizard. They will be used to accurately calculate the ideal dose of insulin to be injected.

First, indicate if you are using functional insulin therapy by checking or unchecking the box.

As a reminder, the principle of Functional Insulin Therapy (or IF) is to try to reproduce the physiological secretion of insulin as in a non-diabetic person. We will have 3 types of insulin needs:
- insulin for living (basal insulin)
- insulin to eat (fast insulin)
- insulin to correct your blood sugar (fast insulin)

This method of adjusting insulin doses leaves more freedom and flexibility in the choice and quantities of food you want to consume, as well as in the schedules of your meals, while maintaining good glycemic control.

If you are not yet familiar with functional insulin therapy, we advise you to talk to your diabetologist. This can change your life as a diabetic.

Method 1 : use of functional insulin therapy

To use the functional insulin therapy assistant, you must fill in the insulin/carbohydrate ratios that were defined to you during the FI training days.

Specify the type of ratios to define the calculation method:
- xIU/10g   : how many units of insulin do you need to cover 10g of carbohydrates.
- 1IU/x g   : how many g of carbohydrates are covered by 1 unit of insulin.

Click the button ⊕ to add a row to the ratios table or click one of the rows to edit it. Swipe left a ratio to delete it.

For each entry, give the time and the corresponding ratio for that time.

Ratios vary depending on the time of day. The ratio for breakfast may be different from that for lunch or dinner. If you have correctly entered blood sugar and carbohydrate intake for a few days already, the app can help you calculate or check your ratios. To do this, use the buttons 🖩 at the bottom of the page to start the calculation help.

Method 2 : without using functional insulin therapy

The principle of the so-called "classic" method is to have, for each type of meal, a constant number of carbohydrates to be taken, defined by your dietician, and to have an adaptation table for insulin injection for meals and blood sugar corrections.

Adaptation table	
Breakfast insulin	
< 0.80 g/l	**5** IU
0.80 - 1.29 g/l	**7** IU
1.30 - 1.79 g/l	**7** IU
1.80 - 2.29 g/l	**8** IU
2.30 - 2.79 g/l	**9** IU
> 2.80 g/l	**10** IU
Lunch insulin	
< 0.80 g/l	**4** IU
0.80 - 1.29 g/l	**5** IU
1.30 - 1.79 g/l	**6** IU
1.80 - 2.29 g/l	**6** IU
2.30 - 2.79 g/l	**7** IU
> 2.80 g/l	**7** IU
Snack insulin	
< 0.80 g/l	**-** IU
0.80 - 1.29 g/l	**-** IU

Modify or complete the adaptation table as needed. It will be used to offer you the dose of insulin to inject when entering your injections.

For each time of day (breakfast, lunch, afternoon tea, dinner and before bedtime), indicate the number of units of insulin to inject you based on the result of your blood sugar.

Click the button ⊕ to add a row to the adaptation table, or click one of the rows to edit it. Swipe left a row to delete it.

Also complete the chart of how many carbohydrates your dietitian advised you to take during the day.

Click one of the rows to edit it.

Carbohydrates per meal	
Breakfast	**60** g
Lunch	**80** g
Snack	**20** g
Dinner	**80** g
So, a total of 240g of carbohydrates per day	

The parameters Glycemic objective, Insulin sensitivity, Specific meals and Physical activities are common to the 2 methods :

Bolus wizard	
Using functional insulin therapy	☑
Ratio type	x IU/10 g
IU/carbohydrate ratios	1.50 IU/10g
Glycemic target	1.00 g/l
Insulin sensitivity	0.40 g/l by IU
Meal >150g of carbohydrates	+2 IU
Hyperglycemic meal	+1 IU
Very fatty meal	+1 IU
Physical activities	-30,-40,-50 %

Indicate the glycemic objective you want to achieve during blood sugar corrections.

Fill your insulin sensitivity, i.e. the blood sugar level that lowers 1 unit of insulin. According to some people, this sensitivity can vary during the day. Modify or complete the sensitivities table to fit your case.

Click the button ⊕ to add a row to the sensitivities table or click one of the rows to edit it. Swipe left a sensitivity to delete it.

For each entry, give the time and the corresponding sensitivity for that time.

Meals containing a lot of carbohydrates, hyperglycemic meals (with a high glycemic index) and very fatty meals can raise your blood sugar compared to so-called normal meals. For each of these cases, indicate the number of units of insulin to be added during the injection.

| Physical activities	
UI	%
Low intensity	**-30** %
Medium intensity	**-40** %
High intensity	**-50** %
Ignoring physical activities under	
1h	

Physical activities increase insulin sensitivity. Insulin requirements are therefore lower when physical exertion is provided and in the hours following exercise.

Specify whether you are adjusting your insulin doses as a percentage (%) or number of units (IU).

The adaptation of insulin doses depends on the intensity of physical exertion. Give the values of the adaptations according to the type of intensity.

Specify the minimum time of activities that the wizard should take into account.

2.6 Notifications and reminders
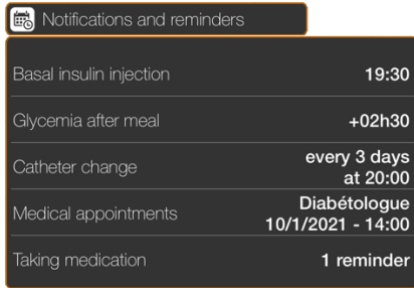
You can schedule alerts to be notified of the time of your basal insulin injection or the time you need to do a post-prandial blood glucose test (after meals), or, if you are on insulin pump treatment, the day and time of your catheter changes.

For post-meal blood glucose test alerts, choose whether you want to be notified after a carbohydrate intake or after an injection.

You can also write down your medical appointments and be forewarned by notification on your phone.

If you are on non-insulin treatment, you can add other alerts to be warned and do not forget to take your medication.
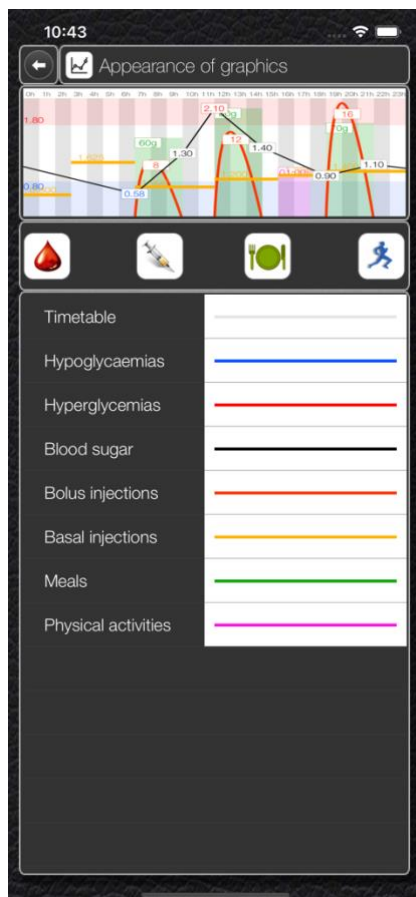
To delete an alert, swipe left its line.
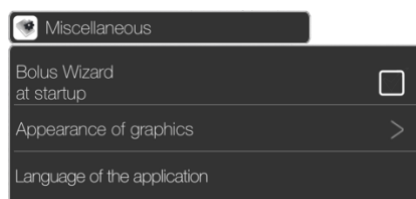
2.7 Miscellaneous

If you want to launch the Bolus wizard when the application starts, check the corresponding box.

You can change the language of the application by selecting English, French, German or Spanish according to your preferred language.

You can change some features of the app's graphics by clicking the Appearance of graphics line.

You can make certain statements appear or hide in the charts. Click on the blood glucose, injection, meal or physical activity icons to select the statements you want to display in the graphs.

You can change the colors of the elements that make up the graphics. Click the item you want to edit and choose a color from the palette.

Be careful, do not choose too light colors, otherwise they will be difficult to see in the graphics.

The graph displayed on this page gives you an overview of what your setup will look like.

3. BLOOD SUGAR LEVELS

The results of your blood sugar levels are the main data you need to enter. It is advisable to perform at least 6 blood glucose tests per day. One test before each meal (pre-prandial) and another 2h or 3h after the meal (post-prandial).

You can also transfer data from your blood glucose meter (see Chapter 10.4 Import data from your blood glucose meter) to avoid re-entering it.
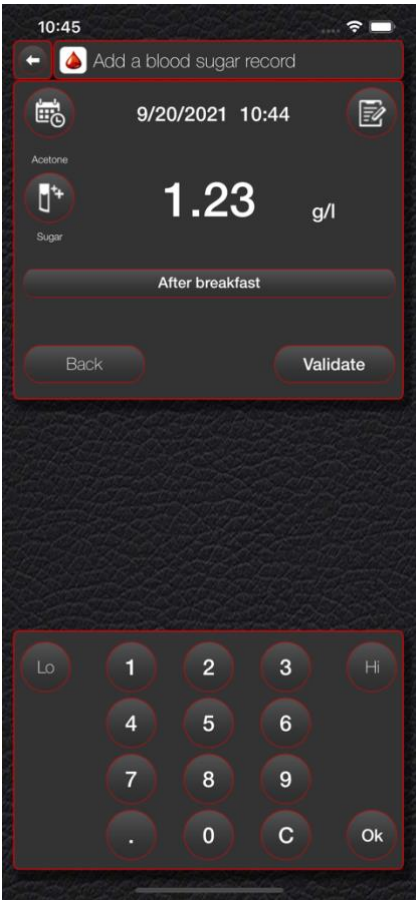
### 3.1 Enter a blood sugar level

Enter the value of your blood glucose test using the numeric keypad displayed on the screen. No need to enter the comma or decimal point, the software automatically manages it according to the format you have entered in the preferences (g/l, mg/dl or mmol/l).
Example: to enter a value of 1.04 g/l, type 104 on the keyboard.

If your blood glucose meter displays Hi or Lo, click the corresponding button. The software will replace the value with the one you set in the preferences at the limits of your meter.

Click the button [icon] to change the date or time you took the blood glucose test.

You can enter a note to comment or give additional information about this blood glucose reading by clicking on the button [icon] (cf. Chapter 8. Entering a note).

Also give the indicator of the type of test carried out (before breakfast, after breakfast, before lunch, after lunch, before snack, after snack, before dinner, after dinner, before bedtime, during the night, before physical activity, after physical activity). By default, the software sets this indicator according to the time of the test and the meal times entered in the preferences. If it is false, click on it and select the right indicator from the list that will be displayed
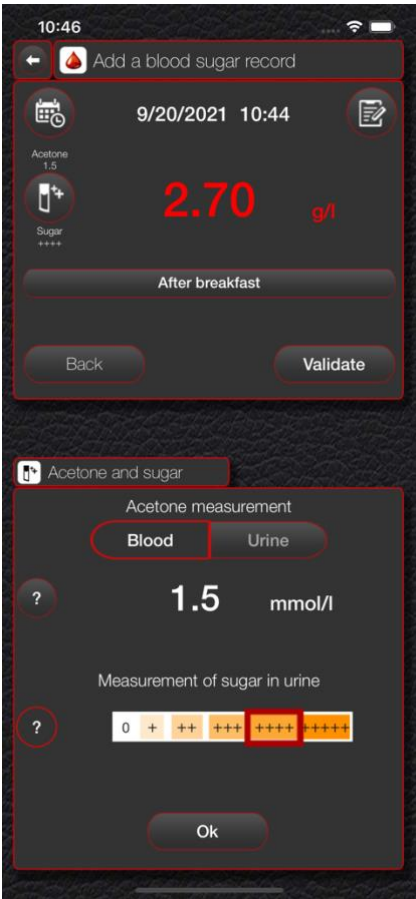
3.2 Acetone and sugar

In case of blood sugar above 2.50 g / l, it is advisable to make a measurement of acetone and sugar in the urine. Some blood glucose meters have a function of measuring acetone in the blood.

Click the button [icon] to enter the acetone and sugar statements.

For the measurement of acetone, select the type of reading: Blood or Urine. Report the measurement taken by your reader or on the strips.

For the measurement of sugar in the urine, report the result by clicking on the strip materialized on the screen.

If you have not made a reading, either acetone or sugar, or if you want to cancel your entry, click on the buttons [icon] to delete the corresponding measurement entered.

4. INJECTIONS

Enter injections only for Bolus (fast insulin) or Basale (slow insulin) injections. If you are on an insulin pump, you should only grab the Bolus. Temporary debits are to be filled in from the button 📟 of the general menu (cf. Chapter 4.2 Temporary flows) and base flows are to be defined in the preferences (cf. Chapter 2.3 Injections) .
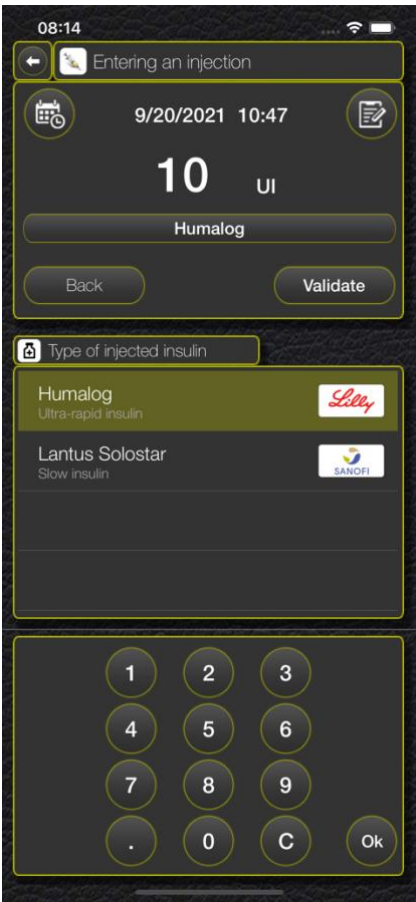
4.1 Enter an injection

Select the type of insulin injected from the list you set in preferences. By default, the software selected the insulin used for Bolus.

If you select Basal insulin, the software will take the value of the last Basal injection entered.

If you use an adaptation table, the software will offer you the value you set in the preferences based on the time displayed and the last blood glucose entered.

Enter the number of units of insulin you are injecting using the numeric keypad displayed on the screen. No need to enter the comma or decimal point, the software automatically manages it according to the precision you have entered in the preferences (1IU, 0.5, 0.1, 0.05).
Example: to enter 2.25 units, type 225 on the keyboard.

Click the button 📅 to change the date or time you injected.

You can enter a note to comment or give additional information about this injection by clicking on the button 📝 (cf. Chapter 8. Entering a note).

4.2 Temporary flows

In the case of treatment under insulin pump, you may have to temporarily change the flow of your pump in case of illness, physical exertion, etc.

To report these rate changes in your self-monitoring logbook, click the button 📟 on the general menu and use the menu that appears:
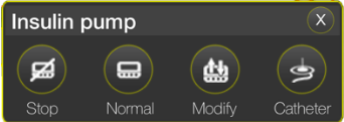
📟 to signal a momentary stop of the pump.

📟 to signal a return to normal pump, i.e. a return to the base flow rate defined in the preferences.

📟 to indicate a temporary flow rate either by giving a precise flow rate (in IU/h) or by indicating a percentage increase or decrease in the base flow.

Select the type of rate change (UI/h or %) by clicking the corresponding button on the numeric keypad.

Indicate the value of the flow to be set up using the numeric keypad and give the duration of the temporary flow by clicking on the Define button to set up and giving the expected time. If you leave for an indeterminate period of time, the temporary flow will remain active in the application until you manually indicate a return to normal.

Click the button 📅 to change the date or time you made this rate change.

You can enter a note to comment or give additional information about this change in flow by clicking on the button 📝 (cf. Chapter 8. Entering a note).

4.3 Catheter change

If you are on insulin pump treatment, you can add changes in your catheters to your self-monitoring notebook.
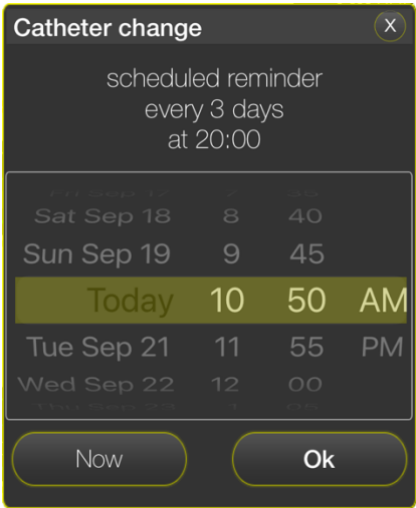
To do this, click the button 🖥 and click the button 🥄 from the general menu. Indicate the time of the catheter change and validate.

If you have set a reminder for your catheter changes in the preferences (cf. Chapter 2.6 Notifications and reminders), a notification will be scheduled for the next change.

5. CARBOHYDRATES

To capture your carbohydrate intake, you can opt for the simplified method by giving only the amount of carbohydrates in your meals, or compose your meals in detail, food by food, and take a picture of your plates which can be very useful for your dietician or diabetologist to adjust your protocol.
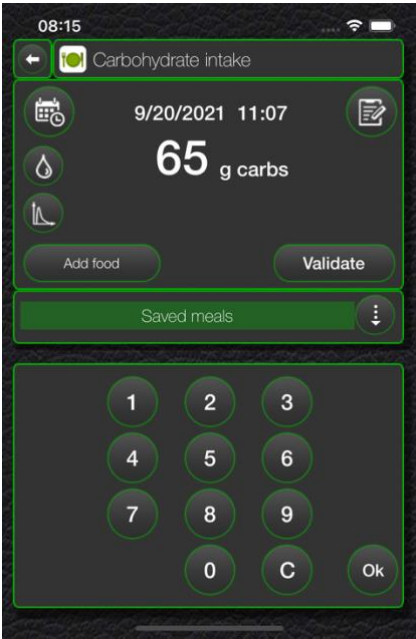
### 5.1 Simplified entry of a carbohydrate intake

Enter in grams the amount of carbohydrates you eat using the numeric keypad displayed on the screen.

Indicate if these carbohydrates are very fatty by clicking on the button 💧.

Indicate if these carbohydrates are hyperglycemic, i.e. they raise blood sugar very quickly, by clicking on the button 📉.

Click the button 📅 to change the date or time you took these carbs.

You can enter a note to comment or give additional information about this carbohydrate intake by clicking on the button 📝 (cf. Chapter 8. Entering a note).
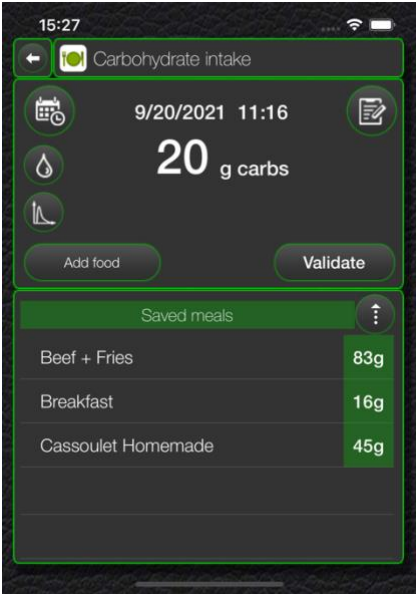
5.2 Recurring meals

We all have a meal or a family dish that we eat often. That's why you can save your recurring meals in the app to avoid re-entering them every time.

For a list of saved meals, click the button ⋮ and select the meal to recall.

You can then modify or supplement it to suit the meal you are having that day. Swipe left a row to delete a recurring meal.

Click the button ⋮ to close the list of saved meals.

5.3 Composition of a detailed meal

Click the Add Food button to compose your meal.

Select a product from the database (cf. Chapter 5.4 Carbohydrate Booklet) and give the amount of food you will eat. The sum of the carbohydrates of the meal will be calculated as and when the additions of foods composing this meal.

Cliquez sur l'un des aliments du repas pour le modifier ou balayez sa ligne vers la gauche pour le supprimer.

You can take a picture of the plates of your meal by clicking the button 📷 to open the camera or on the button 📎 to choose a photo from your photo album. Click the thumbnail of a photo of the meal to view or delete it.

If you want to add this meal to the list of saved meals, click the button 💾 and give a name for this composition.

Indicate if these carbohydrates are very fatty by clicking on the button 💧.

Indicate if these carbohydrates are hyperglycemic, i.e. they raise blood sugar very quickly, by clicking on the button 📈.

Click the button 🕐 to change the date or time you had this meal.

You can enter a note to comment or give additional information about this meal by clicking on the button 📝 (cf. Chapter 8. Entering a note).

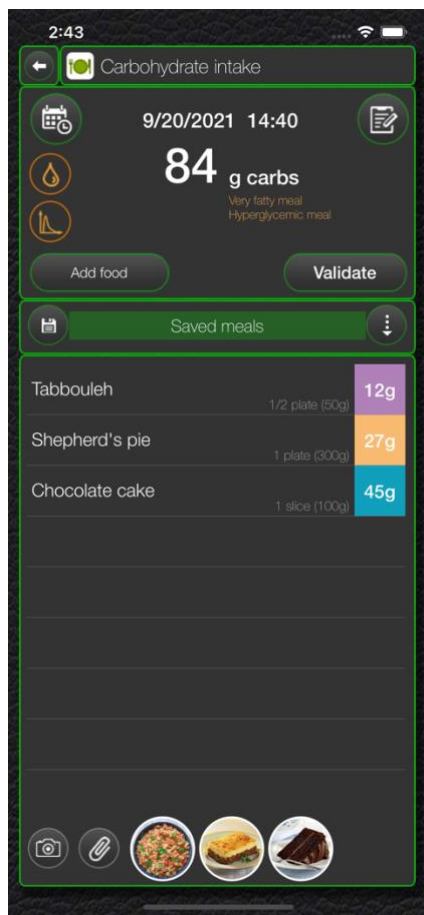## 5.4 Carbohydrate booklet

Insulineo has a database of nearly 2000 referenced products to which you can add your own products (cf. Chapter 5.6 My products) or scan the barcode of retail products (cf. Chapter 5.5 Scan a product's barcode).

Navigate through the list of categories and product lists to find the food to add to the meal. Use the search bar by clicking on the button 🔍 and type the name of the food to search for.
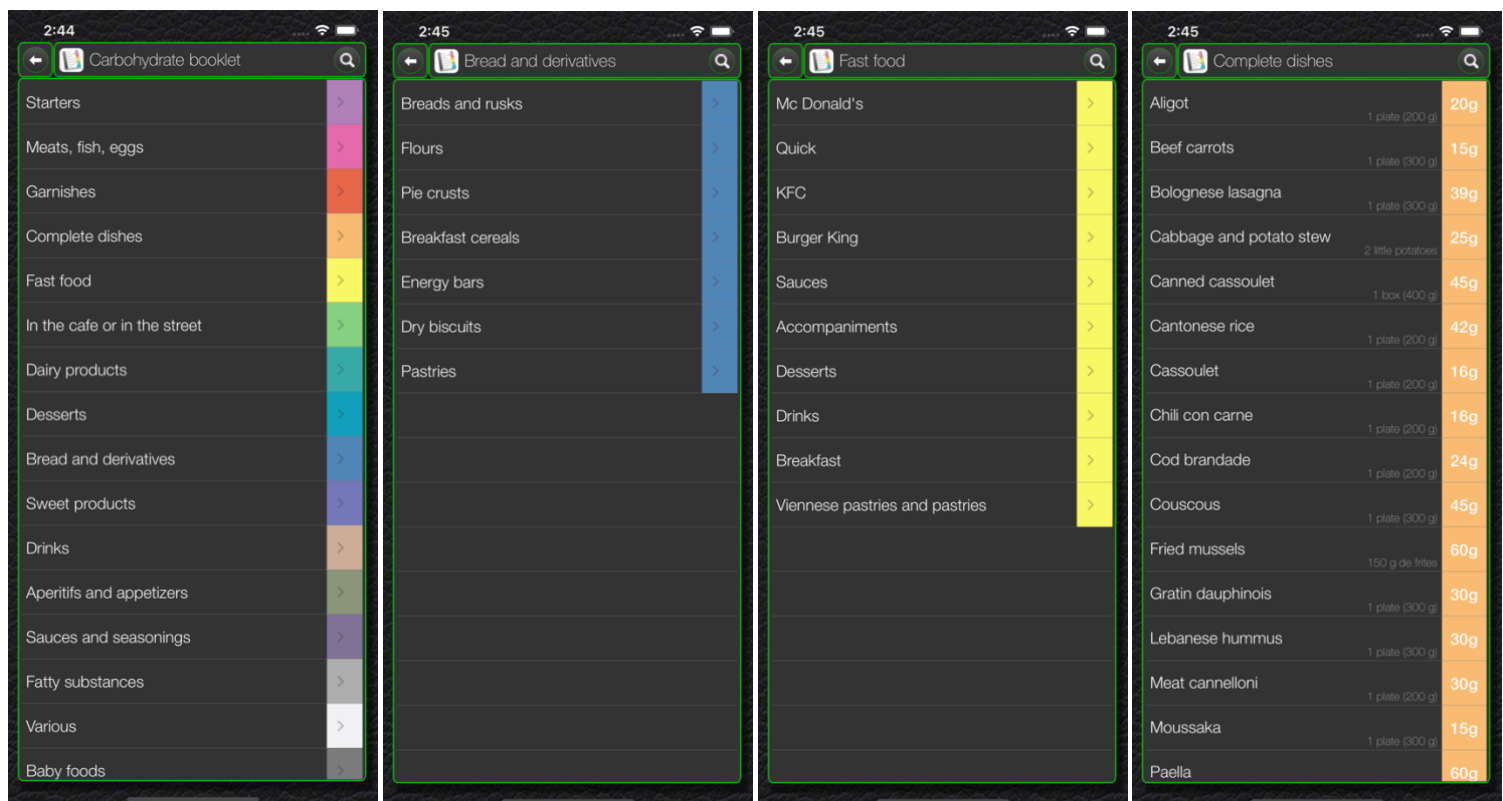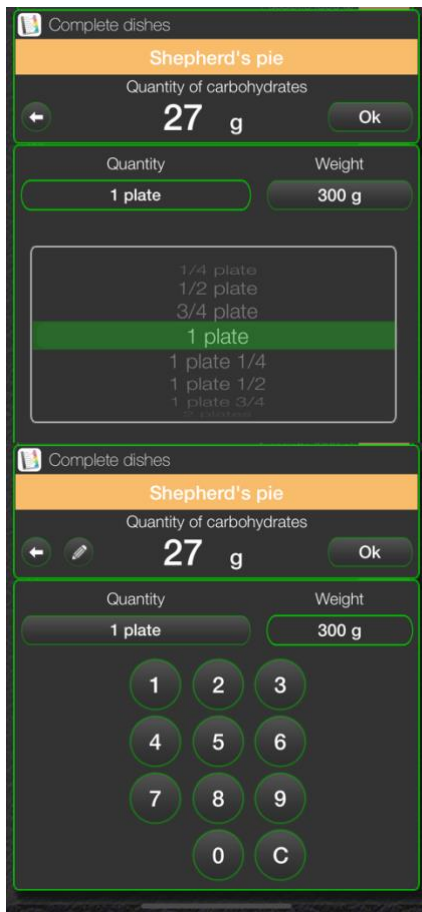
Once the product is selected, you must indicate the amount of food to add to the meal.

You have 2 possibilities:

- either by the number of units of the product (plate, glass, teaspoon, tablespoon, pack, part, etc.)

- either by weight or volume.

Click the Quantity or Weight/Volume button according to your preference and select the number of units from the list, else, enter the weight or volume using the numeric keypad displayed on the screen.

The amount of carbohydrates in the food will be calculated automatically based on the values entered.

Click the Ok button to validate your entry and add this food to your meal.

If you have selected a food that you have created yourself, i.e. from the "My products" category, click on the button 🖊 if you want to modify it.

5.5 Scan a product's barcode

You can also add a product by scanning its barcode and query the Open Food Facts community database. (available on the Internet at http://fr.openfoodfacts.org)

Then place the product barcode in front of your phone's camera. As soon as the barcode is found by the system, it is automatically decoded and sent to the community site for analysis.

If the code is referenced, a page appears and gives you all the nutritional information of the product (Energy, Carbohydrates, Proteins, Fats, Salt, etc.) as well as allergens and possible additives. The Nutri-Score is also displayed if it has been set by the manufacturer.

You can then add this product to the list of your own foods by clicking on the Add this product button or see its complete sheet on the Open Food Facts website by clicking on the Complete sheet button.

If the scanned product is not yet referenced, you will be asked if you want to contribute to the enrichment of the community database and fill in the information on the product for the benefit of the whole community.
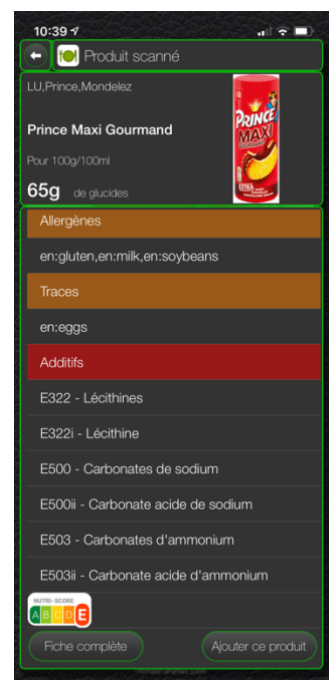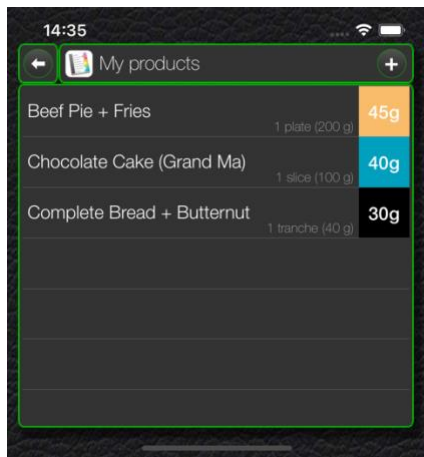
5.6 My products

You can create your own products based on your eating habits.

In the list of categories in the carbohydrate booklet, select the last line labeled "My Products".

Click on one of your products to enter its quantity as with any other food, or click the button ➕ to create a new one.
Swipe left a row to delete a product.

To edit a food you have already created, select it and a button 🖊 will appear in the interface for entering the quantity of a product.

To create a new product, start by giving it a name.

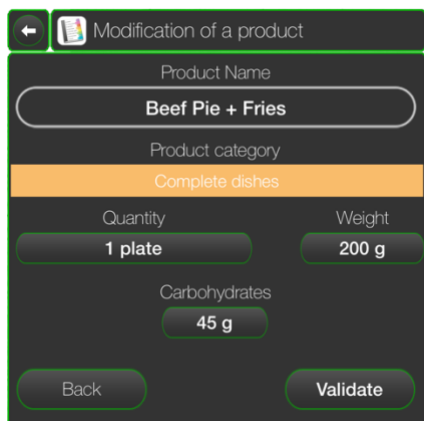You can associate a category with it so that your product appears in this category in the same way as other foods in this category when you browse the carbohydrate booklet. Click the Product category banner and select the category you want to assign to it. If you want to remove the category you gave it, select the "My products" category.

Next, you need to define the amount, weight, or volume, as well as the number of carbohydrates that this amount of your product represents.

To do this, click on the buttons corresponding to the value to be entered :

Entering the Quantity:

Roll the values to indicate the quantity and unit to be defined to quantify your product.

Select the line "(no equivalent)" to not give a unit and treat the product only by its weight or volume.

Entering Weight or Volume:

Select the unit to define whether it is a weight or a volume. Only the cl and ml units will be considered to measure a volume, the other units will be taken for a weight.

Roll the 3 values (hundreds, tens and units) to give the weight or volume of the portion of your product defined in the quantity entry.
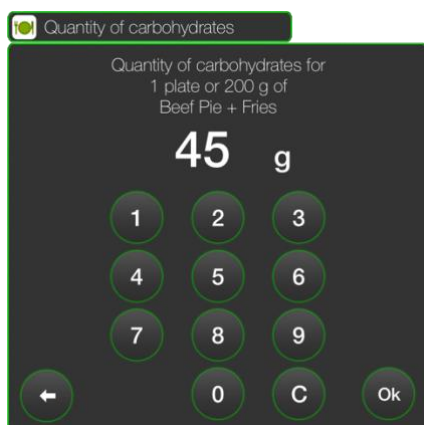
Entering the number of Carbohydrates:

Enter the number of grams of carbohydrates contained in the serving size defined in the entry of the quantity and weight of your product.

Attention: if you have quantified your product as 1 part, you must enter the number of carbohydrates contained in 1 part and not on the total amount of your product.

6. PHYSICAL ACTIVITIES

Physical activities have an influence on insulin sensitivity. Insulin requirements are lower when physical exertion is provided and within hours of exertion. It is therefore interesting to note your physical activities to better analyze your diabetes.

6.1 Enter a physical activity

Specify the type of activity you are taking by clicking the Type of physical activity button. Select the type of activity from the list that appears.
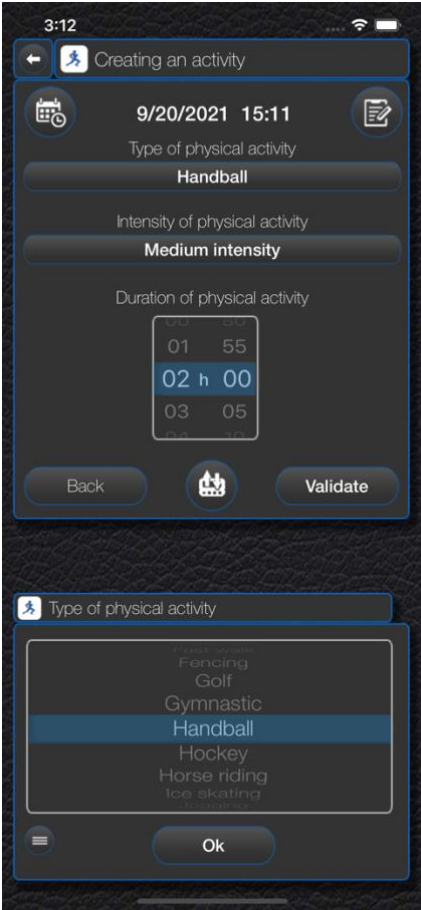Most of the activities are listed but you can add your own activities by clicking on the button ☰ (cf. Chapter 6.2 Creating a type of physical activity).

Select the intensity of the effort by clicking on the Intensity of physical activity button.

Also give the duration of physical activity.

If you are on an insulin pump and you need to decrease or stop the flow of the pump to perform this physical activity, click on the button 🏭 to report this change in flow (cf. Chapter 4.2 Temporary flows).

Click the button 📅 to change the date or time you did or are going to do this activity.

You can enter a note to comment or give additional information about this activity by clicking on the button 📝 (cf. Chapter 8. Entering a note).
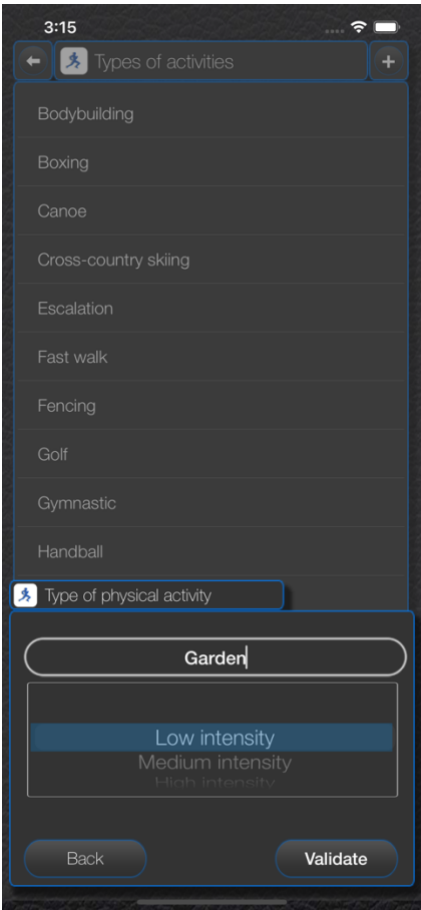
6.2 Creating a type of physical activity

The list of types of physical activities in the app is quite exhaustive, but you can add your own types of activities.

You can completely modify the displayed list according to your needs.

Select an activity type to edit it.

Swipe left an activity type to delete it.

Click the button ⊕ to create a new activity type.

Give a name to your type of activity and the intensity of the effort usually made when you practice it. This intensity can be adjusted when entering physical activity.

7. BOLUS WIZARD

The Bolus wizard allows you to calculate the ideal dose of insulin that you need to inject before a meal.

Warning: this wizard only gives a theoretical value of the number of insulin units to be injected. It is based only on a mathematical formula. It is also important to consider your health and other medical criteria that may influence these values. In addition, the application cannot be held responsible for the value displayed. It depends mainly on the setting of your protocol that you have entered in the preferences.

The Bolus assistant adapts to your protocol: functional or classic insulin therapy as presented below.

7.1 Wizard with functional insulin therapy

Before using this wizard, check the coefficients and settings of functional insulin therapy in the preferences and validate them with your doctor according to your treatment. (cf. Chapter 2.5 Bolus wizard)
The assistant needs 4 types of information to calculate the insulin dose needed:
- your blood sugar before the meal
- the amount of carbohydrates in your meal
- your carbohydrate coefficient for this meal
- physical activities performed before and planned after the meal.

The software displays the last blood glucose you entered. If this is not the pre-prandial blood glucose for this meal, click on the button + to perform a new blood glucose test. Depending on the result of blood sugar, the assistant can calculate an additional dose of corrective insulin.

Indicate the number of carbohydrates you will take in this meal by clicking on the ...g carbs zone and entering the number of carbohydrates using the numeric keypad. If you want to enter the details of your meal, click on the button + .
Also indicate if the meal is hyperglycemic using the button or if it is very greasy with the button and the assistant will calculate the additional dose to be injected.
If the meal contains more than 100g (according to your settings) of carbohydrates, the insulin dose will be automatically increased.

The software displays the carbohydrate coefficient used for the time of this meal. If you want to readjust this coefficient, click the carbohydrate coefficient button and proceed as described in chapter 2.5 Bolus wizard.

If you have practiced or if you have planned to practice a physical activity after the meal, fill it in by clicking on the button + and proceed as indicated in chapter 6 Physical activities. The wizard will take into account the settings you have entered in the preferences (cf. Chapter 2.5 Bolus wizard) and will adjust the insulin dose according to the duration and intensity of the activity performed.

If you had already given an insulin injection before this meal and its duration of action is still in progress, a residual Bolus frame is displayed indicating the remaining time of action and will correct the dose to be injected accordingly.

The software calculates the dose of insulin to be injected based on everything you have entered and details it as follows: the dose to correct blood sugar, the dose to cover the carbohydrates of the meal, the adjustment dose to support physical activities and the correction dose in case of residual Bolus. The whole gives a theoretical dose of insulin to inject. If you want to correct it manually, click on it and enter the real dose you are going to inject using the numeric keypad. Click the Validate button to save the injected dose to the history.

7.2 Wizard with the classic method

Unlike functional insulin therapy, the so-called 'classical' method imposes a constant number of carbohydrates per type of meal, and therefore an equally constant number of insulin units. You must have completed the adaptation table for insulin corrections as well as the table of the number of carbohydrates per meal before using this wizard. (cf. Chapter 2.5 Bolus wizard)

The software displays the last blood glucose you entered. If this is not the pre-prandial blood glucose for this meal, click on the button ⊕ to perform a new blood glucose test. Depending on the blood glucose result, the assistant will display the corresponding insulin dose from the adaptation table.

Depending on the time, the number of carbohydrates you need to take for this meal will be displayed. If you want to enter the details of your meal, click on the button ⊕. Also indicate if the meal is hyperglycemic using the button or if it is very greasy with the button and the assistant will calculate the additional dose to be injected.

By clicking on the ...g of carbs zone you can adjust the table of the number of carbohydrates per meal but this is not wise without the agreement of your nutritionist.

By clicking on the Adaptation table button you can adjust the doses provided in the adaptation table but this is not wise without the agreement of your diabetologist.

If you have practiced or if you have planned to practice a physical activity after the meal, fill it in by clicking on the button ⊕ and proceed as indicated in chapter 6 Physical Activities. The wizard will take into account the settings you have entered in the preferences (cf. Chapter 2.5 Bolus wizard) and will adjust the insulin dose according to the duration and intensity of the activity performed.

The software calculates the dose of insulin to be injected based on everything you have entered and details it as follows: the dose provided in the adaptation table, the adjustment dose to support physical activities and the correction dose in case of residual Bolus. The whole gives a theoretical dose of insulin to inject. If you want to correct it manually, click on it and enter the actual dose you are going to inject using the numeric keypad. Click the Validate button to save the injected dose to the history.

8. ENTER A NOTE

In most input pages, you can associate a note to comment or give additional explanations to your statement.

Click on the buttons and this type of interface appears.

Type the text of your note in the input box and click the button Ok to associate it with your statement.

You can save the notes entered according to the type of readings (blood glucose, injections, carbohydrates, physical activities or medical appointments) by clicking on the button and reuse them without having to re-enter them each time.

To view a list of saved notes, click the button .
Select a note to display it in the input box.
You can optionally edit it and click the button to save the changes.

Swipe left a row to delete a saved note.

Click the button to close the list of saved notes.

To delete a note already entered on a statement, clear the contents of the input box and click the button Ok .

9. MY DIARY

All the statements you have entered are recorded in your diabetes self-monitoring diary.
To consult or analyze them, several representations are at your disposal: a history,
graphs, statistics, analyses and PDF documents that you can send to your doctor by email

| Mon carnet	(X)
📋 History	
📈 Daily graphs	
📊 Statistics and analyzes	
📄 PDF Reports	
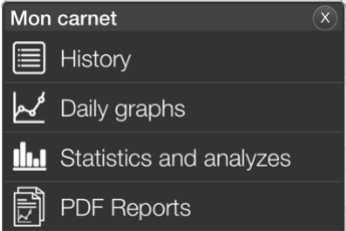
9.1 The history

The history lists all the statements you made for a given date. You can browse the
days by clicking the arrows on either side of the date, or by swiping the entire screen
left or right. To view the history of a specific date, simply click on the date and select
the day to view using the calendar.

You can click a statement to edit it or swipe left a statement to delete it.

For a better readability of the history, each statement has its associated icon :

🔴 for blood glucose tests

💉 for injections

🍽️ for carbohydrate intake

🏃 for physical activities

⚙️ for changes in pump flow rates

⚙️ for catheter changes

⚖️ for statements of your weight

📏 for statements of your size
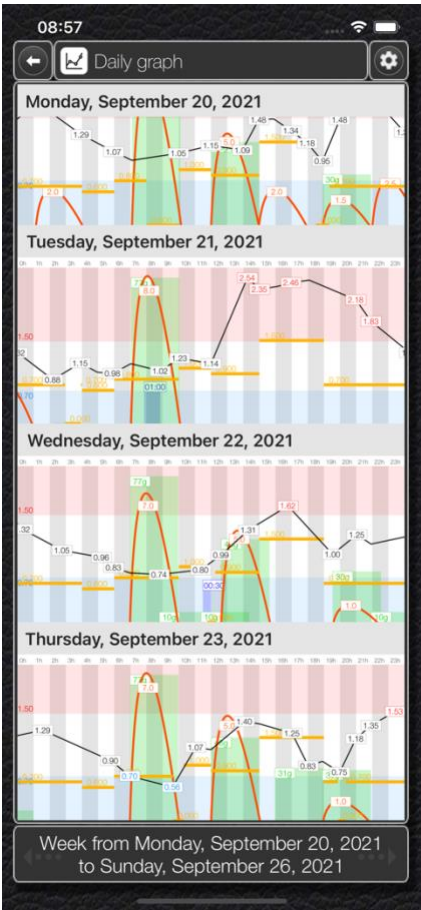
9.2 The daily graph

Visualization of your statements in graphical form over a period of one week, from
Monday to Sunday. You can browse the weeks by clicking the arrows on either side of
the period at the bottom of the screen, or by swiping the entire screen left or right. To
view the graphs for a specific time period, simply click on the period and select a day of
the week to view using the calendar.

The graphs show the curve of your blood sugar during the day, the duration of action of
insulin injections, the flow rates of your pump, your carbohydrate intake and your
physical activities. Areas of hypoglycemia and hyperglycemia are also materialized.

Click the button ⚙️ to set the appearance of the graphs. Change the colors and select
the statements to display on the graphs (cf. Chapter 2.7 Miscellaneous).

For better readability, you can switch your phone to landscape mode.

Click on a graph to view the history of that day. (cf. Chapter 9.1 the history)

9.3 The statistics and analysis

The statistics page brings together all the analyses generally requested by diabetologists. You can view analysis on the last 7, 14, 30, 60, or 90 days by clicking the arrows on either side of the period at the bottom of the screen, or by swiping the entire screen left or right.

For better readability, you can switch your phone to landscape mode.

The daily trend shows the average trend of your blood sugar in the day hour by hour as well as the standard deviations.

The value of your average blood sugar for the day is calculated and displayed before and after each meal time.

The percentage of your blood glucose levels within the target range is calculated and displayed before and after each meal time.

The total number of hypoglycemias over the period is calculated and rallied according to meal times.

The total number of hyperglycemias over the period is calculated and rallied according to meal times.

The average number of units of insulin injected per day is displayed and distributed over the day according to meal times. The number of units of rapid insulin (Bolus) and that of slow insulin or pump flows (Basale) are clearly displayed.

The average number of carbohydrates per day over the period is displayed and distributed according to meals.

The curve of the evolution of your weight and height over the period is displayed. The colors indicate your BMI (green: normal BMI, orange: overweight and red: obesity).
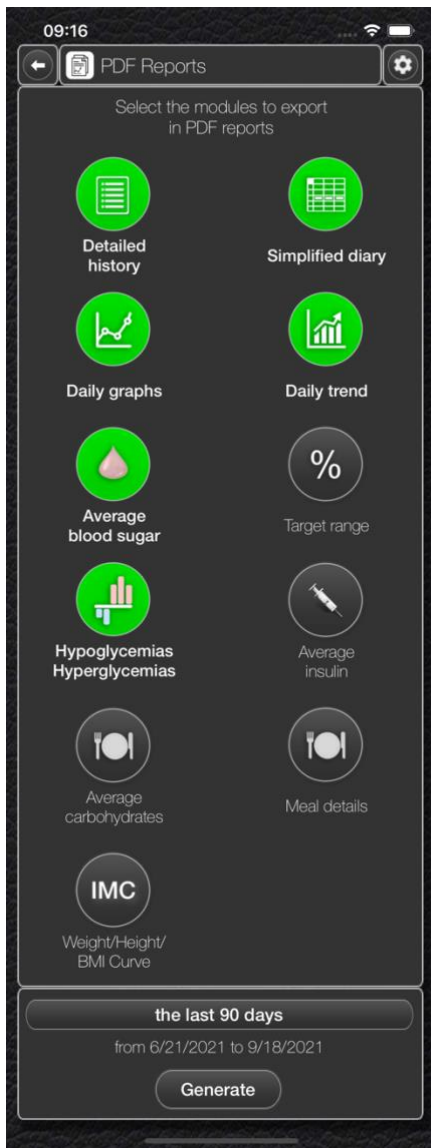
9.4 The PDF reports

This involves generating documents in PDF format containing your statements in different forms. These PDF documents can then be emailed directly to your doctor.

Select or deselect the modules you want to export in the PDF report by clicking on the different buttons :

<u>Detailed history</u>: all the records of your history, line by line.

<u>Simplified diary</u>: summary of your statements in the manner of a self-monitoring notebook.

<u>Daily graphs</u>: all graphs in the period, day by day.

<u>Daily trend</u>: analysis of the trend in your blood sugar.

<u>Average blood glucose</u>: analysis of your average blood glucose over the period.

<u>Target range</u>: the percentage of success of your blood glucose levels in the target range.

<u>Hypoglycemias/Hyperglycemias</u>: analysis of the number of hypoglycemias and hyperglycemias over the period.

<u>Average insulin</u>: analysis of the insulin injected over the period.

<u>Average carbohydrates</u>: analysis of carbohydrates taken over the period.

<u>Meals details</u>: display of meals in detail, food by food, with photos of plates taken during your meals.

<u>Weight/Height/BMI curve</u>: curve of evolution of your weight and height over the period.

Choose the period to export (the last 7, 14, 30, 60 or 90 days, or a custom period) and click the Generate button to start creating the PDF document.
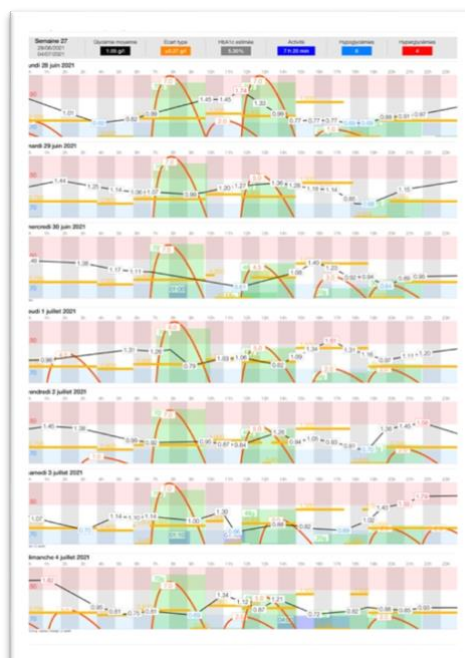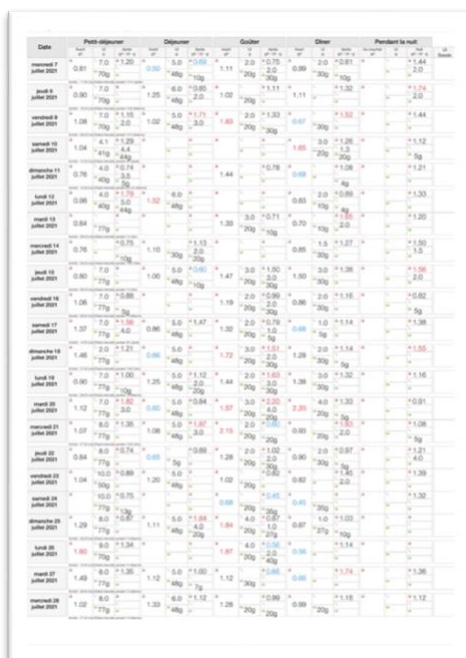
10. THE DATABASE MANAGEMENT TOOLS

The database used by the application includes all the data: those you entered, those you imported from your blood glucose meter, the carbohydrate booklet, the types of insulins, the types of glucometers and insulin pumps.

All this data is stored locally on your phone. It is therefore advisable to save them to avoid losing all the statements you have entered or imported. In addition, if you need to change or reset your phone (in case of theft, breakage, or hardware problem), it is better to be able to take the data from your old hardware to transfer it to the new one. The application provides a backup system on secure servers.
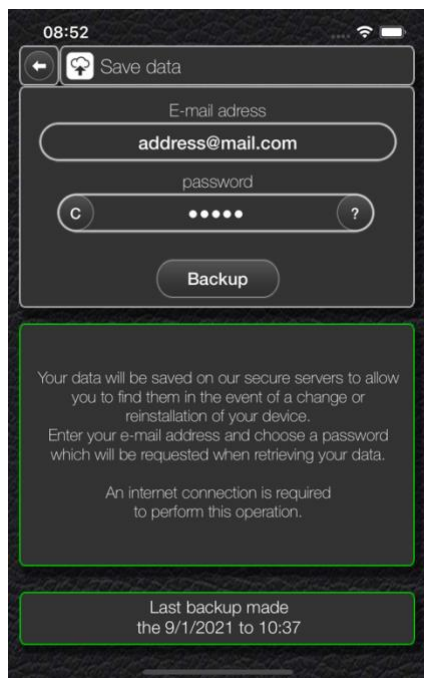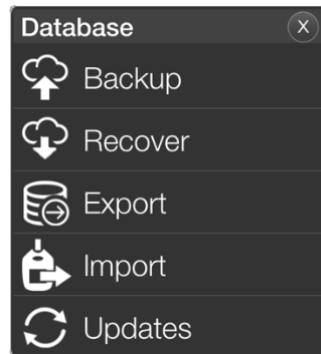
10.1 Backup your data

To make a backup of your data, give your e-mail address and choose a password (5 characters minimum) to identify yourself.

If you have already made a backup, you must give back the same password that you gave during the backup. The date and time of your last backup will be displayed at the bottom of the screen.

To validate your identification, click the Done button on the keyboard when you have finished entering your password.

If you have your password, click on the button (?) so that your credentials are sent to you by email.

If you want to change your password, enter your current password and click the button (c) to change it.

Click the Backup button to start backing up your data.
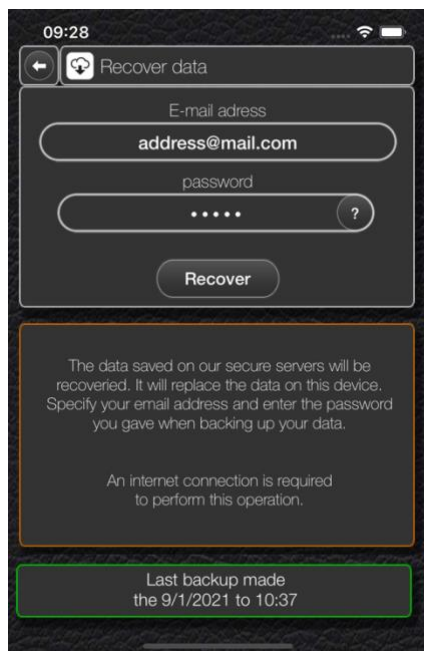
10.2 Recover your data

To recover your previously backed up data, give back the e-mail address and password used to make the backup.

To validate your identification, click the Done button on the keyboard when you have finished entering your password.

If you have your password, click on the button (?) so that your credentials are sent to you by email.

The date and time of the last backup that will be restored is displayed at the bottom of the screen.

WARNING: Restoring the data erases all insulineo data already* present in your phone and *replaces them with those of the last backup made.

Click the Recover button to start restoring your data.
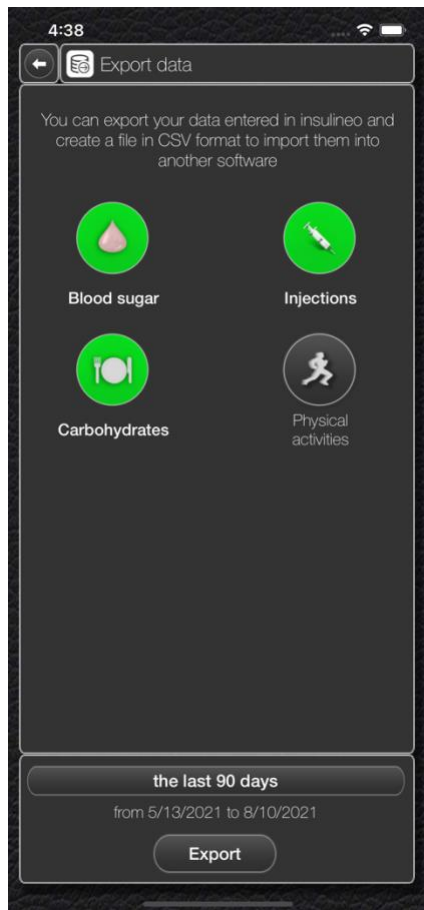
10.3 Export your data

You can export your statements to a text file in CSV format to import them into another software or application.

Select the data you want to export : blood sugars, injections, carbohydrate intakes and physical activities.

Choose the period to export (the last 7, 14, 30, 60 or 90 days, or a custom period) and click the Export button to generate the CSV file and send it to you by email.

The generated file contains statement lines separated by the *NewLine* character (ASCII code 10). Each row represents the data of a statement composed of fields separated by the character ; (semicolon) with the following structure:

Date: statement date (YYYYMMDD)
Heure: statement time (HHMMSS)
Type: statement type code (1=blood sugar, 2=injection, -2=temporary flow,
                                 3=carbohydrates, 4=activity)
Type of statement: in full letter
Value: statement value
Unit: unit of value
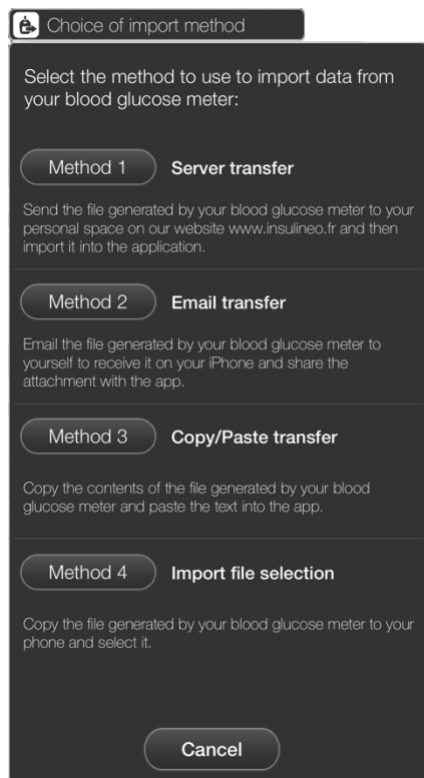Sugar: sugar in the urine
Acetone: acetone in the blood or urine
Insulin: name of the injected insulin
Flow: temporary flow
Intensity: intensity of effort during physical activity
Note: comment entered during the statement

10.4 Import data from your blood glucose meter

To be able to import data from your blood glucose meter, it must be able to generate a file in TXT or CSV format and encoded in UTF-8. Most blood glucose meters have this possibility in their interface when connected to a computer. Please refer to your meter's documentation.

There are 4 methods to import your blood glucose meter data into the **insulineo** app.

Click on the method you have chosen :

1: Transfer by server

2: Transfer by email

3: Transfer by copy/paste

4: Import file selection

Each of these methods is explained in detail in the following pages.

10.4.1 Method 1: Transfer by server

On the computer where you extracted the file from your blood glucose meter, go to the Internet on the page of our site www.insulineo.fr and access your personal space. Type the login email address and password. If you have already made backups with **insulineo** (cf. Chapter 10.1 Backup your data), you must use the same identifiers, otherwise, if you have not yet created your personal space, enter your e-mail address and choose a password (5 characters minimum). Keep these new identifiers in memory as they will be used to make your next backups in the application.

Once connected to your personal space, click on the Import data button from your glucometer. Select the type of glucometer you are using and the path of the file you just extracted from your meter.

Click the Scan File button. A preview of the file appears in a table with the first few lines of the file. For each column, specify whether to import it and what it corresponds to. When you are finished configuring the data to import, click the Import File button. Your glucometer data is now on our secure servers. *CAUTION: You can only send one data file at a time. A new sending of another file, will replace the last file sent.*

Once the file of your blood glucose meter on our servers, launch the **insulineo** app on your phone, click on the button ⚒ from the general menu, select the Import line and choose method 1.

Enter the e-mail address and password of your personal space.

To validate your identification, click the Done button on the keyboard when you have finished entering your password.

If you have your password, click on the button ❓ so that your credentials are sent to you by email.

The date and time of your import file deposited on our site is displayed at the bottom of the screen.

Click the Import button to download the file and start importing the data into the application.

10.4.2 Method 2: Transfer by email

The principle is to send you by email the file generated by your blood glucose meter so that you can receive it on your phone. (*Note: if your file has a .TXT extension, please rename it to .CSV before sending it to you by* email.)

Check the email in your phone's email and open the attachment. Click on the sharing icon and choose to share it with the **insulineo** app.

Select the type of glucometer you use from the list of blood glucose meters managed by the app. If your meter is not present in this list, please send an email to technical support (support@insulineo.fr) with the brand and reference of your blood glucose meter and the file it generated.

Click the Analyse button to verify the file and preview the data you want to import.

Click the Import button to confirm the import of the data into the application.

10.4.3 Method 3: Copy/paste transfer

Open the file generated by your blood glucose meter in a word processing application on your phone, select the contents of the file and copy it to the clipboard.

Launch the **insulineo** app on your phone, click on the button ⚒ from general menu, select the Import line and choose method 3.

Select the type of glucometer you use from the list of blood glucose meters managed by the app. If your meter is not present in this list, please send an email to technical support (support@insulineo.fr) with the brand and reference of your blood glucose meter and the file it generated.

If the contents of the automatically pasted clipboard seem correct, click on the Import button to start importing the data into the application.

## 10.4.4 Method 4 : import file selection

The principle is to copy the file generated by your blood glucose meter to your phone's files or to any other internet disk space solution as long as your phone can access it.

Select the type of glucometer you use from the list of blood glucose meters managed by the app. If your meter is not present in this list, please send an email to technical support (support@insulineo.fr) with the brand and reference of your blood glucose meter and the file it generated.

If the contents of the automatically pasted clipboard seem correct, click on the Import button to start importing the data into the application.

10.5 Updates for application data

As the app is constantly evolving, you will be asked from time to time to update the database regarding the carbohydrate booklet, the list of insulins, the list of blood glucose meters or the list of insulin pumps.
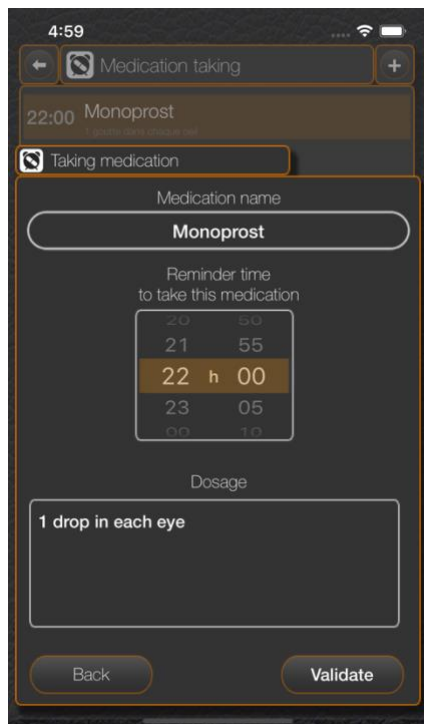
Click on the button ⚒ from general menu and select the Updates line to add the new items to your app.

11. THE UTILITIES

In addition to managing your diabetes, **insulineo** offers utilities such as taking medications other than insulin, managing your medical appointments or a notepad accessible directly from the application.
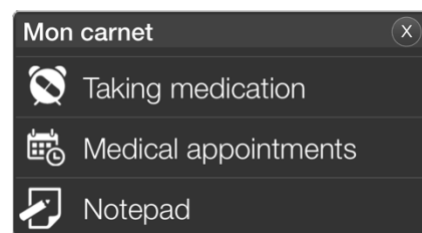
11.1 Medication reminders

If you are on a treatment other than insulin and should not forget to take medication at a specific time each day, use this utility to send you reminder notifications on your phone.

Click on the button ➕ to add a medication intake or click one of the rows to edit it. Swipe left a medication to delete it.

Give the name of the medication and the time you need to take it.

You can indicate the dosage of this medicine. It will be displayed in the notification for reminder.

You can add as many medications as you want. That is, if you need to take the same medication 2 times a day, create 2 separate lines with the same drug name but with 2 different hours for reminders.

11.2 Medical appointments

You can write all your medical appointments in the app and you will receive a reminder notification so you don't forget them.

In addition, the utility shows you all your upcoming appointments on a single page, from the nearest to the most distant in time.
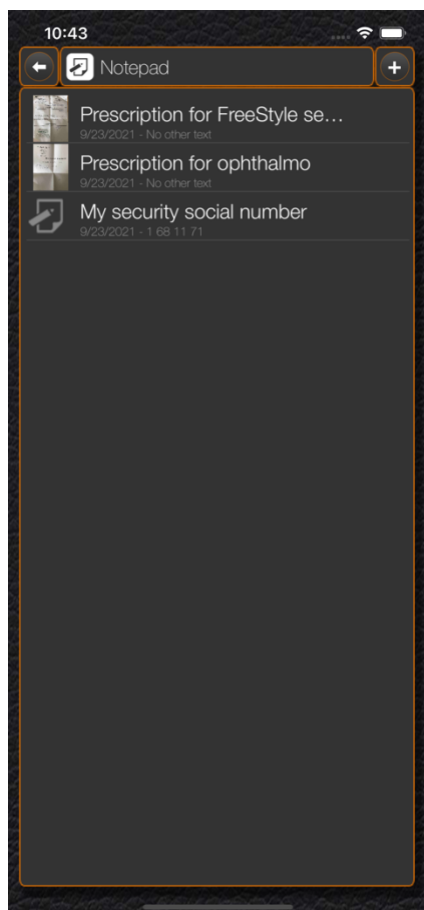
Click the button ➕ to add an appointment or click one of the rows to edit it.
Swipe left an appointment to delete it.

Indicate the type of appointment according to its nature. The main types of medical appointments are already present in the app, but you can create your own types of appointments by clicking the button ☰.

Give the date and time of your appointment as well as the time at which you wish to be notified of the reminder (at the time of the appointment, 5 min, 15 min, 30 min or 1h before the appointment, or even the day before the appointment).

You can enter a note to comment or give additional information about this appointment by clicking on the button 📝 (cf. Chapter 8. Entering a note).

11.3 Notepad

Use the notebook however you like.

You can save notes as texts and photos.

The first example of use is the scanning of your prescriptions (photo).

Click the button ➕ to add a note or click one of the lines to edit it. Swipe left a note to delete it.
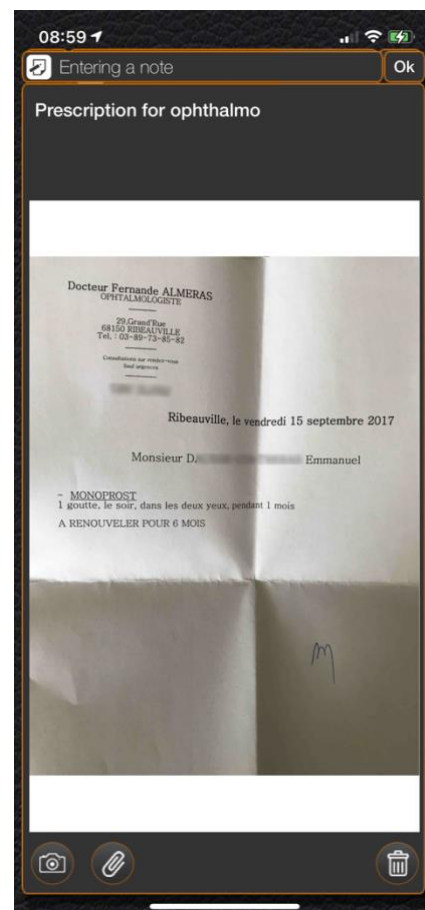
Tape your text or simply give a title to your note. To exit the text input mode, click the button Ok.

Click the button 📷 to open the camera or the button 📎 to choose a photo from your photo album.

Click the button 🗑 to remove the photo from the note.

You can zoom in or move around the photo with your fingers.

Click the button Ok to save your note.

12. THE TECHNICAL SUPPORT

If you encounter any problems on the use of the **insulineo** application, or if you want to make remarks or suggest improvements, do not hesitate to contact technical support.

Click on the button at the bottom of the general menu or send an email to support@insulineo.fr with a precise description of your request and, if necessary, a screenshot to illustrate your point of view.