



# USER GUIDE

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# POWER2DM

## DIABETES

The number of people that suffer from diabetes has increased over the last 50 years. Diabetes is a chronic disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces. Diabetes can be sorted into two categories:

### TYPE 1 DIABETES

In type 1 diabetes, little or no insulin is produced by the pancreas. People that suffer from type 1 diabetes need to administer insulin daily. The cause of type 1 diabetes is unknown and cannot be prevented.

Symptoms of type 1 diabetes include: excessive urine production, thirst, constant hunger, weight loss, vision changes, and fatigue.

### TYPE 2 DIABETES

In type 2 diabetes, the body cannot effectively use the insulin it produces. Around 90% of the people diagnosed with diabetes, has type 2 diabetes. The cause of type 2 diabetes is largely the result of obesity and lack of exercise.

Symptoms of type 2 diabetes are similar to those of type 1 diabetes, but are often less of later noticed.

## SELF-MANAGING DIABETES

Treatment of diabetes is mainly about self-management. Optimal treatment and ongoing management are the keys to living a normal life with diabetes. It is important to follow the medication schedule, taking the medications or insulin on time and in the correct dosages. It is also important to stick to a healthy diet as the food you eat has a direct effect on your glucose and insulin levels. Exercise is effective in managing blood sugar levels and improving insulin effectiveness. It also helps with weight management – keeping obesity at bay. However, good self-management with diabetes can be difficult for the patient and requires a great deal of discipline. Many patients therefore have difficulty in achieving their treatment goals.


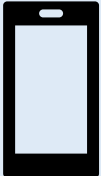

POWER2DM is designed to support patients in their self-management.

# WHAT IS POWER2DM?

POWER2DM is a collaborative European project with [multiple partners](#). Over the course of a few years, multiple research facilities and developers have worked together to make POWER2DM a reality.

The aim of the project is to deliver evidence-based personalised systems for type 1 and 2 diabetes patients. With POWER2DM, patients can manage and improve their own health and disease, with the help of their physician and POWER2DM systems.

POWER2DM consists of three systems:

 <p><b>POWER2DM PATIENT PORTAL</b></p> <p>The POWER2DM patient portal is a web application for the patient to facilitate their diabetes self-management.</p>	 <p><b>POWER2DM APP</b></p> <p>The POWER2DM app allows the patient to easily add measurement data on their phone/tablet.</p>	 <p><b>POWER2DM SHARED DECISION MAKING APPLICATION</b></p> <p>The POWER2DM shared decision making application allows the doctor (and patient) to set goals and track the self-management.</p>
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You, the reader, will use the POWER2DM patient portal (web application) and POWER2DM app. The POWER2DM shared decision making application will be briefly discussed in this guide.


# WHAT IS IN THIS GUIDE?

This guide shows you how to get started and explains the basics of the POWER2DM patient portal and POWER2DM app. Both the POWER2DM website and app is divided into different topics.




In the table of contents at the start of this guide you can easily navigate through the different topics. You can just click on the topic you want to go to and you will be directly automatically.



When a word in the text has a blue colour and underline, [like this](#). Or when you see the  symbol. You can click on it and you will be directed to a webpage with more detailed information about that particular topic.

For more information about the POWER2DM project and systems, you can visit the [power2dm.eu website](http://power2dm.eu).

# POWER2DM PATIENT PORTAL


The POWER2DM patient portal guides the user through his/her diabetes self-management process supporting the specification of self-management goals based on the physicians' treatment goals and treatment plans, and the planning of self-management activities based on these goals. Based on recorded data from the web or mobile app, the underlying [models](#)  will provide feedback about how successfully you have met your goals and activities as well as recommend interventions for optimising your self-management activities.

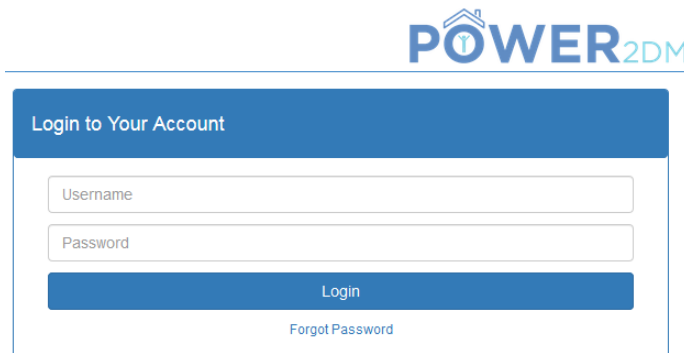
## GETTING STARTED

### YOUR ACCOUNT

The account is created by your physician. You will then receive an email to complete your registration. The email has a link, to set up a new password.

### LOGGING IN

Go to the [POWER2DM patient portal](#) . Use your username and password to log in to the patient portal. If you have forgotten your password you can click on *Forget Password* underneath the Login button (Figure 1).



The screenshot shows the login interface for the POWER2DM patient portal. At the top right, the logo for POWER2DM is displayed, with a house icon above the letter 'O' in 'POWER'. Below the logo is a blue header bar containing the text "Login to Your Account". Underneath the header, there are two white input fields with rounded corners. The first field is labeled "Username" and the second is labeled "Password". Below these fields is a blue button with the text "Login". Underneath the "Login" button is a link labeled "Forgot Password".

Figure 1: Login page

When you have successfully logged in, you will see the following screen (Figure 2).

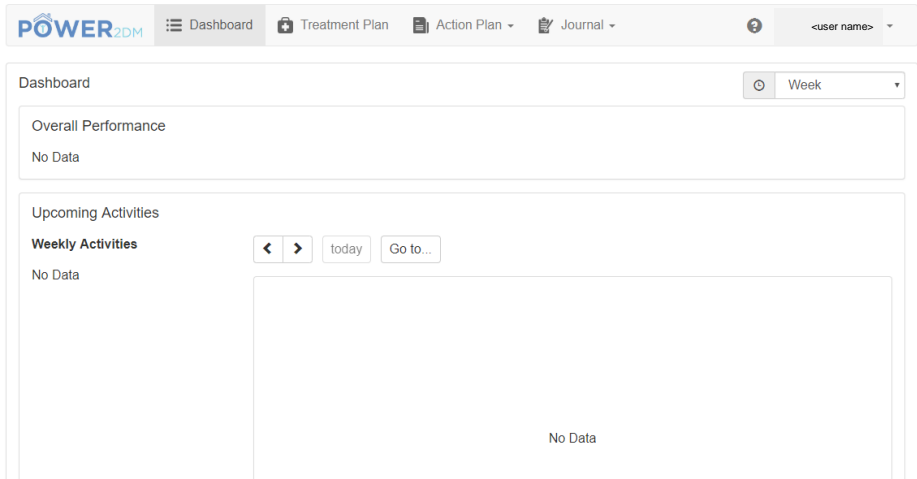


Figure 2: Dashboard / Homepage POWER2DM patient portal

In the next section we will discuss the different buttons, pages, and functionalities.

## DASHBOARD

When logging in you are directed to your dashboard, which is the home page of the patient portal. At the top of the screen you find the following four icons. These icons will direct to the different sections of the patient portal.



### DASHBOARD

Overview of your most important data for the current week.



### TREATMENT PLAN

Lists the personal treatment goals and activities from your doctor.



### ACTION PLAN


Consists of your goals and plans.




### JOURNAL

Collects and reviews your data.



On the top right part of the screen you'll find a  button and your user name, depicted as **<user name>** in these examples.

The  button provides additional information with respect to diabetes and its implications and includes a more extensive user manual.

The **<user name>** menu includes the user profile, the setting for the *action plan* and the button to sign out.

The POWER2DM logo (see Figure 2) within the menu bar opens the home page (dashboard) again. The homepage includes a dashboard (Figure 3) with an overview of your most important data for the current week. All items are colour coded using the following pattern:

- **Green** Everything is complete/okay
- **Orange** Something should be in progress at the moment
- **Red** Something is incomplete/wrong
- **Grey** Something to come up in the future / additional information

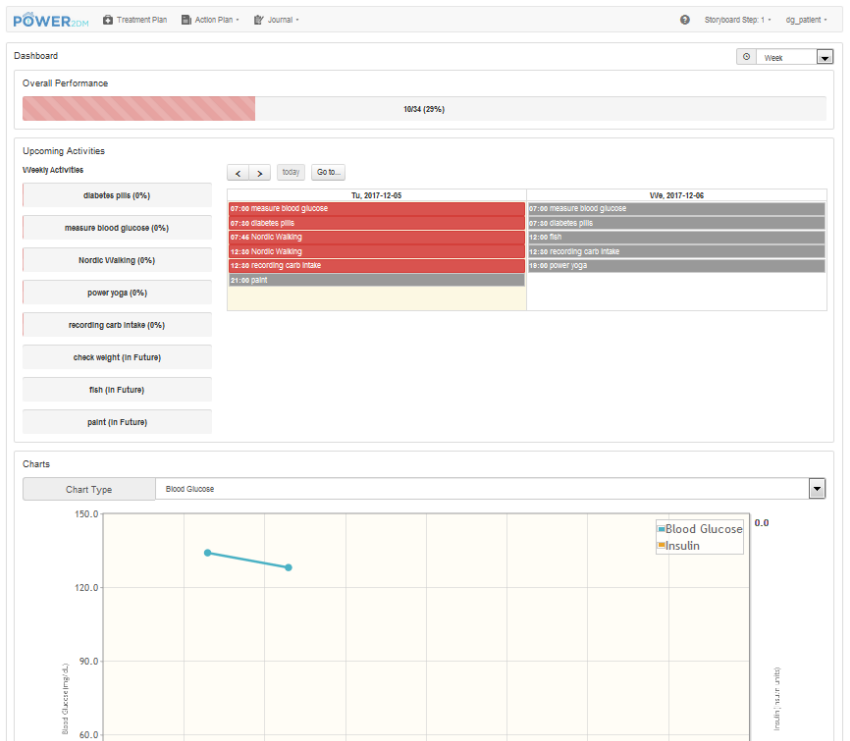



Figure 3: Overview homepage items

Figure 3 gives an overview about the dashboard items:

- Time selection window – allows the current time window to be viewed on suitable pages (shown on the top right)
- Overall performance – of the current week
- Upcoming activities - lists current and upcoming events of today and tomorrow. The user can enter results for incomplete events by clicking the corresponding activity.)
- Charts – the user can display a chart for the past week by selecting a chart type

## TREATMENT PLAN

Click on the  menu to go the treatment plan menu. This menu item lists the patient’s personal Treatment Plan from his/her doctor (see Figure 4).

The treatment plan lists the personal recommendations from your doctor. Those recommendations can not be edited but active ones (highlighted in blue) can be adopted to your goals and calendar. ✕

**Treatment Plan**

Start Date	Target Date	Target Value	Treatment Goal	Treatment Activities	Ordered By
2017-01-08	2017-12-31	Medication Adherence 90%	Adhere to your medication plan and log your insulin intakes!	-	Javier Delgado
2017-01-08	2017-12-31	BGM Adherence 90%	Adhere your blood glucose monitoring schedules!	• Measure Blood Glucose	Javier Delgado
2017-01-08	2017-12-31	HbA1c 7%	Our main aim is to decrease your HbA1c to 7.0	-	Javier Delgado
2017-01-02	2017-12-31	Medication Adherence 100%	Adhere to your medication plan and log your insulin intakes precisely...	-	Javier Delgado
2017-01-02	2017-12-31	Average Daily Carbs 90g	Log your carbohydrate intakes precisely!	-	Javier Delgado
2017-01-02	2017-12-31	Log Exercises	Log your exercises (walking, running, swimming, etc)!	-	Javier Delgado
2017-01-02	2017-12-31	HbA1c 7%	Our goal of HbA1c for your next visit	-	Javier Delgado
2017-01-02	2017-12-31	HbA1c 7%	Our goal of HbA1c for your next visit	-	Javier Delgado
2017-01-02	2017-12-31	BGM Adherence 100%	Strictly adhere the KADIS BG monitoring protocol as planned!	• Measure Blood Glucose	Javier Delgado
2017-01-02	2017-12-31	-	Strictly adhere the KADIS Data Collection action plans to be ready for KADIS Metabolic Fingerpring Identification process	-	Javier Delgado


Figure 4: Treatment plan

A treatment plan consists of one or more treatment goals. A treatment goal can in turn include one or more treatment activities suggested by your doctor

to help achieve your treatment goal. The start date and the target date indicate the valid period for a treatment goal. The target value indicates what the treatment goal aims to achieve.

To adopt a treatment goal as one of your personal self-management goals or to schedule a treatment activity in your calendar, just click on the treatment goal. You can then also refine the planning, e.g. adding a more detailed description to the goal or adapting the schedule for the activity. Afterwards, your scheduled activities will appear in the calendar.

## ACTION PLAN

Click on the  button to the action plan menu. The action plan menu enables you to list, evaluate, edit and review the relevant personal information. This includes the management of personally defined goals, the management of planned activities (to achieve the defined goals), the review for your activities and the charts. Additionally, this menu item includes two tools, the Energy Battery and the Relaxation Tip Editor.

## GOALS

Sometimes the treatment goals of the medical care providers are more general, e.g. “Do some sports” or “Reduce weight”. To react to those treatment goals, the POWER2DM patient’s portal allows you to define concrete individual goals tailored to your specific requirements and needs, e.g. “10 km running each week”. To finally achieve your personal goal, you may later assign planned activities to the personal goals.

First, all of your saved self-management goals are listed:

- Start Date and Target Date – indicate the valid period of your Goal
- Goal – describes the goal itself
- Related Treatment Goal – refers to the related Treatment Goal specified by your doctor
- Description – includes a more detailed description of your goal for your reference.
- Motivation – write down what motivates you to fulfil this goal (e.g. motivating ideas for when you finally have reached your goal).

By using the button “+Add”, new goals can be added (Figure 5). By clicking on existing goals you can edit or delete them.

Some treatment goals from your doctor might be more general (e.g. "reduce weight"). In order to react to those you can set up more specific personal goals tailored to your lifestyle (e.g. "10 km running each week").

Goals

+ Add

Start Date	Target Date	Goal	Related Treatment Goals	Description	Motivation
2017-10-20	2017-12-03	walking 3x	-	-	-
2017-10-19	2017-12-03	Eat fish more often	-	-	-
2017-08-29	2017-12-10	relaxing	-	some relaxation exercises	I want to reduce my stress
2017-01-08	2017-12-03	Adhere to your medication plan and log your insulin intakes!	<ul style="list-style-type: none"> <li>Adhere to your medication plan and log your insulin intakes! (Medication Adherence 90%)</li> </ul>	-	-
2017-01-08	2017-12-03	Adhere your blood glucose monitoring schedules!	<ul style="list-style-type: none"> <li>Adhere your blood glucose monitoring schedules! (BGM Adherence 90%)</li> </ul>	daily	-
2017-01-02	2017-12-31	record carb intake	<ul style="list-style-type: none"> <li>Log your carbohydrate intakes precisely! (Average Daily Carbs 90g)</li> </ul>	-	-
2017-01-02	2017-12-03	Log your exercises (walking, swimming, etc)!	<ul style="list-style-type: none"> <li>Log your exercises (walking, running, swimming, etc)! (Log Exercises)</li> </ul>	-	-

Figure 5: Personal goals

## CALENDAR

The purpose of the Calendar is twofold – It serves for the planning of activities supposed to help to achieve the goals defined before and if the planning of activities is done it gives an overview of already planned activities.

The calendar serves as a planning tool for specific activities and schedules that help you to achieve your defined goals. For example, you can break down your goal of "10km running each week" into five schedules for exercise on working days.

Calendar

+ Add

Completed In Progress Incomplete In Future Observation

Weekly Activities

fish (50%)
paint (33%)
power yoga (33%)
diabetes pills (29%)
measure blood glucose (29%)
recording carb intake (29%)
Nordic Walking (25%)
check weight (0%)

< > today Go to... 2017 November 27 — December 03 Week Overview List 2 Days

Mo, 2017-11-27	Tu, 2017-11-28	We, 2017-11-29	Th, 2017-11-30	Fr, 2017-12-01	Sa, 2017-12-02	Su, 2017-12-03
07:00 measure blood	07:00 measure blood	07:00 measure blood	07:00 measure blood	07:00 measure blood	07:00 measure blood	07:00 measure blood
07:30 diabetes pills	07:30 diabetes pills	07:30 diabetes pills	07:30 diabetes pills	07:30 diabetes pills	07:30 diabetes pills	07:30 diabetes pills
12:30 recording carb	07:45 Nordic Walkin	12:00 fish	12:30 recording carb	12:00 fish	12:30 recording carb	08:00 check weight
18:00 power yoga	12:30 Nordic Walkin	12:30 recording carb	13:54 Stress	12:30 recording carb	14:02 Sleep	
	12:30 recording carb	18:00 power yoga	18:30 Nordic Walkin	19:00 power yoga	18:30 Nordic Walkin	12:30 recording carb
	21:00 paint		21:00 paint		21:00 paint	

Figure 6: Calendar application

The Calendar Application lists all planned activities (see Figure 6). The week may be adjusted by using the navigation arrows. New activities can be added by choosing the button “+Add” or clicking on an empty calendar slot. Existing activities can be edited/deleted by choosing the corresponding activity on the left side of the Calendar.

The buttons on the top right side represent different states of an activity:

- Completed (green): activities effectively performed
- In Progress (yellow): activities that are currently performed
- Incomplete (red): activities planned, but not performed
- In Future (grey): upcoming and future activities
- Observations (blue): additional observations recorded in a journal

You can enable and disable these states by clicking on the appropriate button.

By clicking on a calendar event, you can insert data (e.g. your blood glucose values) to complete an activity for that scheduled time. When completed, the colour of the activity will turn from e.g. red to green.

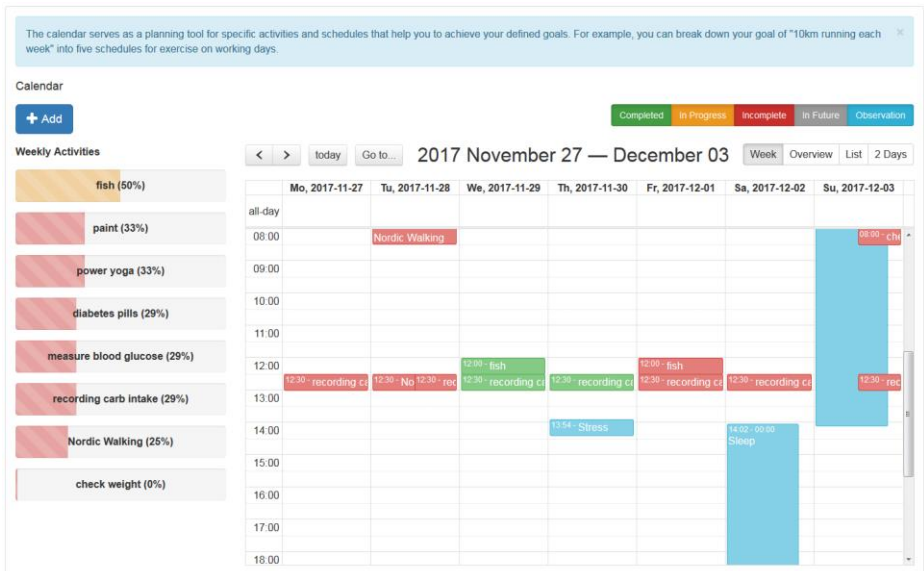


Figure 7: Calendar view (week)

Stored activities may be shown in different views:

- Week – presents a calendar view (see Figure 7)

- Overview – presents an overview of all activities for each day of a week (see Figure 6)
- 2 Days – presents an overview of two days (today and tomorrow)

### Add an activity

By clicking on "+Add" or on an entry in the left column "Weekly Activities" a window for managing activities opens (see Figure 8). You can add new entries or edit or delete the respective entries. The fields required for the entry are marked with "\*", add or edit must be confirmed with "Save", a delete with "Delete".

Activity
✕

---

Start Date *	2019-04-08
Target Date *	2019-04-14
Activity *	<input type="text"/>
Category *	<input type="text"/>
Related Goals	<input type="text"/>
Description	<input type="text"/>
Reminder	<input type="text" value="Off"/>
Schedule *	<div style="display: flex; gap: 10px;"> <div style="border: 1px solid #ccc; padding: 2px 5px; border-radius: 4px;">+ Add schedule</div> <div style="background-color: #f00; color: white; padding: 2px 5px; border-radius: 4px;">✕ Delete</div> </div>

\* Required field

Cancel

✔ Save

Figure 8: Add an activity

The activity-related schedule is created in a separate window. Click on "+Add schedule" or on a table entry in "Schedule" to open the window (see Figure 9) in which you can add new entries or edit or delete the respective entries. The fields required for the entry are marked with "\*", and add or edit must be confirmed with "Save", a delete with "Delete". Please note that you must include at least one schedule to finally save an activity.

Schedule x

---

All-day *	<input type="button" value="Yes"/> <input type="button" value="No"/>
Weekdays *	<input type="button" value="Mo"/> <input type="button" value="Tu"/> <input type="button" value="We"/> <input type="button" value="Th"/> <input type="button" value="Fr"/> <input type="button" value="Sa"/> <input type="button" value="Su"/> <input type="button" value="Working days"/> <input type="button" value="Daily"/>
From *	<input style="width: 100%;" type="text"/>
To *	<input style="width: 100%;" type="text"/>

\* Required field

Figure 9: Scheduling an activity

## REVIEW

The review provides you with comprehensive feedback on your performance and should be reviewed regularly – at least once a week. The review aims at examining past activities and their recordings in order to evaluate your progress and how successfully you have met your goals. It covers your overall performance, feedback on the different categories of activities, feedback on additional recorded data in your journals and feedback on each goal. You can receive specific tips for each point.

### *Starting the review & overall performance*

The review starts with selecting the review period in the top right corner (see Figure 10). The default period is the past week, however longer periods are also possible (e.g. last month). Before you perform the review, you should check whether you have recorded all the data for the review period. For this reason, click on the button “Show/hide calendar” and fill in any forgotten entries. The Overall Performance indicates how successfully you have completed your planned activities in total within the review period.

Show/hide calendar

2017-11-29 - 2017-12-05

#### Overall Performance



#### Tips

- It seems as if it is difficult to reach your goal. Can it be that you have set your goal too high? Often one is more successful with smaller intermediate steps. Consider whether it is useful to reduce your goal in such a way that you need to achieve the goal a bit longer, the goal is challenging for you, but still achievable in everyday life.

Figure 10: Review – calendar and overall performance

### Activity feedback

Next, the system provides feedback how successfully you have completed your planned activities for each category (see Figure 11). The column “Performance” describes the performance in percent (e.g.43%) and indicates the number of completed activities (e.g. “3/7” means 3 activities from 7 activities were completed). The column “Tips” either acknowledges your progress and provides tips for improving your diabetes self-management.

Activity Feedback			
Category	Performance	Related Activities	Tips
Meal	10/18 (56%)	<ul style="list-style-type: none"> <li>• fish</li> <li>• recording carb intake</li> </ul>	<ul style="list-style-type: none"> <li>• Good that you are still trying! Continue your good work!</li> </ul>
Weight	1/2 (50%)	<ul style="list-style-type: none"> <li>• check weight</li> </ul>	<ul style="list-style-type: none"> <li>• Even small successes count! It might be good to think about how you can further improve on your planned activity next week.</li> </ul>
Other	9/20 (45%)	<ul style="list-style-type: none"> <li>• paint</li> <li>• diabetes pills</li> </ul>	<ul style="list-style-type: none"> <li>• Good that you are still trying! Continue your good work!</li> </ul>
Blood Glucose	6/14 (43%)	<ul style="list-style-type: none"> <li>• measure blood glucose</li> </ul>	<ul style="list-style-type: none"> <li>• Good to know. Many people with diabetes worry about having low blood sugars (hypoglycaemia, or 'hypo's'). <a href="#">Click here</a> if you want to read more about fear of hypoglycaemia. <a href="#">Click here</a> if you want to do it later, and schedule an activity.</li> </ul>

Figure 11: Review – activity feedback



## Journal Feedback

The review menu item gives also feedback (tips) on additional data you record in your journals.

Category	Tips
Sleep	<ul style="list-style-type: none"><li>It seems your sleep quality was a bit low in the Two Weeks. We have an exercise to help you improve your sleep quality. Would you like to do it now? If yes, than click on <a href="#">Energy Battery</a>. If you would like to do the Energy Battery later than schedule an <a href="#">activity</a></li></ul>
Stress	<ul style="list-style-type: none"><li>Try the <a href="#">Breathing Meditation (5 mins)</a> for reducing stress</li></ul>

Figure 12: Review – journal feedback

## Goals Feedback

Typically, activities are associated to personal goals. This step (see Figure 13) presents you an overview how successfully you have met your goals with the activities of the review time-range. A goal can be related to one or several activities.

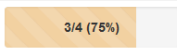


Goal	Performance	Related Activities	Tips
Eat fish more often	 3/4 (75%)	<ul style="list-style-type: none"><li>fish</li></ul>	<ul style="list-style-type: none"><li>Keep going! It might help to consider in which situations you have already succeeded in achieving your goals</li></ul>
record carb intake	 7/14 (50%)	<ul style="list-style-type: none"><li>recording carb intake</li></ul>	<ul style="list-style-type: none"><li>It seems as if you are doing less than you hoped :-). Can we help you find the reason? Click here to <a href="#">continue</a>.</li></ul>
...			
Log your exercises (walking, swimming, etc)!	 3/8 (38%)	<ul style="list-style-type: none"><li>Nordic Walking</li></ul>	<ul style="list-style-type: none"><li>It seems as if it is difficult to reach your goal. Can it be that you have set your goal too high? Often one is more successful with smaller intermediate steps. Consider whether it is useful to reduce your goal in such a way that you need to achieve the goal a bit longer, the goal is challenging for you, but still achievable in everyday life.</li></ul>

Figure 13: Review – goal feedback

The column “Performance” describes the performance in percent (e.g. 43%) and indicates the number of completed activities that are related to the associated goal (e.g. “3/7” means 3 from 7 activities have contributed to the associated goal). The column “Tips” acknowledges your progress and provides tips for improving your diabetes self-management.

The button “Goal Problem Identification” aims to support you in case you have problems to fulfil one of your goals. It opens a workflow guiding you with several questions to help better identify the problem that hampers your progress. Once identified, POWER2DM suggests an intervention to cope with the problem (see Figure 14).

Did you have problems with any of your goals? x

Yes

Which goal did you have problems with?

*Glucose monitoring*

Do you recognize any of the following problems?

*I monitor too little*

Do any of these problems sound familiar?

*I don't like needles*

**If you dislike injections look at the following [article](#)**

Figure 14: Goal problem identification

## Charts

The diagrams provide you with a graphical presentation of the most relevant values from the journals. With the help of the selection list you can switch between the available diagram types.

## CHARTS

Different types of charts support the visualisation of the recorded observations and the evaluation of personal improvement respectively. To display a diagram, it is required:

- to specify the time range in the select box in the top right corner and

- to select the chart type (select box “Chart Type”). Possible categories are glucose monitoring, blood pressure, exercise, meal, sleep, stress and weight

If you move the mouse pointer over a data point, you can see the detailed values.

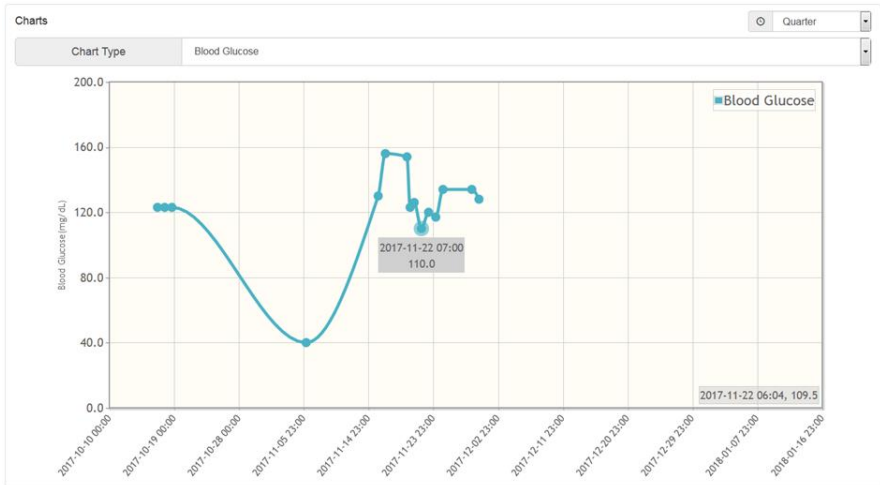


Figure 15: Charts



## ENERGY BATTERY

The Energy Battery aims to increase your awareness of how you either gain or lose your energy to manage your health. Hints are provided on how you can recharge your energy.

In the first step (raise awareness, see Figure 16), the Energy Battery tells you about activity categories where you might lose energy and about activity categories that will help recharge your energy battery. You can also watch a video explaining the Energy Battery and these different activity categories.

**Energy Battery**

[Raise Awareness](#)
[Energy Diary](#)
[Feedback](#)

[▶ Play Video](#)

Our body and brain are closely connected, and work as a sort of battery. When we are born and healthy, the battery is fully charged. When we get older and/or have (mental) health problems, the battery loses energy. When we keep spending energy and do not recharge the battery enough, the result is feeling tired, exhausted and/or depressed/tense.

It is quite easy to understand how our battery loses energy... Usually we lose energy on all the things that we (tell ourselves we) "must do" - these are

Figure 16: Energy batter categories

In the next step (Energy Diary, see Figure 17), you will be asked to record all your activities for the next 7 days and assign them to one of the four categories, explained in Step 1 (active relaxation, passive relaxation, must do's, sleep), by using the button “+Add”.

Energy Battery

Raise Awareness      Energy Diary      Feedback

Let's now have a look at how your activities contributes to your Energy Battery. To better understand how your battery loses and recharges energy, and thus make you feel (less) tired, depressed or tense, we like to help you monitor your activities. In the next 7 days you will be asked to assign the hours of each day to one of the four categories (active relaxation, passive relaxation, must do's and sleep) and how to indicate the type of activity.

Let's now create schedules for all of your energy battery activities.  
Try to cover the whole week without gaps for optimal results.

+ Add      Evaluate

Mo	Tu	We	Th	Fr	Sa	Su
00:00 - 08:00 Sleep	00:00 - 08:00 Sleep	00:00 - 08:00 Sleep	00:00 - 08:00 Sleep	01:30 - 10:30 Sleep	01:30 - 10:30 Sleep	00:00 - 08:00 Sleep
08:00 - 09:00 Shower and dress up	08:00 - 09:00 Shower and dress up	08:00 - 09:00 Shower and dress up	08:00 - 09:00 Shower and dress up	08:00 - 09:00 Shower and dress up	10:30 - 11:00 Eat breakfast	10:30 - 11:00 Eat breakfast
09:00 - 09:30 Eat breakfast	09:00 - 09:30 Eat breakfast	09:00 - 09:30 Eat breakfast	09:00 - 09:30 Eat breakfast	09:00 - 09:30 Eat breakfast	11:00 - 14:30 Gardening	11:00 - 14:30 Gardening
09:30 - 10:00 Drive to work/home	09:30 - 10:00 Drive to work/home	09:30 - 10:00 Drive to work/home	09:30 - 10:00 Drive to work/home	09:30 - 10:00 Drive to work/home	14:30 - 15:00 Eat lunch	14:30 - 15:00 Eat lunch
					15:00 - 20:00 Band rehearsal	15:00 - 20:00 Read a book

Figure 17: Energy battery – energy diary

After 7 days, you can generally evaluate the recorded activities by pressing the button “Evaluate” (see Figure 18) to simply evaluate these activity categories (must do's, the active and passive relaxation activities) based on your personal feeling.

Energy Diary ×

---

In the past few days you have monitored your activities, regarding passive relaxation, active relaxation, sleep and "must do's".  
When you look at the activities, and the amount of "active relaxation", "passive relaxation", "must do's" and "sleep". What do you notice?

Generally, the **must do's**

... are my main activities during the week ▼

Generally, **passive relaxation** is

... present (almost) every day /enough ▼

Generally, **active relaxation** is

... not present (almost) every day / enough ▼

Figure 18: Energy battery – evaluation

In the final step (feedback, see Figure 19), the POWER2DM Energy Battery provides some feedback with hints based on your personal evaluation.

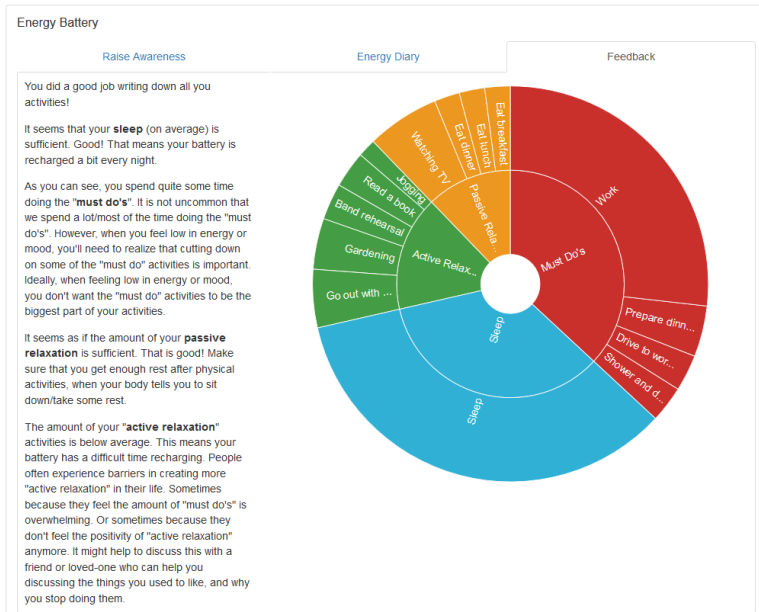


Figure 19: Energy battery - feedback

## VALUE COMPASS

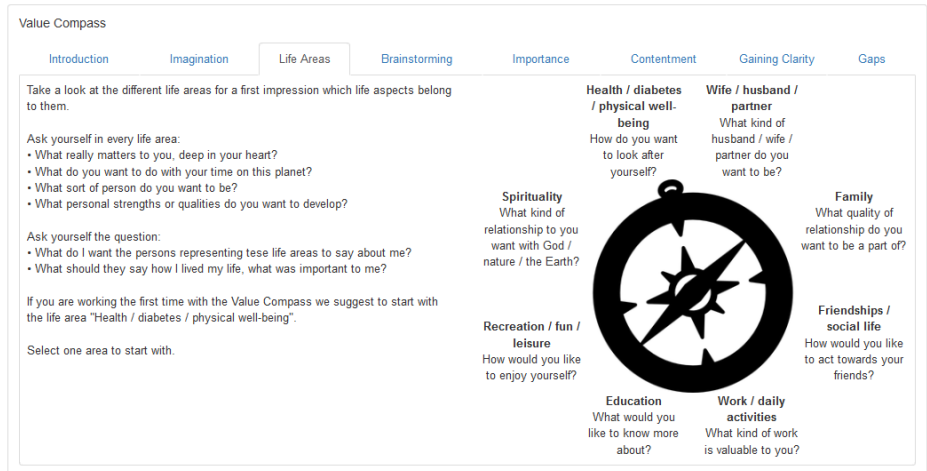


Figure 20: Value compass – life areas

The value compass is an that helps you to examine what is important to you in life, and how your diabetes relates to those important things. It is a first step in finding out how to integrate diabetes in your daily life positively, while doing all the things that are important to you. The value compass consists of 8 subsections, starting from Introduction and ending at Gaps (see figure 20).



## RELAXATION TIPS

The relaxation tips help to provide you with your own personal tips in stressful situations. You should revise and / or expand this list according to your preferences.

Click on "+Add" to add new relaxation tips. Click on an existing tip in the table to open a window (see Figure 21, 22) where you can edit or delete the respective tip. The fields required for the entry are marked with "\*", add or edit must be confirmed with "Save".

Relaxation tips can serve as a basis for possible relaxing activities during stressful periods. Those tips can be adjusted and extended to your personal preferences. ✕

**Relaxation Tips**

+ Add

Tip	Degree of relaxation
Exercise or walk	Very high
Listen to music	Very high
Spend time with friends or family	High
Play video games or surf the internet	High
Watch television or movies	High
Spend time doing a hobby	Medium
Take a nap	Medium
Pray	Medium
Read something	Medium
Go to church or religious service	Low

Figure 21: Relaxation tips – list of tips

Relaxation Tips ✕

Tip \*

Degree of relaxation \*

\* Required field

Cancel ✓ Save

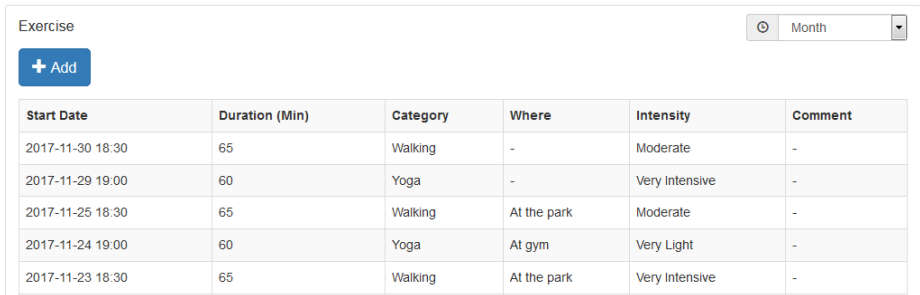
Figure 22: Relaxation tips – add an personal tip

# JOURNAL

Your journals list all the values you have recorded. In detail the following items can be collected:

	Blood glucose
	Blood pressure
	Comment
	Exercise
	Meal
	Problem
	Sleep
	Stress
	Weight
	Well-done diary

By choosing a category (e.g. Blood Glucose, Exercise), the system lists all the stored entries of this particular journal category (see Figure 23 for Exercise). It is also possible to add a new journal entry by clicking on the “+Add” button. Any of the listed journal entries may also be edited/deleted by clicking on the corresponding row.



The screenshot shows a web interface for the 'Exercise' journal category. At the top left, the word 'Exercise' is displayed. To its right is a filter dropdown menu set to 'Month'. Below this is a blue button with a white plus sign and the text '+ Add'. The main part of the interface is a table with six columns: Start Date, Duration (Min), Category, Where, Intensity, and Comment. The table contains five rows of data representing exercise entries.

Start Date	Duration (Min)	Category	Where	Intensity	Comment
2017-11-30 18:30	65	Walking	-	Moderate	-
2017-11-29 19:00	60	Yoga	-	Very Intensive	-
2017-11-25 18:30	65	Walking	At the park	Moderate	-
2017-11-24 19:00	60	Yoga	At gym	Very Light	-
2017-11-23 18:30	65	Walking	At the park	Very Intensive	-

Figure 23: Journal – exercise

## Adding a new journal entry

Adding new journal entries is performed in a separate form that provides relevant input fields. Some of the input fields are optional, some mandatory. The latter are marked with a star “\*” (see Figure 24). Whenever all mandatory fields are provided, it is possible to store the journal entry by pressing the “Save” button.

Exercise X

Start Date *	2017-12-11 12:24
Duration *	60 <span style="float: right;">Min</span>
Category	Horse Riding <span style="float: right;">▼</span>
Where	Other <span style="float: right;">▼</span>
Intensity *	Intensive <span style="float: right;">▼</span>
Comment	<input type="text"/>

\* Required field

Figure 24: Journal entry form - exercise

## USER OPTIONS

### Profile

The Profile (see Figure 25) is used display your personal information. It includes your username, your gender, your E-mail, your date of birth, your diabetes type, your height and whether you are smoking. Depending on your answers appropriate tips will be selected in the Review phase. The profile data is normally collected during your POWER2DM patient registration and cannot be edited here.

Profile	
Username	dg_patient
Gender	Male
E-mail	
Date of Birth	
Diabetes Type	Type 1 diabetes <span style="float: right;">▼</span>
Height	190
Are you smoking?	No <span style="float: right;">▼</span>

Figure 25: User profile



## Settings

In the Settings (see Figure 26), you can make various adjustments concerning the display of your POWER2DM web interface, for example, your language preference.

You can configure the following items:

- Language – possible languages are English, German, Dutch and Spanish
- First day of the week – you can insert the day of the week your calendar should start with
- Dashboard elements – you can indicate which elements should be presented at your dashboard
- Tips – you can choose whether to maximize or minimize the tips for the different menu items. In case you choose “Minimize” you can still toggle those tips by clicking on the “i” icon in the menu bar
- Animations – you can indicate if various interactive user interface elements (e.g. progress bars, charts) shall be animated or displayed without delay. Choosing “Off” can improve the performance on mobile devices

Changes must be confirmed by clicking on "Save".


Settings	
Language	English
First day of the week	Mo
Dashboard elements	<input checked="" type="checkbox"/> Upcoming Activities <input checked="" type="checkbox"/> Charts
Hypo Threshold	72 mg/dL
Hyper Threshold	180 mg/dL
Blood Glucose Unit	mg/dL
Meal Unit	BU
Tips	Maximize
Animations	On
<input type="button" value="Save"/>	


Figure 26: User settings

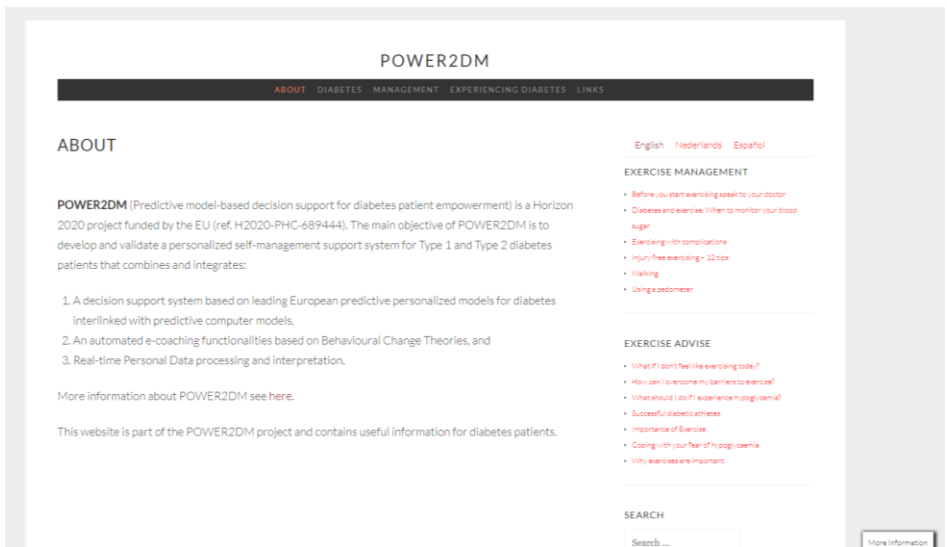
## Logout

You can logout by selecting the submenu “Sign out” item.

## MORE INFORMATION

Clicking on the information symbol  provides further information. You are strongly encouraged to read this material carefully in order to gain knowledge about diabetes and the challenges when facing diabetes.

When you choose the Info materials option by clicking on “POWER2DM Info Material”, you will be redirected to the public [POWER2DM information site](#)  (see Figure 27). Here you may find answers to many questions ranging from what is diabetes to useful tips on how to manage diabetes in the day to day business.



POWER2DM

ABOUT DIABETES MANAGEMENT EXPERIENCING DIABETES LINKS

### ABOUT

**POWER2DM** (Predictive model-based decision support for diabetes patient empowerment) is a Horizon 2020 project funded by the EU (ref. H2020-PHC-689444). The main objective of POWER2DM is to develop and validate a personalized self-management support system for Type 1 and Type 2 diabetes patients that combines and integrates:

1. A decision support system based on leading European predictive personalized models for diabetes interlinked with predictive computer models.
2. An automated e-coaching functionalities based on Behavioural Change Theories, and
3. Real-time Personal Data processing and interpretation.

More information about POWER2DM see [here](#).

This website is part of the POWER2DM project and contains useful information for diabetes patients.

English Nederlands Español

### EXERCISE MANAGEMENT

- Before you start exercising speak to your doctor
- Diabetes and exercise: When to monitor your blood sugar
- Exercising with complications
- Injury free exercising - 12 tips
- Walking
- Using a pedometer

### EXERCISE ADVISE

- What if I don't feel like exercising today?
- How can I overcome my barriers to exercise?
- What should I do if I experience hypoglycaemia?
- Successful diabetic athletes
- Importance of Exercise
- Coping with your fear of hypoglycaemia
- Why earbuds are important

SEARCH

Search ...

More information

Figure 27: POWER2DM information site

The information material comprises the following categories

- About – the homepage of the information material. There is also a list of tags of the most popular tags that link to related articles
- Diabetes – general information about diabetes, treatments and measurements
- Management – information about nutrition and exercises

- Experiencing Diabetes articles about how to manage your emotions, about the daily life with diabetes, how to deal with signs of troubles, and what to do in case of being sick with diabetes
- Patient Forums – established public patient’s forums.

On this page you will find a more extensive user manual. If your browser can open PDF files, then document will be displayed directly - otherwise you can download it by clicking on "Download".

# POWER2DM APP

The POWER2DM app is an app for the user to easily register, track, and edit their measurements and goals.

## GETTING STARTED

### DOWNLOAD THE APP

Currently, the app can be downloaded on IOS and Android systems from the [iHealth website](#) (Figure 1). Open the website on your phone (or tablet) and follow the steps on the website to download the app.

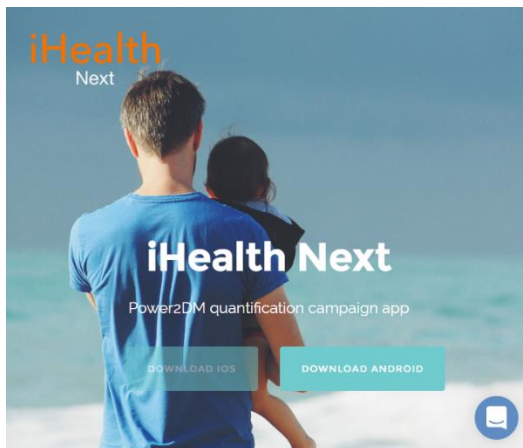


Figure 1: iHealth website to download the app

### YOUR ACCOUNT

The account is created by your physician. You will then receive an email to complete your registration. The email has a link, to set up a new password.

### LOGIN IN

Use your username and password to log in to the app. If you have forgotten your password you can click on *Forget Password* underneath the LOGIN button (Figure 2).

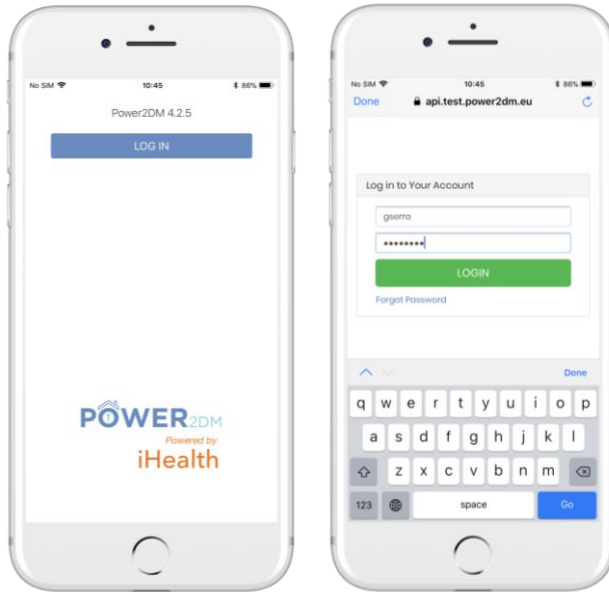


Figure 2: Log in to POWER2DM app

When you have successfully logged in, you will see the following screen (Figure 3).

For this guide we showcase screenshots of a phone with an IOS operation system. The screen the button placement will be different on Android, however the buttons will have the same meaning and look the same.

In the next section we will discuss the different buttons, pages, and functionalities.

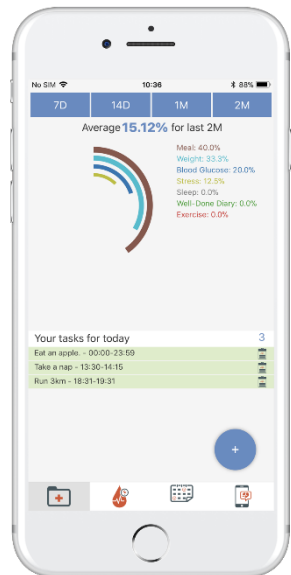


Figure 3: Dashboard

# DASHBOARD

On either the top or bottom the screen you'll find these 4 buttons:



## DASHBOARD

Shows your tasks and graph summaries

## MEASUREMENT

Here you can add and save your data and measurements

## HISTORY

Overview of your measurements and an edit mode

## SETTINGS

All app settings and logout

With these 4 buttons you can navigate through the app. The app allows you to easily add data, measurements and to review them.

The dashboard will showcase the following things:

Time period for summary

Complete tasks summary

Tasks provided by the doctor or the user.

*All the tasks are added on the POWER2DM web applications*

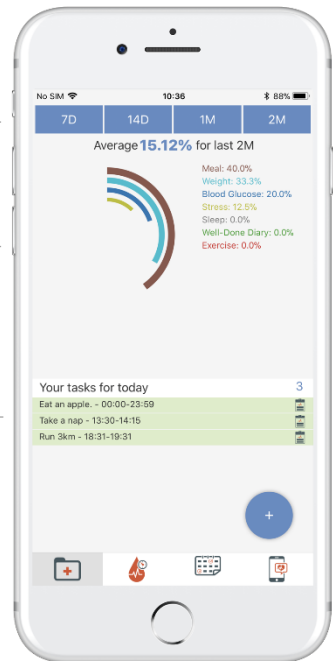



Figure 4: Dashboard

On the dashboard (Figure 4) you can view your task summaries of a specific time period. The tasks cannot be added on the app. Tasks are added on the POWER2DM web application by either the doctor or the user.

You can tap the  button, on either the top or bottom of the screen, to locate the blood glucose graph (Figure 5).


Tap this area to view the blood glucose graph

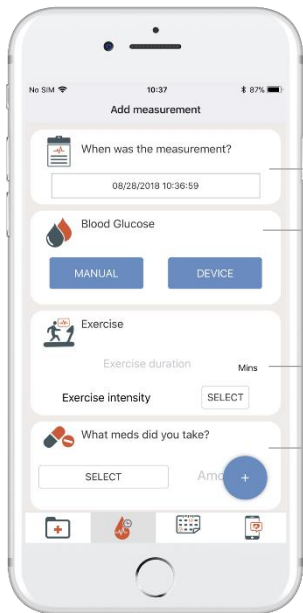
Blood glucose graph



## MEASUREMENT

Figure 5: Blood glucose graph

Tap on the  button, on either the top or bottom of the screen, to go to the measurement main screen. On this page you can add measurements.



Date/time of measurement

Glucose  
*It can be entered manually or using the BG5 device ([here](#))*

Exercise  
*Duration and intensity should be included*

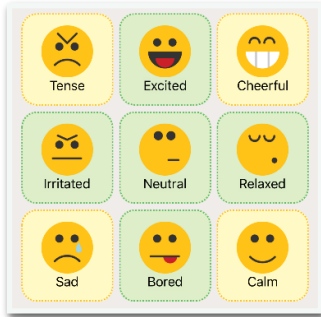
Drugs  
*Only the authorized drugs for the patient*

Figure 6: Measurements

More information about how to add glucose measurement manually or via the iHealth BG5 device can be found [here](#). 

Scroll down to add more measurements.

**Meal**  
*Period, grams/quantity and amount of calories should be included.*



Stress level (1-5)

Save measurements

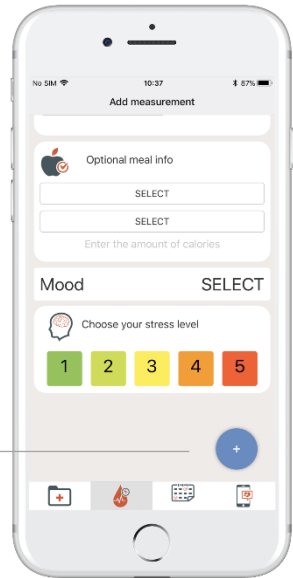

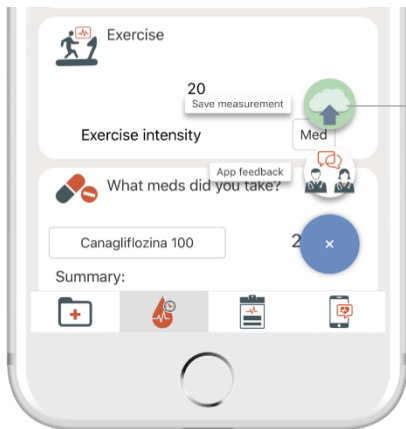


Figure 7: Measurements

After you have entered all your measurements you can save them with the  button. Two buttons (Figure 8) will appear.



**Save**  
*Tap this button to save your measurement.*

Tap on the save button to save your measurements. An overview of your measurements will appear (Figure 9).

Figure 8: Save measurement



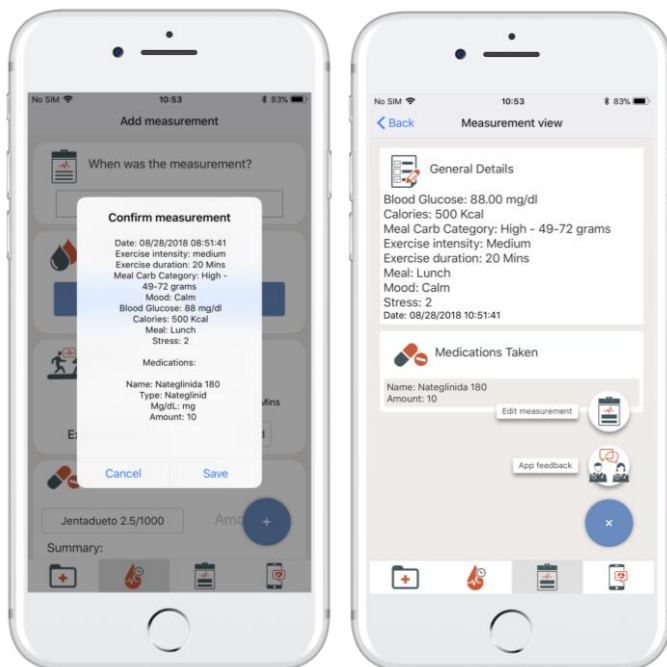


Figure 9: Measurement view

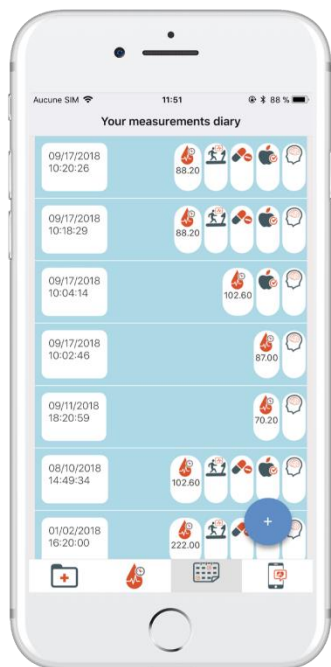




Figure 10: Measurements diary

Tap on **Save** to confirm your measurements. Afterwards, the measurement view appears where you can view and edit your measurements.

## HISTORY

To view all your measurements and to modify them, tap the  button on either the top or bottom of the screen. This will open up *Your measurements diary* (Figure 10). Tap on one of the measurements to open the *measurement view*. In the *measurement view* you can edit your measurement as shown in Figure 9 above and save the measurement as shown in Figure 8.

# SETTINGS PANEL

Tap on the  button, on either the top or bottom of the screen, to open the *Settings panel* (Figure 11). Tap on *Interventions log* to showcase all your received reminders (Figure 12). Tap on *Interventions* to alter the notifications (Figure 13).

- Interventions reminders
- Logout
- Notification frequency configuration
- Blood glucose unit system

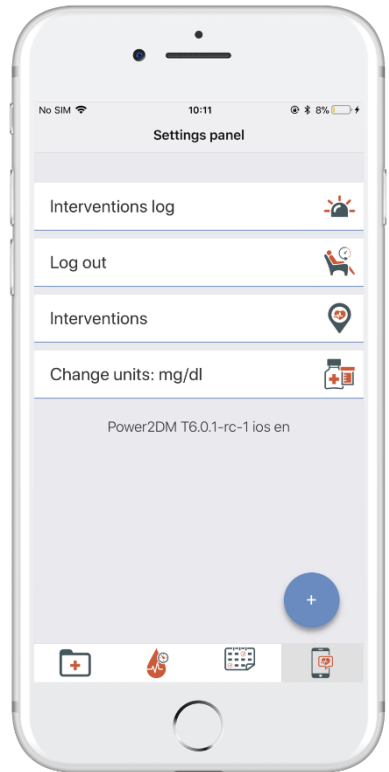


Figure 11: Settings panel

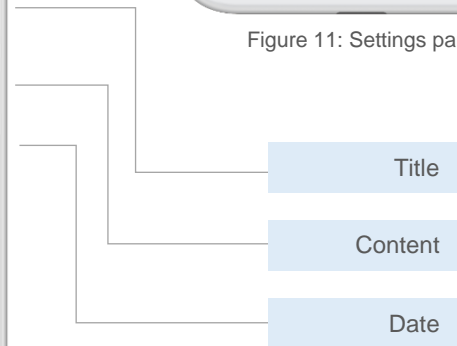


Figure 12: Interventions log

On the *Interventions* screen you can change the frequency of notifications, motivation notifications, and reminder notifications per intervention type.



Figure 13: Intervention settings

## MORE INFORMATION

A more detailed app tutorial for the POWER2DM app can be found [here](#). In this tutorial you can also find more information about how to use the iHealth BG5 device, sending a message to the technical support team, and some known issues with the app and how to resolve them.

More information about the underlying theoretical methods within the POWER2DM app can be found [here](#).

# POWER2DM SHARED DECISION MAKING APPLICATION

You, the user, will use the POWER2DM patient portal (web application) and app to self-manage your diabetes. However, during the consultations with your doctor you will also see the POWER2DM Shared Decision Making Application (SDMA). The SDMA is a web application to be used by the doctor and patient together in the consultation room. The SDMA allows the doctor and patient to review and facilitate shared decision making and goal setting for the patient's diabetes self-management.

The SDMA provides a visual overview of the patient's current care plan and presents data gathered by the different sensors and digital diary in the POWER2DM patient portal (web application) and app. Additionally, the SDMA can be used to simulate the effect that changes to lifestyle and self-management plans can have in these short-, medium-, and long-term [models](#)



Figure 1: Main page SDMA

The POWER2DM SDMA will visualize the patients data in three different compasses.

- A self-management compass will show the gathered data from the various sensors and from the digital diary.
- The barrier compass shows possible barriers that are detected by the SMSS, filled in by the patient or are added by the patient and health care provider together.
- The risk score compass shows the output of the different mid-term and long-term risk models used in this system.

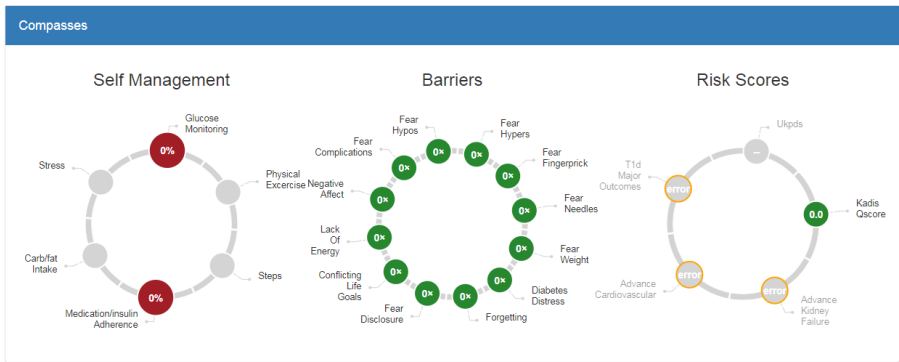


Figure 2: Compasses SDMA

There are also separate self-management, barrier and risk score screens to zoom further in to the data.

The health care provider will use the SDMA to enter the following data to POWER2DM:

- registration of problem identification
- describe and enter treatment goals and committed actions, informed by using POWER2DM prediction models, that allow to compare the consequences of various actions to support shared decision making
- describe and enter barriers and solutions

# POWER<sup>2</sup>DM

**Project:** POWER2DM  
**Project website:** <http://www.power2dm.eu/>  
**Year:** 2019  
**Partners:**

TNO  
SRDC  
IDK  
SRFG  
Prime Data  
SAS  
LUMC  
iHealth