ManageBGL

User Manual

PredictBGL App

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For Users

Table of Contents

1 Important Notes

Thank you for choosing PredictBGL to help you gain better control of your diabetes.
PredictBGL is a bolus calculator and blood glucose prediction system designed for tracking patterns and detecting trends in blood glucose levels in people with diabetes. The system is intended for use in individual patients.
PredictBGL aids in the detection of episodes of hyperglycemia and hypoglycemia. It alerts you to these so that you can adjust your therapy- both in the short-term, and for the future. By doing this it can help you to reduce the number of times that your blood sugar levels are too high or too low.
It is important that PredictBGL is set up correctly. Its calculations are based on your personal settings and the information that you put into it. The more accurate your settings are, the more accurate the suggestions will be. It will take you time to tweak your settings and get your ratios right – but don't give up, it's worth it!

1.1 Notes about this Manual

This manual has been written for the diabetes community world-wide. As such, both mmol/L and mg/dL units are used for Blood Glucose levels in both screen displays and in this text. PredictBGL adjusts its display depending on what your preferences are.

Similarly for carbohydrates – PredictBGL supports grams, Exchanges, Portions, KE, CC and BE measures. PredictBGL will display the one you prefer.

The screen displays may differ slightly from what you see in this manual due to your choice of settings.

1.2 Acronyms and Definitions

Active Insulin Time	The amount of time your short acting insulin acts for.
Basal insulin	The insulin that controls blood glucose levels between meals and overnight. It controls glucose in the fasting state.
BGL/BSL	Blood Glucose Level/Blood Sugar Level
Bolus insulin	The insulin that is released when food is eaten. It is also the name for a burst of insulin that is delivered by injection or by the insulin pump to "cover" a meal or snack or to correct for a high blood glucose level.
Carbohydrate counting	A meal planning method commonly used by people with diabetes to plan their food and meal choices. Carbohydrate counting helps achieve a balance between the amount of carbohydrate foods eaten and the available insulin.
Carbohydrate ratio	A method of determining how much rapid-acting insulin is needed to cover the carbohydrate eaten at a meal or snack. This is used as part of a more advanced level of carbohydrate counting.
CGM(S)	Continuous Glucose Monitor (ing System). A device that measures blood sugar every five minutes through a sensor inserted under the skin.
Dawn phenomenon	A rise in blood glucose levels that occurs in the early morning hours
Diabetes educator	A healthcare person who has the skill and knowledge to teach a person with diabetes how to manage the condition. Diabetes educators may be doctors, nurses, dieticians, mental health or fitness clinicians. Some also have the credential CDE (Certified

	Diabetes Educator)
Endogenous	From within- for example, insulin from own pancreas, which may be functioning in some capacity
GI	Glycaemic Index - how fast the carbohydrate content of food hits the blood stream. High GI foods are absorbed quickly and cause a 'spike' in blood sugars. Spikes in blood sugar cause progressive damage to fine blood vessels in the eyes, hands, feet, heart and kidneys.
HCP	Health Care Provider e.g. doctor, endocrinologist, educator, dietician, nurse etc.
Honeymoon period	After diagnosis of Type 1 diabetes, a period of time when the body initially returns to producing some insulin. Some Type 1s do not require insulin during this period, others require far less.
Hyperglycaemia or 'hyper' or 'high'	A high blood sugar level.
Hypoglycaemia or 'hypo' or 'low'	A low blood sugar level.
Hypoglycaemic unawareness	A condition where a person no longer recognizes the symptoms of low blood glucose.
Insulin pen	An insulin delivery method that looks like a writing pen.
Insulin pump	An insulin delivery system; a small mechanical device, typically the size of a beeper or small cell phone, that releases insulin into the tissues of the body by way of tubing and a needle.
Insulin sensitivity factor	(also called the correction factor or supplemental factor) - The amount of blood glucose that is lowered by 1 unit of rapid-acting or regular insulin. The insulin sensitivity factor is used to calculate the amount of insulin you need to return blood glucose to within your target blood glucose range.
IOB (Insulin on Board)	Insulin on Board – the amount of insulin remaining to be absorbed- calculated using the time it was injected, the Active Insulin time and the size of the dose.
PHI	Personal Health Information
Pumper	A person using an insulin pump.
PWD	Person or People With Diabetes

1.3   Warnings

PredictBGL is primarily intended for PWD (People With Diabetes) who use insulin as part of their treatment regime. However, it can also be useful for those not on insulin.

PredictBGL is intended for use by a single PWD. Do not share an account with another PWD.

Guessing or using the wrong settings can be dangerous! Ask your healthcare professional for assistance in setting up PredictBGL, and in making any future changes.

If you give PredictBGL the wrong data, the information it gives you can be misleading or wrong. And just like when managing diabetes without PredictBGL, you must decide if PredictBGL's advice is relevant and appropriate to you.

Do not allow young children to play with PredictBGL's settings.

1.4   Recall
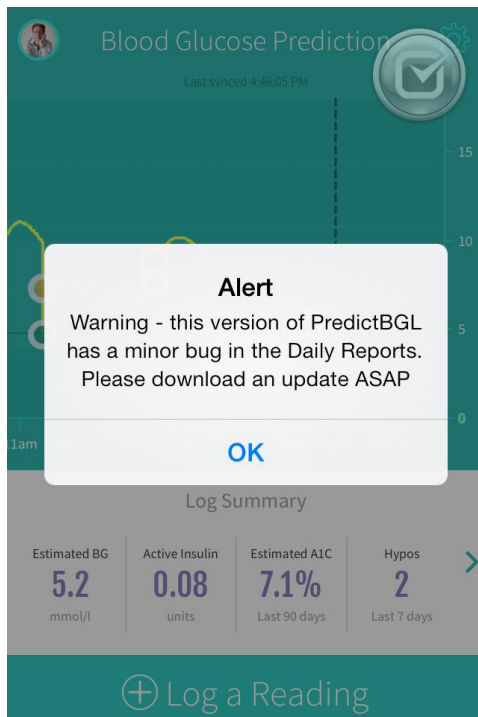
If we identify a serious bug in the PredictBGL App version that you have, you will see a message similar to that shown.

We advise you to update your version of PredictBGL whenever you see one of these messages.

Note that we do not force you to download an update straight away, because it is possible that downloading at that time may not be convenient eg. about to get on a plane.

2 Getting PredictBGL

You can download the PredictBGL App from the Apple App Store or Google Play (for Android).

If your device is damaged, lost or stolen, you can also access PredictBGL directly from the ManageBGL.com website with the same login information.

2.1 Device Requirements

PredictBGL runs on any web browser on a PC, Mac, iPhone, iPad, iPod or Android smart phone or tablet.

3 Sign Up

Before you can use PredictBGL, you need to create an account using your email address and password.

3.1 Website or App Setup

PredictBGL can be setup either via the PredictBGL app, or via the ManageBGL website.

The ManageBGL website may be easier to setup for some people as you have use of a full keyboard, larger screen and mouse.

The ManageBGL website can also enter items not available in the App user interface, such as your avatar (image/photo), and recording of extra data such as eye tests. Future development of the App will allow this.

3.2 Synchronization

The App and the website have been designed to work together and synchronize data between them automatically. Data entered in the App should normally appear on the website within 2.5 minutes, and on other Apps within 5 minutes If there are events that may disrupt power and phone connections (storms, fire) this may take longer. You can always check the time that the data was last synchronised, on your Dashboard.

This enables you to use the website on your computer at work or home, and on your smart phone or tablet when you are out and about.

3.3 Welcome Screen
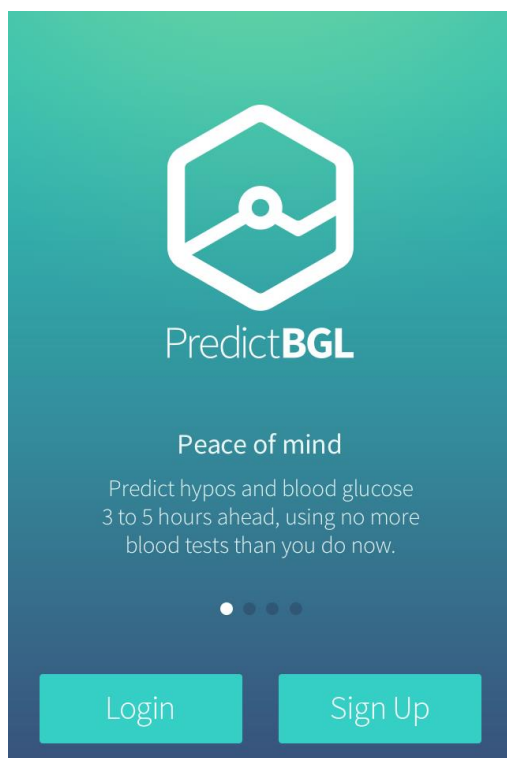
When PredictBGL starts, you will see the welcome screen.

If you already have an account, press the [Login] button.

If you need an account, press the [Sign Up] button.
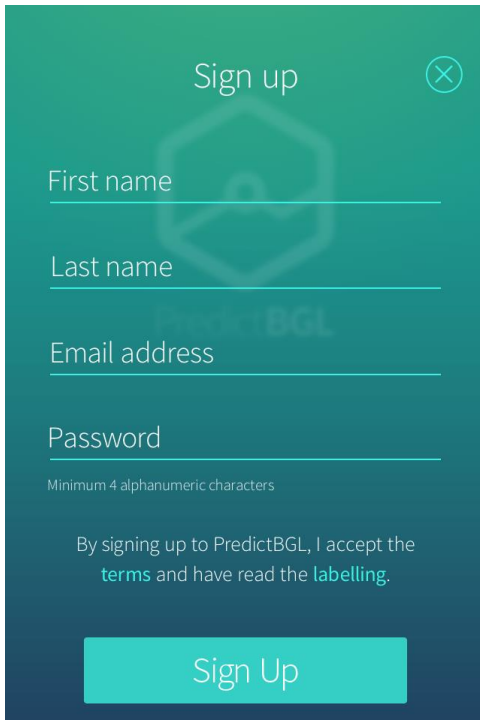
3.4   Login

Enter your email address and password on the login screen.

The login screen will remember your email address for 2 weeks from the time you last used it.

If you have forgotten your password, press the 'I forgot my password' link and follow the instructions.

3.5   Sign Up and Initial Settings

To sign up, enter your first name, last name, email address and password.

The password must have a mixture of at least 4 letters and/or numbers.

Before pressing [Sign Up], you must accept the terms and ensure that PredictBGL is appropriate for you.

After Sign Up, the next screen is the initial settings.

4 Initial Settings
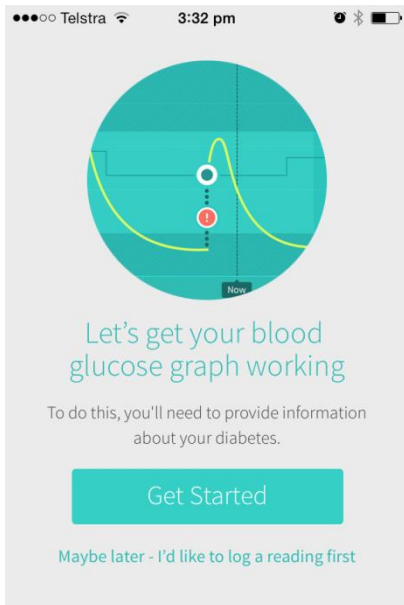
If unsure about any of these settings, please contact your Health Care Professional.

Press [Get Started] to continue.

4.1   Step 1. Type, Diagnosis, Therapy etc
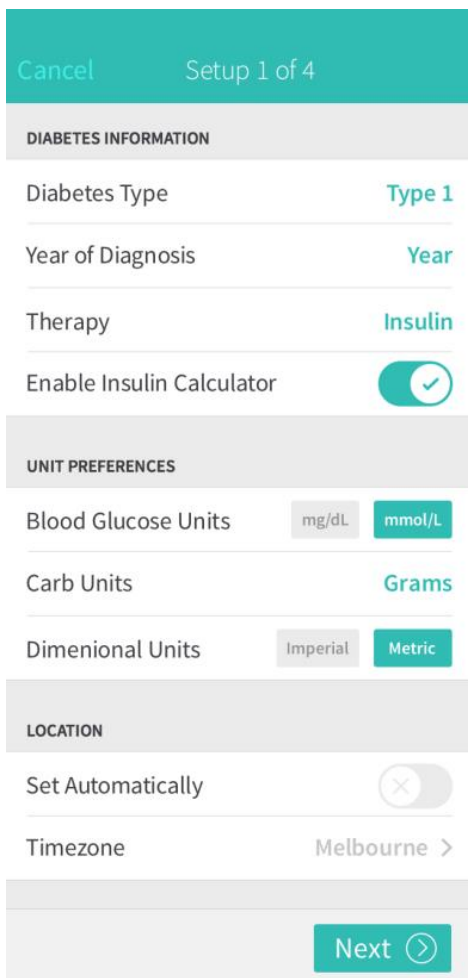
PredictBGL tailors displays and coaching advice based on the settings you give it. Please do not skip any settings. Please see below for detailed information on why we ask for particular information.

4.1.1 Diabetes Type

Choose your diabetes type(*), from:

Type 1
Type 1.5
Type 2
Gestational
Prediabetes
LADA
Other
None - I do not have diabetes

(*) If your body still makes insulin or you are in the "honeymoon period " of Type 1 diabetes, then, use the Natural Pancreas setting (see page 33) to simulate this.

4.1.2 Year of Diagnosis

In what year were you diagnosed? PredictBGL uses this to prompt you for eye checks and other tests. These tests are initiated after a period of time with diabetes, and pickup early warning signs of larger problems, such as kidney failure, blindness, heart disease and eye damage.

4.1.3 Therapy

This determines what other data you will need to enter in the setup process which then allows for more accurate predictions.

How is your diabetes treated? Choose from:

Oral Medication	Insulin cannot be logged.
Insulin Therapy	Insulin can be logged.
Insulin and Oral Medication	Insulin can be logged.
Diet and Exercise (Only)	Insulin cannot be logged.
Other	Insulin cannot be logged.
N/A	Insulin cannot be logged.

4.1.4 Gender

Unknown	Menstruation(*) is available as a factor.
Male	Menstruation is not available as a factor.
Female	Menstruation is available as a factor.

(*) During Menstruation, more insulin is needed compared to normal. By personalising the Menstruation factor (see page 34), and then ticking the menstruation factor during a dose calculation (see page 27), insulin doses are magnified accordingly.

4.1.5   Enable Insulin Calculator

Disable the Insulin Calculator if you DO NOT use Humalog, NovoLog, NovoRapid or Apidra.

Enable the Insulin Calculator if you use Humalog, NovoLog, NovoRapid or Apidra with Lantus or Levemir and vary your Insulin amount according to the size of each meal and your current blood sugar.

4.1.6   Blood Glucose Units

Used for logging Blood Glucose data.

mg/dL	USA, Parts of Europe
mmol/L	Australia, UK, Parts of Europe

4.1.7   Carb Units

Used for logging how much carbohydrate you consume. Choose from:

Unit Name	Each Unit Is
Grams	1 gram
Exchanges	15 grams
Portions	10 grams
BE (bread units, used in Europe)	12 grams
KE (bread units, used in Europe)	10 grams
CC (used in Europe)	15 grams

4.1.8   Dimensional Units (not currently used)

Used for logging weight and height. Choose from:

Metric	Kg, cm
Imperial	Pounds, feet/inches

4.1.9   Location

PredictBGL reads your device settings to determine the time zone. Your device should be set to update the time zone automatically, so that if you move between time zones (e.g. fly on a plane), the time zone will update automatically.

E.g. if you fly from New York to London, PredictBGL will then display all data and suggests meals for London's time zone. PredictBGL uses the time zone to choose which blood glucose target, carb ratio and insulin sensitivity is used for dose calculations.

Any insulin you injected during the flight will still be tracked perfectly, as internally all times are stored in UTC/GMT.

When you fly back to New York, PredictBGL will update the time zone when you land.

4.2   Step 2. Active Insulin Time

If you DO NOT use a bolus insulin such as Humalog, NovoLog, NovoRapid or Apidra then use a setting of 3 hours, and do not use the Insulin Calculator.

Active Insulin is the amount of time your fast acting insulin acts for.

This setting tells PredictBGL how much insulin to subtract (Insulin on Board or IOB) before calculating a dose. Your healthcare professional can advise you on a starting value (typically 3 hours), but you must adjust it yourself based on trial and error.

PredictBGL nominally uses 3 hours for a fast acting insulin profile (Humalog, NovoLog, NovoRapid, Apidra). The valid range is 2-8 hours.

Iinsulin action time can vary from person to person. PredictBGL allows you to alter this 3 hour active insulin time if needed.

If you use an insulin pump, then you may have to set PredictBGL's Active Insulin time to a lower value than your pump, as PredictBGL tracks insulin more accurately than your pump.

4.3   Step 3. Insulin Sensitivity
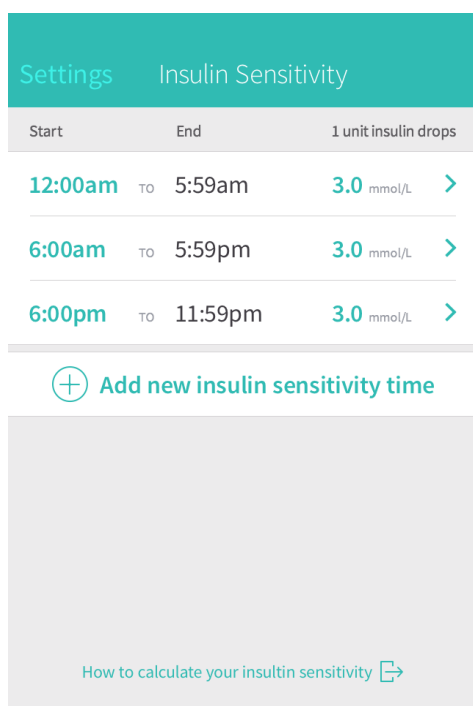
Your Insulin Sensitivity Factor (ISF) determines how much your blood sugar will drop in response to 1 unit of insulin. .It is also known as a 'Correction ratio' or 'Correction Factor'.

Your Insulin Sensitivity can vary throughout the day, and you normally need more insulin in the morning compared to the middle or end of the day to achieve the same drop in blood sugar level.

e.g. at breakfast, you may need 3 extra units to drop your blood sugar from 10 mmol/L to 5 mmol/L (180 mg/dL to 90 mg/dL), but at dinner time you might only need 2 extra units for the same drop.

Insulin Sensitivity is normally between 1.1-5.6 mmol/l (20-100 mg/dL).

When you first setup PredictBGL, three common time periods are shown with a default value of *1 unit of insulin* drops 3.0 mmol/L (54 mg/dL).

You must personalise these values to reflect your own diabetes management. See your Health Care Professional if you need assistance.

You may also find a worksheet helpful – https://www.managebgl.com/scenarios/calculating-insulin-sensitivity-factor-ISF

4.3.1   Determining your initial Insulin Sensitivity

If you use Humalog, Novolog or NovoRapid, the '100 Rule' (*) provides a rule of thumb for determining your initial insulin sensitivity.

If you measure blood sugar in mg/dL:

ISF = 1800 divided by your TDD (total daily dose)

If you measure blood sugar in mmol/L:

ISF = 100 divided by your TDD (total daily dose)

(*) Note: This rules gives a good starting point, but you must be prepared to adjust your sensitivity if it is wrong for you. Also remember that your sensitivity can change throughout the day.

4.4   Step 4. Carbohydrate Ratio

The Carbohydrate Ratio determines how much carbohydrate is covered by one unit of insulin. It is also known as a 'Carb ratio'.

Your Carbohydrate Ratio can vary throughout the day, and you normally need more insulin in the morning compared to the middle or end of the day to cover the same amount of carbs.

e.g. at breakfast, you may need 6 units of insulin for 45 grams carbs, but at dinner time you might only need 4 units for 45 grams.

Example: If you had 30 grams of carbohydrate, and you gave yourself 1 units to cover it, and when the insulin has finished acting 2.5-3 hours later your BGL was similar to before eating, then your Insulin To Carb ratio is: 30 ie 30 grams of carbohydrate is covered by 1 Unit of Insulin, and the ratio is 30 grams per unit.

Example 2: If you had 60 grams of carbohydrate, and you gave yourself 4 units to cover it, and if 2.5-3 hours later your BGL was similar to before eating, then your Insulin To Carb ratio is 60/4 = 15 grams per unit, ie 60 grams of carbohydrate is covered by 4 Units of Insulin.

When you first set up PredictBGL, three common time periods are shown with a default value of *1 unit of insulin* covers 10 grams.

You must personalise these values to reflect your own diabetes management. See your Health Care Professional if you need assistance.

You may also find a worksheet helpful https://www.managebgl.com/scenarios/calculating-carbohydrate-ratio

4.4.1   Determining your initial Carbohydrate Ratio

If you use Humalog, Novolog or NovoRapid, the '500 Rule' (*) provides a rule of thumb for determining your initial carb ratio.

If you measure food in grams:

Carb ratio = 500 divided by your TDD (total daily dose)

If you measure food in Exchanges:

Carb ratio = 33 divided by your TDD (total daily dose)

(*) Note: This rules gives a good starting point, but you must be prepared to adjust your carb ratio if it is wrong for you. Also remember that your carb ratio can change throughout the day.

4.5   Initial Setup complete
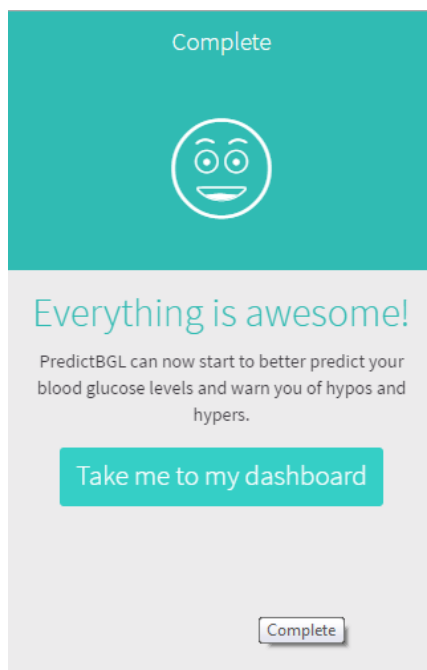
After initial setup, you are taken to the dashboard.

There are some items that currently cannot be setup within the App, see page **Error! Bookmark not defined.**.

5 Dashboard

In the top left corner is your avatar (if you have set this up via the ManageBGL website).

The pie chart around the Avatar shows the percentage complete of your profile. If it is not 100% full, press the Avatar to find out what items are missing (see page 30).

The gear icon takes you to settings and reports (see page 31).

The 'Updated 20 mins ago' text shows the date and time of last synchronisation. Pressing this text causes a sync to occur. You can use this to check that your most recent entries have been synchronised before you lock your phone.

5.1 Blood Glucose Chart
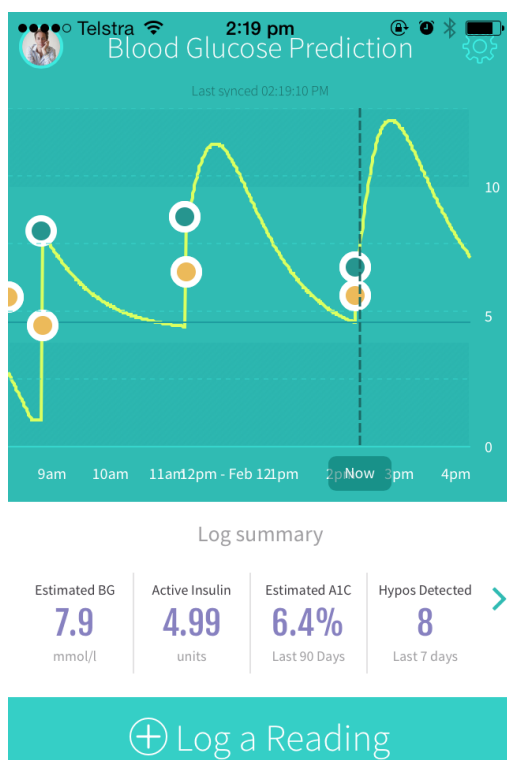
The dashboard shows your blood glucose graph. The yellow line represents your blood glucose levels over a 6 hour period. Swipe the graph to move forwards/backwards in time.

- Green dots represent actual readings you've made. Press the green dot to find out the actual reading and time.

- Amber alert dots represent discrepancies between predictions and your actual blood tests –Press the amber dot for suggestions as to what could have gone wrong.

- The Red alert dots represent a predicted hypo/hyper warning in the future. Don't ignore these! Press the red dot to find out what is predicted.

- Your normal zone (see page 35) is shaded differently in the centre of the chart.

- Your BGL target is shown as a dark green line (see page 35).

5.2   Green Dots – Actual BGLs
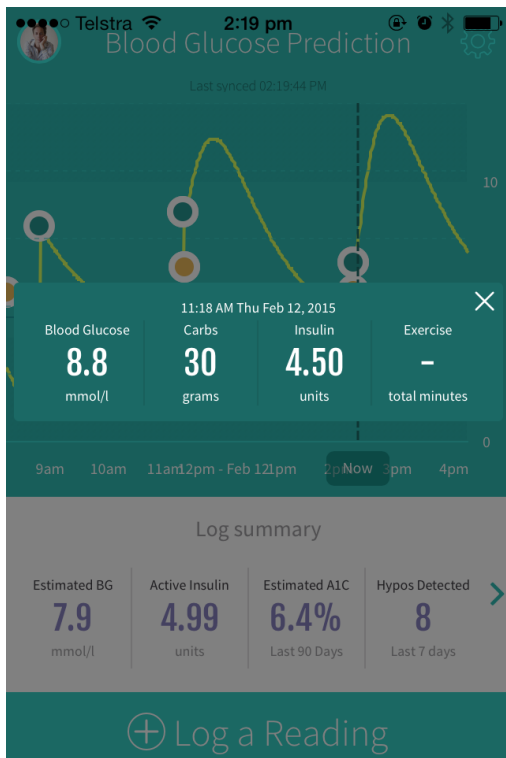
When you press a green dot, or actual BGL, PredictBGL shows you the measurements taken at that time.

To clear this box, press anywhere in the green box.

5.3   Red dots – future Hypo or Hyper warnings
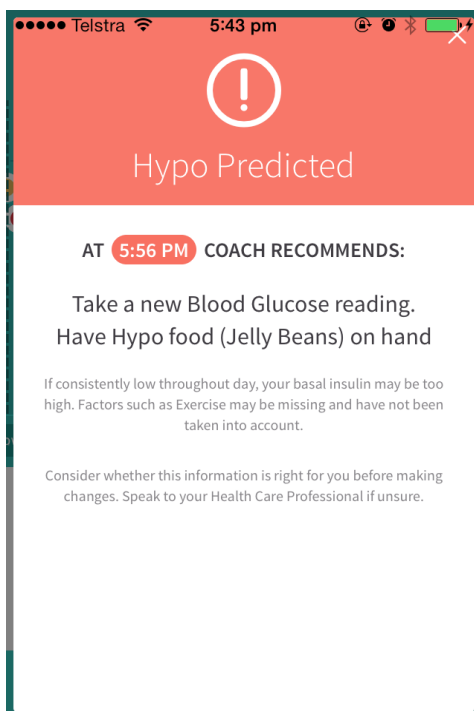
When you press a red dot, or warning, PredictBGL shows you a prediction of future Hypos or Hypers.

PredictBGL recommends that you perform a BG test at the indicated time.

Even if your ratios are correct, it is possible for the predictions and actual blood sugars to not line up. If this happens repeatedly, you need to consider the suggestions and if they are right for you.

To clear this box, press anywhere in the upper red title section.
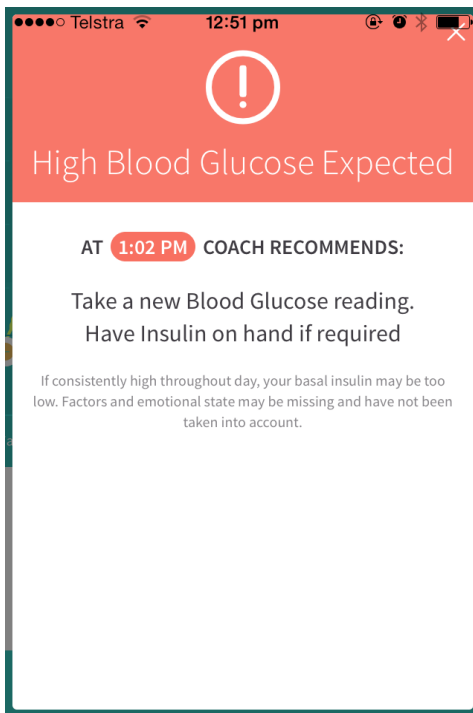
PredictBGL also shows warnings for expected High Blood Sugars.

5.4   Amber dots – Coaching Suggestions
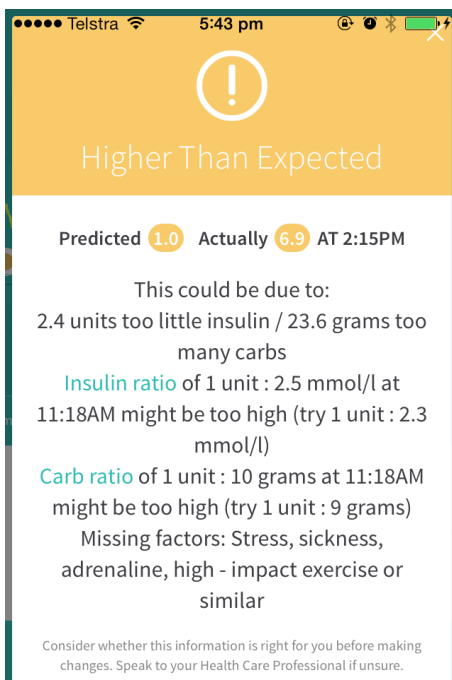
If your blood sugar is higher or lower than expected, PredictBGL will mark the difference with an amber dot.

When you press an amber dot, or coaching suggestion, PredictBGL shows you the difference between its predictions and your BGLs, and the reasons for this. You must decide for yourself if the suggestions make sense to you.

Even if your ratios are correct, it is possible for the predictions and actual blood sugars to not line up. If this happens repeatedly, you need to consider the suggestions and if they are right for you.

To clear this box, press anywhere in the upper amber title section.

5.4.1 Higher or Lower than Expected
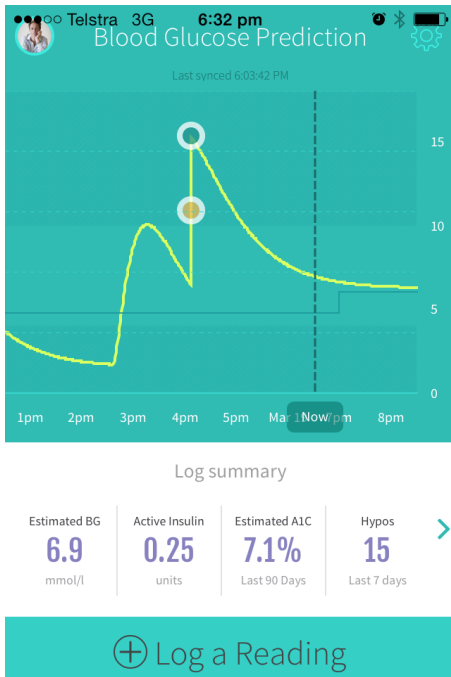
The example chart shows a blood sugar at 4pm that was higher than expected. The actual blood sugar was 16.0, while the expected blood sugar was 10.0. The amber dot appears mid-way between the two.

5.5 Sensor Data – CGMS
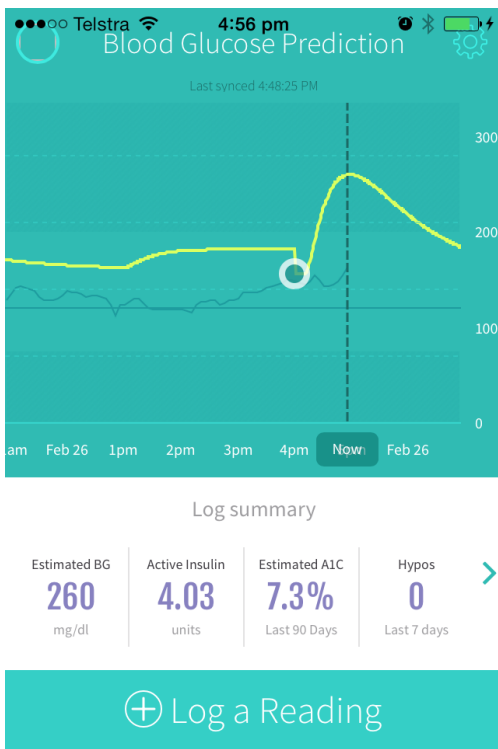
If you use a CGMS and link it to the ManageBGL website, your CGM data is shared live and is plotted on the chart against predictions.

5.6 Log Summary

The log summary below the chart shows you several useful numbers. To modify previous log entries, press anywhere on the log summary line, or the > to the right of the line.

5.6.1   Estimated Blood Glucose

This shows what your estimated blood glucose is right now.

If this shows 'Do BGL' or '-', it means that PredictBGL does not have enough information to estimate your Blood Glucose, and you need to do a blood test.

The BGL is color-coded according to its level – Red, Green or Amber.

If your Blood Glucose is too high, it may not appear on the chart, and the estimated blood glucose display will show '> 22.0' or '> 396', where '>' indicates 'greater than'.

5.6.2   Active Insulin

This shows the amount of insulin still active. It counts down by itself as your insulin is absorbed.

If this shows 'Settings!' this means that the active insulin time has not yet been set.

5.6.3   Estimated A1C %

This shows an estimate of your A1C based on your previous 90 days readings (if available).

5.6.4   Hypos

This shows the number of Hypos detected in the last 7 days.

5.7   Log a Reading

Pressing 'Log a Reading' takes you to the log screen.

6 Log Screen
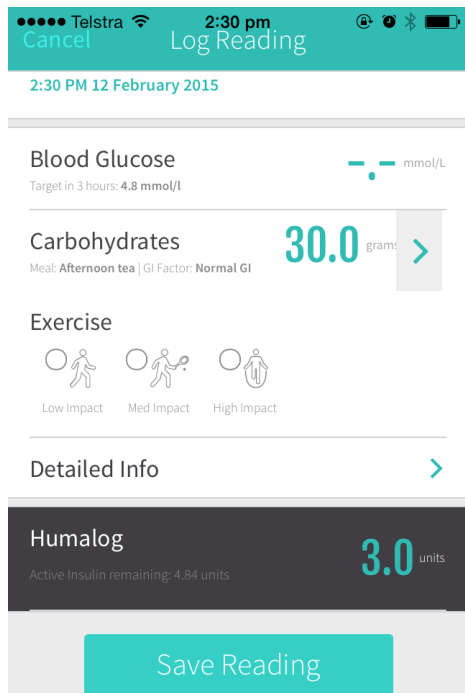
The Log screen is where you enter data.

If calculation is enabled, the logging screen will automatically calculate a dose based on the data you enter.

If calculation is not enabled (see page 12), you must enter the insulin amount yourself

6.1 Blood Glucose

Enter your BGL here by clicking on it. To clear a BGL, just enter '0'. To fix a BGL, just enter the new value.

If your BGL target has been set (see page 35), it shows what the target is, and your insulin action time (see page 13). If the BGL target is not set, it shows a warning message.

The BGL is colour coded according to its level, Red, Green or Amber. Low BGLs also show a Hypo Warning.

6.1.1 If your meter shows Lo or High

Most meters show 'Lo' or similar if the BGL is too low for it to measure accurately, or 'Hi' or similar if it is too high to measure accurately. If this happens, press the BGL field, and then press either the Lo or High button instead of typing a number:
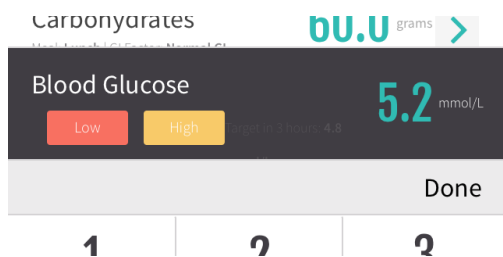
6.2 Carbohydrates

Enter your Carbs here by clicking on it. To clear the Carbs, just enter '0'.

If your default meal times have been set, it shows the meal time selected, and the carbs for this meal time will be pre-set in the carbs field (so you don't have to enter them each time).

It also shows what GI factor has been chosen for this food. This is most important for fatty foods such as pizza and lasagne, and can be set on the Carbohydrate Details screen by pressing '>'.

If the meal times have not been set, it shows a warning message.

For the Carbohydrate Details screen, see later in this section.

6.2.1 Low BG Response
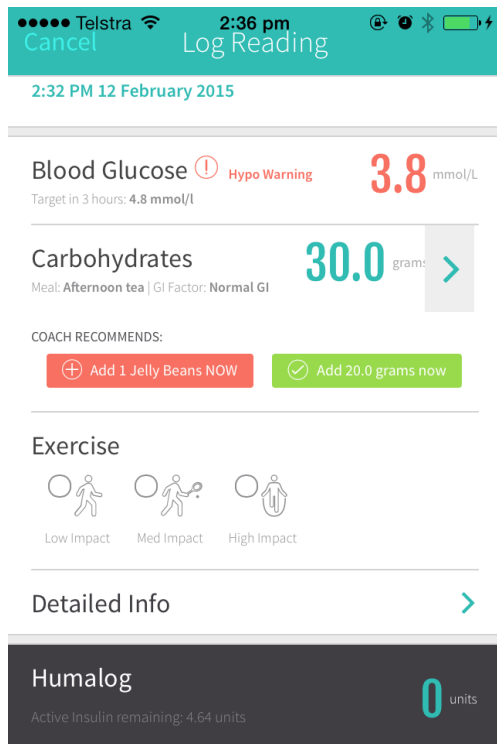
If your BGL is below 4 mmol/L (72 mg/dL), PredictBGL uses a Red button to tell you how many of your Hypo recovery food items (page 37) are needed to return to a normal BGL. If you agree to follow the suggestion, press the Red button to add this to the log, and remember to retest in 10-15 minutes.

If you will still need extra food, a Green button will show how much extra food is needed to counteract active insulin. If you agree to follow the suggestion, press the green button to add this to the Carbohydrates.

6.2.2 Negative Insulin Response

If the food you are eating is not enough to counteract the insulin that you have already injected, PredictBGL shows a Green button showing how many extra carbs you may need to eat to offset insulin. In addition, if you have entered a BGL, it tells you when is the best time to eat these extra carbs. This allows your BGL to drop first, rather than having a high BGL for longer, which has long term health consequences and increases your A1C.

If you agree to follow the suggestion, press the Green button.

Depending on how low your BGL is, the suggestion may be to eat straight away, or to eat later.
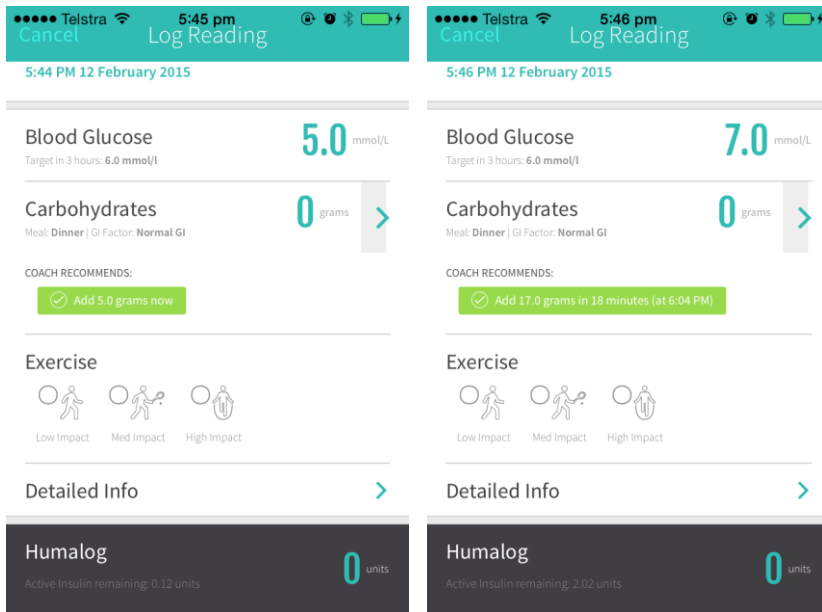
6.2.3 Delayed Eating Response
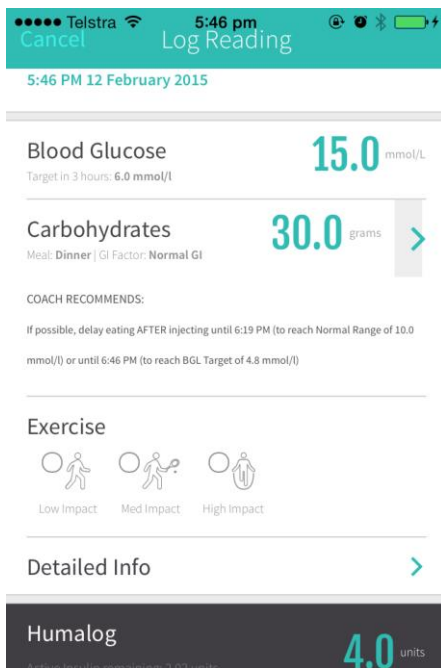
If your BGL is above your High Range (page 35) and you are eating, PredictBGL tells you how long to delay eating. This allows your BGL to drop first, rather than having a high BGL for longer, which has long term health consequences and increases your A1C.

See https://www.managebgl.com/resources/delay-eating

6.3 Exercise

Exercise modifies the dose calculation, in accordance with your settings (page 38), generally by reducing your insulin.

Only one exercise factor can be chosen.

When you select an exercise factor (and save), the factor starts running for a pre-determined length of time.

To cancel a running exercise factor, log a new entry, and uncheck the factor. The factor will then be turned off at that point in time. This makes it easy to start and stop an exercise factor when you're unsure of the exact duration.

Exercise is divided into 3 intensities:

Exercise Intensity	Use for	Default Duration	Default %
Low Impact	Walking	4 hours	-10%
Medium Impact	Tennis, swimming, light aerobics	4 hours	-20%
High Impact	High impact aerobics, bike classes, karate, body pump and very high aerobic output exercise	4 hours	-40%

See Exercise Settings, page 38.

6.4   Detailed Info – see later

For the Detailed Info screen, see page 26.

6.5   Insulin

The insulin section will show a calculated dose if the dose calculator is on (page 12). You can override this dose by pressing the Insulin amount. To clear the Insulin, just enter '0'.

If the dose calculator is off just enter the insulin amount.

6.5.1   Active Insulin Remaining

The insulin section also shows the amount of insulin remaining. This helps to avoid hypos by preventing overdosing. The Active Insulin is only taken into account when a BGL is entered.

The Active Insulin depends on your Active Insulin Time (page 13) and the units of insulin you have injected within this timeframe and their timing.

6.6   Save Reading

When the data has been entered, press [Save Reading] to log it.

If you are editing an existing reading, a [Delete Reading] will also be shown that can be used to remove the reading.

6.7   Carbohydrate Details
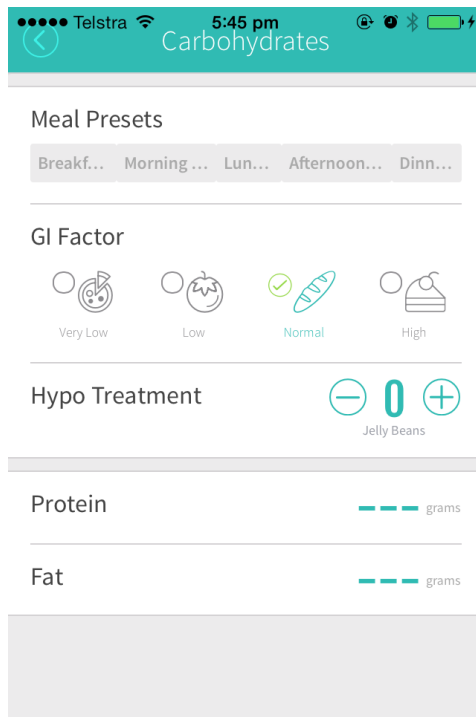
Pressing the > to the right of the Carbohydrates takes you to the Carbohydrate Details screen.

When done, press < at the top left to return to the main screen.

6.7.1   Meal Presets

To override the carbohydrate amount that has been pre-selected, you can simply press on the meal pre-set you want (e.g. if you have a late breakfast). You can also modify the carbohydrate amount just by pressing on it on the main Log screen. See page 25.

6.7.2   GI Factor

The GI factor for the food can be selected. This does not modify the dose calculation, but affects the way the prediction model estimates how quickly the food will be absorbed, and makes Hypo prediction more accurate.

You can change the default GI factor - this is pre-selected for every meal, see page 36. You cannot choose Very High GI as a GI factor, as this type of food is entered in the Hypo Treatment field, below.

GI Factor	Usage
Very Low / Fatty	Fatty foods such as pizza and lasagne.
Low	Vegetables (not corn, pumpkin, potato)
Normal	Breads, Rice, Pasta
High	Cake
Very High	Jelly beans, glucose tablets

6.7.3   Hypo Treatment

The Hypo Treatment is a Very High GI food that you only eat to recover from hypos e.g. jelly beans or glucose tablets, see page 37.

The calculator will recommend how many of these are required to offset a Hypo and return your BGL to the normal zone.

The Hypo Treatment count can be increased or decreased by pressing the + or – buttons on either side of it.

6.7.4 Protein

Enter Protein here by clicking on it. To clear the Protein, just enter '0'.

A percentage of the Protein that you eat is converted to Carbohydrates by Gluconeogenesis.

The percentage can be set by you, see page 38. The carbohydrate equivalent is taken into account by the dose calculation.

You must adjust this percentage to suit your own body.

We suggest a starting Protein Conversion percentage of 40%.

6.7.5 Fat

Enter Fat here by clicking on it. To clear the Fat, just enter '0'.

A percentage of the Fat that you eat is converted to Carbohydrates by Gluconeogenesis.

The percentage can be set by you, see page 38. The carbohydrate equivalent is taken into account by the dose calculation.

Fat is converted to carbs at a lower rate than protein.

You must adjust this percentage to suit your own body.

We suggest a starting Fat Conversion percentage of 10%.

6.7.6 Food database

This option allows you to lookup a food's carbohydrates, protein and fat.

This option is only accessible when you have an internet connection.

6.8   Detailed Info
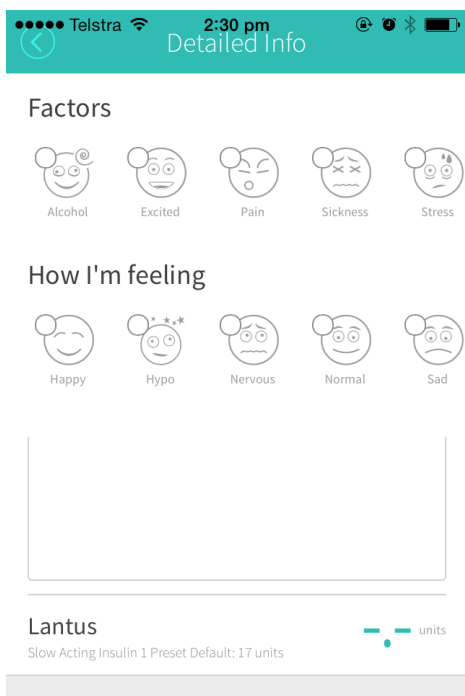
Pressing Detailed Info > takes you to the Detailed Info screen.

When done, press < at the top left to return to the main screen.

6.8.1   Factors

Factors modify the dose calculation, in accordance with your settings.

More than one factor can be chosen at the same time.

When you select a factor (and save), the factor starts running for a predefined length of time. To cancel a running factor, log a new entry, and uncheck the factor. The factor will then be turned off at that point in time.

The most common factors are shown first. To see extra factors, you may have to scroll right by dragging the icons.

The Factors are Sickness, Stress, Excited (adrenaline), Menstruation, Pain and Alcohol.

Factor	Use for	Default Duration	Default %
Sickness	Add extra Insulin when sick	2 hours	+30%
Stress	Add extra Insulin when stressed	1 hour	+20%
Excited	High-impact sport, or other activities that produce adrenaline.	3 hours	+30%
Menstruation	Add extra insulin during Menstruation. Only shown to females!	5 hours	+5%
Pain	e.g. MS episodes.	2 hours	+30%
Alcohol	A pseudo-factor –it does not modify the dose calculation, but the prediction model uses it to 'shut off' the background-insulin production.	2 standard drinks	n/a

	Note: Alcohol is only shown to those 16 and older		

See Standard Drinks, page 43.

See also: Exercise, page23 , Factor Settings, page 34, alcohol amounts (page 43).

6.8.2   Feelings

Feeling do not modify the dose calculation, but can be used to track how you feel. Your doctor may ask you to log this.

Only one feeling can be chosen at a time.

The most common feelings are shown first. To see extra feelings, you may have to scroll right by dragging the icons.

Happy
Hypo
Nervous
Normal
Sad

6.8.3   Notes

Add any text notes that you wish to associate with this log, e.g. feeling tired, etc.

6.8.4   Basal Insulin

If you have set up Basal Insulin, you can record the amount here.

If you have set up Basal Insulin Defaults, simply press the default (e.g. 17) and it will be copied to the basal insulin field.

7 Log History Display

The log history shows a summary of recent statistics, as well as recent logs of blood sugar, carbohydrates and insulin for the last 7 days.

You can press any log entry to edit or review it.

To return to the charts screen, press the < in the top left hand corner. You can also press + in the top right corner to log a new entry.

Note that Sensor (CGMS) BGLs are not shown in the Log History, only BGLs, Carbs, Insulin and Exercise.

8 Profile
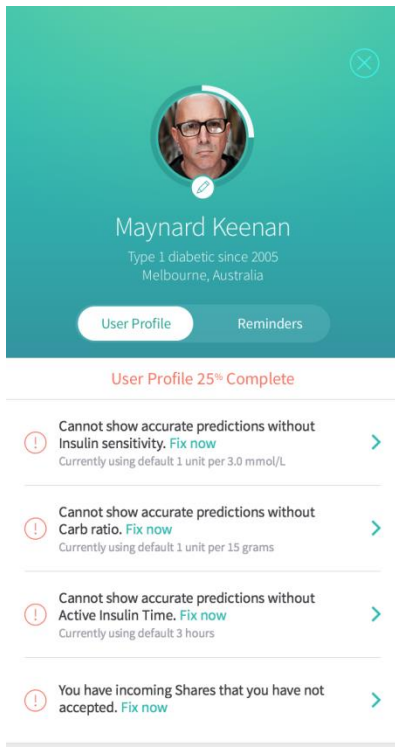
The profile circle in the upper left of the screen shows you how complete your profile is. A full circle or 'donut' indicates that all settings have been entered.

Press the circle or your avatar (can be set via the website) to see which settings you need to fix.

To fix the issue, press on the row to be taken to the appropriate settings screen.

Press the < button to return to the dashboard.

9 Settings
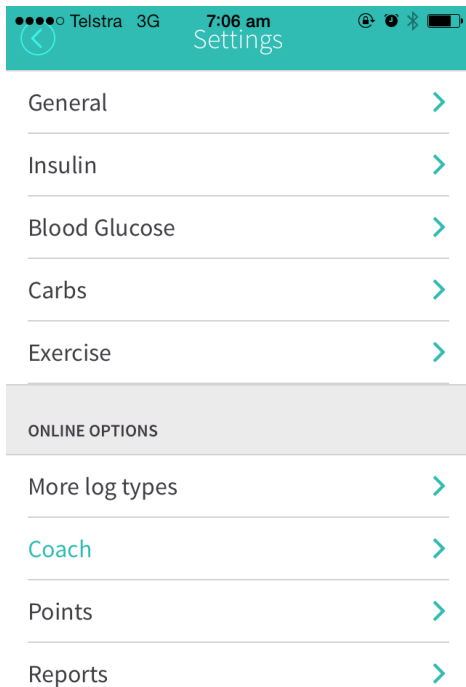
We strongly recommend that you work closely with your Health Care Professional for a safe and complete start with PredictBGL. If required, training material for Health Care Professional's is available on the ManageBGL website.

The best results are seen when readings and other information are consistently and continuously added to PredictBGL as they occur.

9.1 General

Please see Initial Settings on page 10.

9.2 Insulin
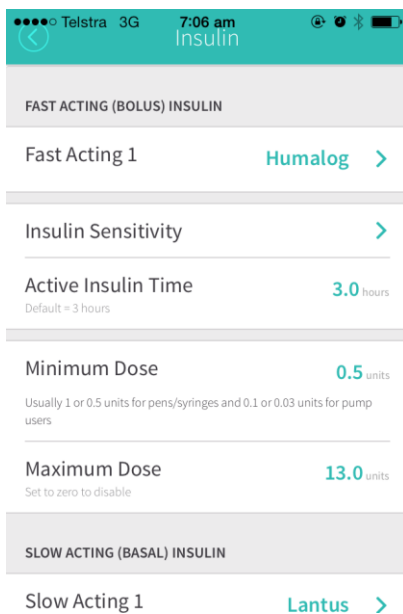
These settings control which insulin PredictBGL expects so that it can apply the to apply the correct insulin curve.

9.2.1 Fast Acting 1
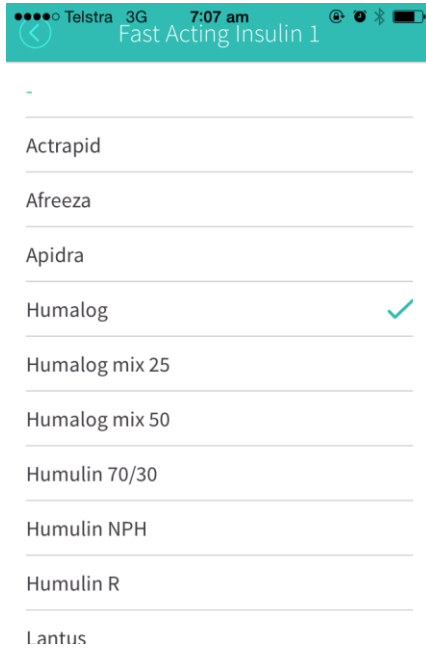
Choose your fast (or rapid) acting insulin from the list. Typically Humalog, NovoRapid/Novolog, Apidra.

If you do not remember what it is, check the packaging or ask your Health Care Professional as different insulins have very different action times and curves.

9.2.2 Insulin Sensitivity

Please refer to page 13.

9.2.3 Active Insulin Time

Please refer to page 13.

9.2.4 Minimum Dose

This refers to the minimum amount of fast acting insulin your delivery device can provide. PredictBGL will round its insulin calculations to suit.

Device	Suggestion
Syringe	0.02 unit - 1 unit, depending on your eyesight and how steady your hand is
Insulin pen	0.5 units or 1 unit.
Pump	0.03 to 0.1 unit.

9.2.5 Maximum Dose

This refers to the maximum dose of fast acting insulin that you are ever likely to take. PredictBGL will not let you add a dose larger than this. You must split it manually into two doses, or adjust this value.

To disable this feature, set the Maximum Dose to zero.

9.2.6 Slow Acting 1

Specify here your slow acting insulin. Typically Lantus, Levemir, Tresiba.

9.2.7   Model Basal Insulin

PredictBGL can model your basal insulin as well as your fast acting insulin.

If Basal Modelling is turned on, then you MUST enter each basal dose for PredictBGL's charts to make sense. Skipping a basal dose will show a steadily-rising Blood Glucose. Double-entering a basal dose will show a steadily falling Blood Glucose.

The purpose of turning on Basal Modelling is

1. To provide more accurate modelling of exercise and stress

2. To provide modelling of alcohol

3. To detect effects from basal insulin overlap (e.g. 9am on day 1, but 8am on day 2 can give 1 hour of double-effect).

9.2.8   Basal Times
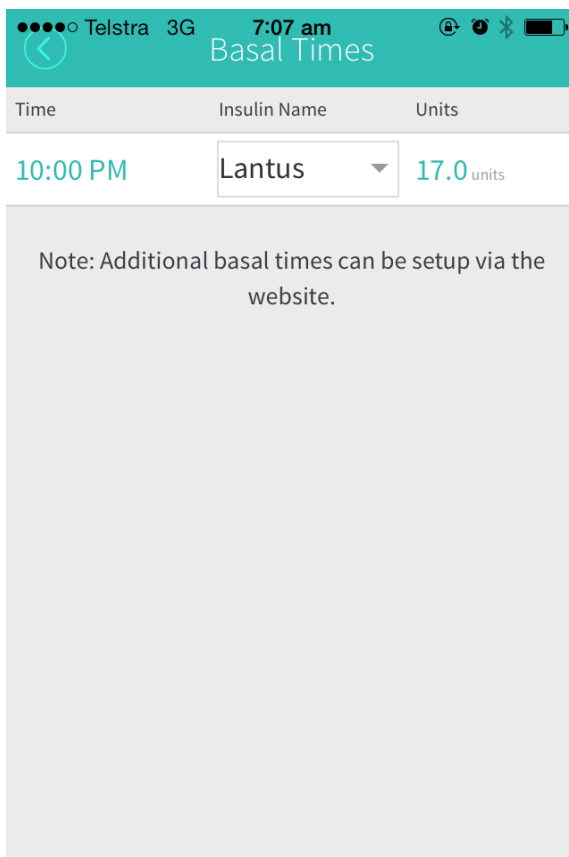
Set the time, insulin and dose of basal insulin that you normally take.

If you take basal insulin twice a day, this can be configured via the website.

9.2.9   Basal Rate

For pumpers, currently must be setup via the website.

9.2.10 Natural Pancreas Function

If you still produce insulin, the model can optionally allow for this.

Diabetes Type	Suggested value
Type 1 (not in honeymoon period)	0
Type 1 (in honeymoon period)	0.3

Type 2	0.7
Gestational	0.8
Other	0.8

9.2.11 Advanced Factors
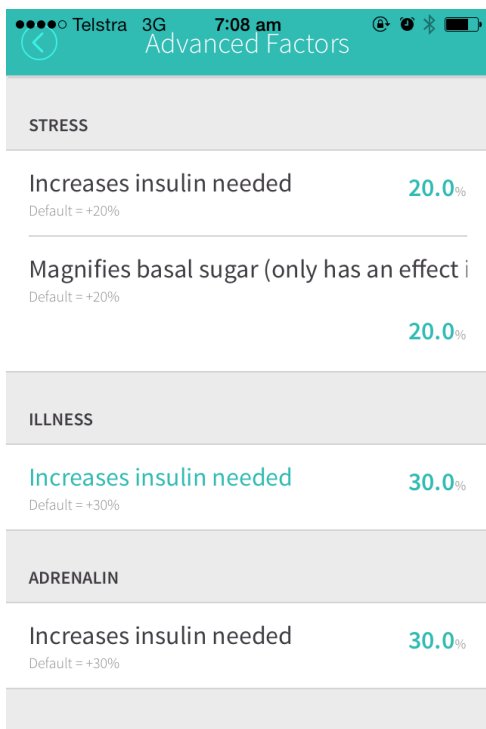
Advanced factors control increases to dose as a result of factors.

Factor	Use for	Default Duration	Default %
Sickness	Add extra Insulin when sick	2 hours	+30%
Stress	Add extra Insulin when stressed	1 hour	+20%
Excited	High-impact sport, or other activities that produce adrenaline.	3 hours	+30%
Menstruation	Add extra insulin during Menstruation. Only shown to females!	5 hours	+5%
Pain	e.g. MS episodes.	2 hours	+30%
Alcohol	A pseudo-factor –it does not modify the dose calculation, but the prediction model uses it to 'shut off' the background-insulin production. Note: Alcohol is only shown to those 16 and older	2 standard drinks	n/a

See Standard Drinks, page 10.

9.3   Blood Glucose
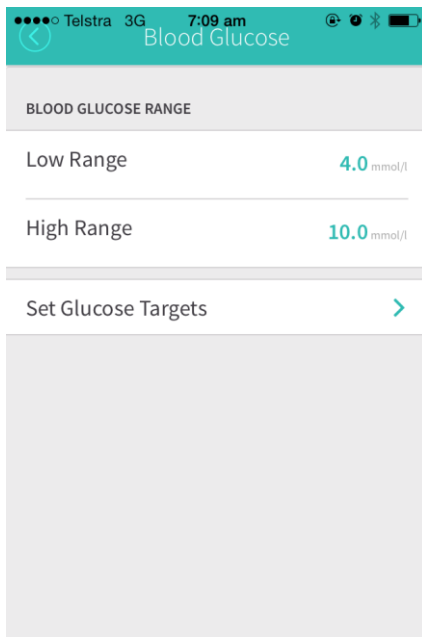
9.3.1   Low and High Range

The Low and High Range is the ideal range (or clinically preferred range) where you would like your blood sugar to be. Below the Low mark is considered Hypo, and above the High mark is considered Hyper.

In addition, the delayed eating suggestions (page) use the High mark and Glucose Target as suggested points at which to start eating if Hyper.

9.3.2   Set Glucose Targets
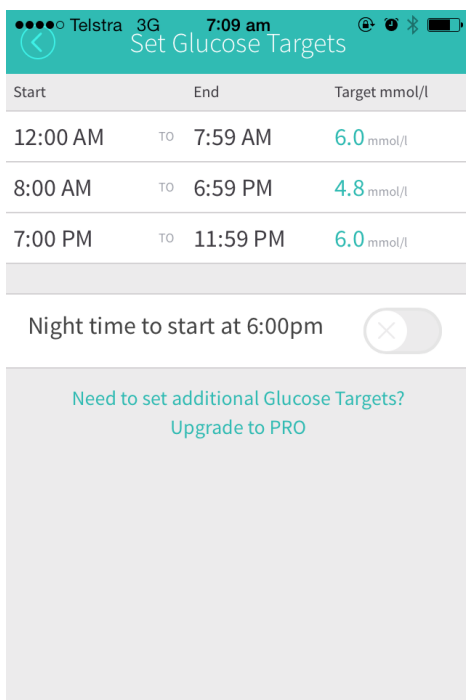
The Glucose Targets work with the Insulin Sensitivity (see page 14) to determine how much insulin to add if your BG is above the Glucose Target, and how insulin much to subtract (or swap for carbs) when you are below the Glucose Target.

Normally the Glucose Target is set lower during the day and higher at night when you are asleep to help prevent overnight hypos.

In the Free App, the times cannot be changed.

To edit a target, press the number to the right of the time period.

9.3.3   Connect Devices – Blood Glucose Meters

Connects to the website to setup connections to connected meters, via a range of data services.

9.3.4   Connect Devices – CGM Devices

Connects to the website to setup connections to connected Continuous Glucose Monitors.

9.4   Carbs
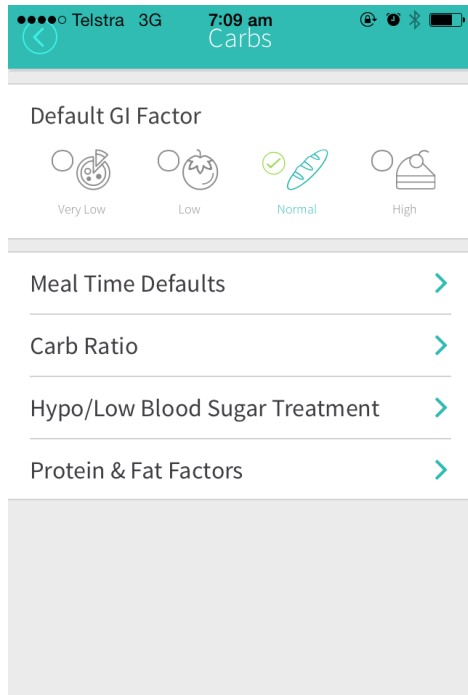
9.4.1   Default GI Factor

If you eat low-GI food (low carb), then you can set the default GI factor to be used by the calculator. If you have gastroparesis, you can also set the default GI factor to low-GI to simulate the longer food absorption time as it empties from your stomach.

9.4.2 Meal Time Defaults

Time		End	Carbs
Breakfast			
7:00 AM	TO	10:29 AM	45.0 grams
Morning tea			
10:30 AM	TO	12:59 PM	30.0 grams
Lunch			
1:00 PM	TO	3:29 PM	60.0 grams
Afternoon tea			
3:30 PM	TO	5:59 PM	30.0 grams
Dinner			
6:00 PM	TO	9:29 PM	60.0 grams
Supper			
9:30 PM	TO	11:59 PM	30.0 grams

Need to modify meal times?
Upgrade to PRO
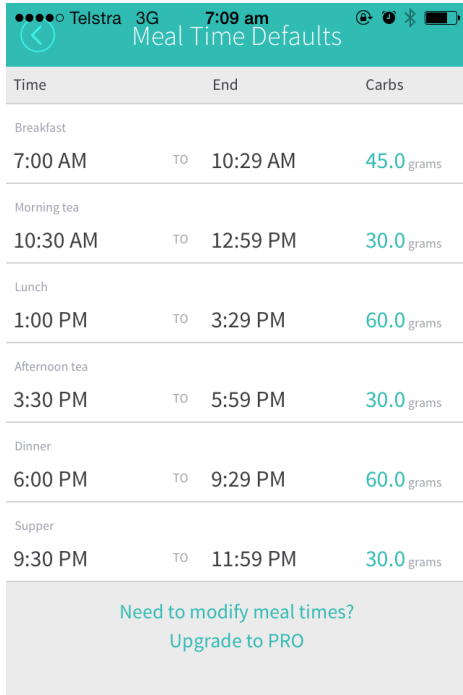
This screen defines your usual meal times and the carbohydrates you usually have for each. This makes it far quicker to enter your carbohydrates, as PredictBGL fills in the expected carbs for the current time, which you can still adjust up or down if required.

9.4.3 Carb Ratio

Please see section 0 on page 14.

9.4.4 Hypo/Low Blood Sugar Treatment

Hypo/Low Blood Sugar Tr…

Hypo Treatment   Jelly Beans

Carbs in each   3 grams
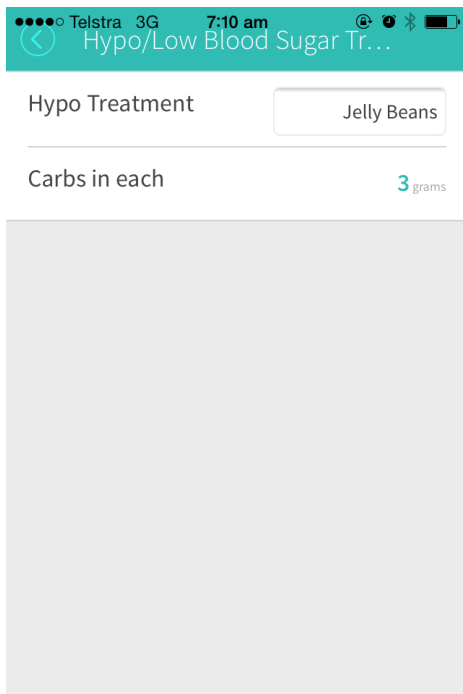
PredictBGL uses this information to tell you exactly how many grams of carbohydrate to take when you get low.

We recommend foods with 3 to 7 grams each, as more than this makes your BGL rise higher than necessary, causing damage.

9.4.5 Protein and Fat Factors
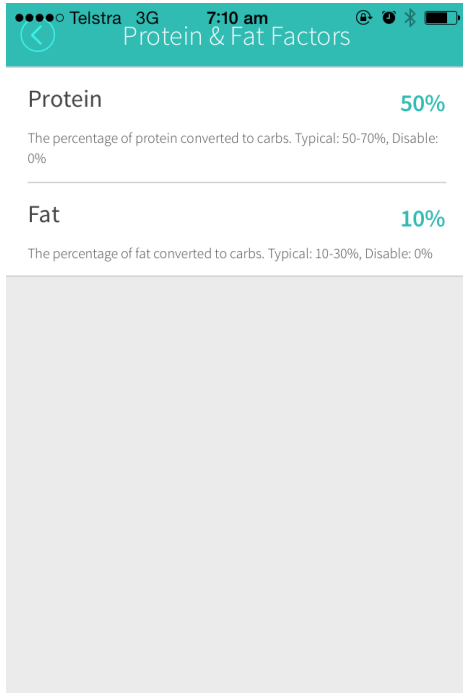
9.5 Exercise

This section allows you to specify how exercise reduces your insulin requirements.

As your diabetes varies compared to other people, you must adjust the percentages if they do not work for you.

9.6 Low/Medium/High Intensity Levels

Exercise is divided into 3 intensities:

Exercise Intensity	Use for	Default Duration	Default %
Low Impact	Walking	4 hours	-10%
Medium Impact	Tennis, swimming, light aerobics	4 hours	-20%
High Impact	High impact aerobics, bike classes, karate, body pump and very high aerobic output exercise	4 hours	-40%

9.6.1   Basal Sugar
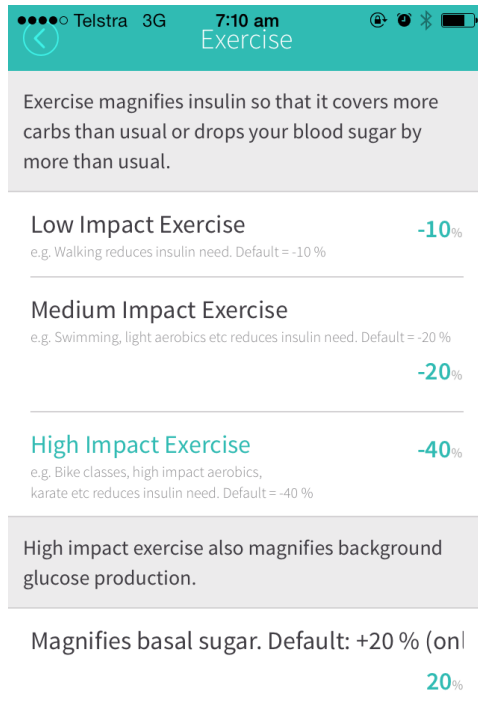
High impact exercise can also increase your background glucose production.

This setting allows you to control how much it is magnified by.

9.6.2   Connect Devices – Fitness Devices

Connects to the website to accept data from connected fitness devices such as Fitbit, JawBone, FuelBand, Shine, TicTrak, FitBit, Validic etc via a range of data services, such as FitnessSycner.

9.7   Reports

This option shows a range of reports that help to summarize and identify issues with your results.

This option is only accessible when you have an internet connection.

9.8   Emergency Contacts

This option displays your emergency contact information.

This option is only accessible when you have an internet connection.

9.9   Sharing and Devices

Connects to the website to setup connections to connected diabetic devices.

9.9.1   Share with Health Care team

Add a member of your Health Care team by adding their email address. The Team member must login and approve the connection before they can see your data. The Team member can log data and modify settings.

9.9.2   Share with some other bod

Shares with another carer. The carer can log data and modify settings.

9.9.3   Connect devices via

PredictBGL offers a range of data integration. You must have an account or device with the third party service in order to use it, and the ManageBGL website will walk you through a one-time connection with that service to link your ManageBGL account with the service's account.

As time of publication, these services are:

- HumanAPI

- Validic

- FitnessSyncer

- Tictrac

- Biomedtrics

- CareMonkey

- Diabeto

- Glooko

- WellDoc

The capabilities of the services very tremendously in sophistication.

9.10 Help and Feedback

9.10.1 Help Manual (PDF)

Opens this manual in your document viewer.

9.10.2 PredictBGL Forum

Allows you to share thoughts and experience and trade stories with other people with diabetes in the PredictBGL forums.

9.10.3 Email Support

Opens your email client to send a support request

9.10.4 Skype

Open skype to chat with us!

9.10.5 Phone

Opens your phone to call us!

9.10.6 TuDiabetes Forums

Opens your web browser at this useful reference site.

9.10.7 DiabetesMine

Opens your web browser at this useful reference site.

9.10.8 Book a Diabetes Educator

Allows you to book a diabetes educator for help with your ratios etc with PredictBGL.

9.10.9 Find a Local Diabetes Organisation

Helps you find a local organisation to support you.

9.10.10   Add Diabetes Organisation

Adds a diabetes organization – and provides them with PredictBGL discounts.

9.11 Points

This option shows points for the way you are managing your diabetes, and shows how you can improve your results.

This option is only accessible when you have an internet connection.

9.12 Did we do well? Rate us!

If you think we're awesome, please rate us via social media! If not, please provide feedback so we can improve.

9.13 Coach

This option shows suggestions from the coach on how you can improve your results.

This option is only accessible when you have an internet connection.

9.14 Social

A multitude of social sharing and following options for you social types.

9.15 More log types (weight, A1C results, etc)

This option allows you to log doctor visits, blood tests and more.

The following settings cannot be set in the App, and must be set via the website

- Avatar
- Age - By adding your age PredictBGL can remind you to get certain aspects of your condition monitored at appropriate milestones.
- Pump Type - You MUST tell PredictBGL if you use a pump or not, as we tailor choices based on this.
- CGMS Type - If you use a CGMS, we will allow you to enter Sensor BGLs on the website BGL and website Logs screens (normally these can only be added via a data import).
- Sharing with Health Care Team, and others
- Third party application access
- Data Import
- Dawn effect
- Sub accounts
- Pump Basal Rate

-    Pattern detection

-    Email monthly points email

-    Newsletter

9.16 About / Legal

9.16.1 Privacy

We won't spam you, here's proof.

9.16.2 Labelling

This displays the legal labelling instructions as to whom the product is suitable for.

9.16.3 Terms of Service

This displays the current terms and conditions, see website for the most recently updated terms.

9.16.4 Regulatory

The regulatory documentation we're required to have.

9.16.5 Adverse Event Reporting

Something went wrong? Please tell us about it.

9.16.6 Version

The current version of the App.

9.16.7 Force Sync Now

Start a sync.

9.16.8 Discard Local Data and Re-download

In the unlikely case of sync failure, this discards all locally cached logs and settings and downloads them fresh.

9.16.9 Log out

This logs out of the App. There is no need to save data, as all data is saved constantly. Use this before giving the phone to someone else.

10 Alcohol and Standard Drinks

In the body, alcohol reduces the liver's constant production of glucose, meaning that basal insulin has nothing to act on, leading to unexpected Hypos.

A standard drink is one that contains 10 grams of alcohol. One standard drink is equal to:

| 285ml regular beer | 425ml low alcohol beer (less than 3% alcohol) | 60ml fortified wine (port, sherry) | 100ml wine | 30ml spirits | Pre-mixed drink |

Source: NDSS – Australian National Diabetes Supply Scheme, ndss.com.au

It is important to be familiar with how much is in a standard drink of each type of alcohol as it is easy to misjudge the amount consumed. In most regions, labels on every alcoholic drink has to show how many standard drinks it contains.

It's important to remember that some drinks served at restaurants, bars, clubs, and particularly at parties, can have more alcohol than a standard drink. As an example, an average serving of wine at a restaurant is 150ml making it 1.5 standard drinks. In addition, cocktails can contain many shots of different spirits, so even though they may look like one standard drink, they can actually contain a whole lot more.

10.1 How much is too much?

Research shows that people with diabetes can drink alcohol like everyone else, but it is advisable that they stick to the recommended 2 standard drinks limit / day. Most people with diabetes

can safely drink alcohol in moderation, but it is always best to check with your doctor if you

have any questions. For young people under 18 years of age, not drinking alcohol is the safest option.

Excessive drinking or 'binge drinking' can be dangerous for your health. Short term effects can include hangovers, headaches, nausea, vomiting, memory loss and injuries. There is also the risk of alcohol poisoning which can cause death. Other effects include changed behaviour such as aggression or depression.

Long term affects can include alcohol dependence which can lead to liver or brain damage over time.

10.2 How does alcohol affect a person with type 1 diabetes?

People with type 1 diabetes face more risks when drinking alcohol than people without diabetes. Alcohol can affect your blood glucose levels (BGLs), which may cause hypoglycaemia (a 'hypo').

When you drink alcohol, your liver thinks it is a toxin that needs to be processed. Until the alcohol is completely processed, your liver will not release a sufficient amount of glucose into your blood which means your BGLs are lower, and may lead to a hypo. Sometimes your BGLs are first raised by the sugar content in some alcoholic drinks (which are mixed with soft drink) and then lowered once your liver starts processing the alcohol. The risk of a hypo occurring is possible both during the time you are drinking, as well as for many hours after drinking.

Symptoms of a hypo can include shaking, sweating, dizziness, headaches, crying, grumpiness, hunger and numbness around the lips and fingers. So it is very important to treat a hypo if you feel any or all of these symptoms.

You should check your blood glucose level. If it is below 4mmol/L you should have:
• Glucose tablets equivalent to 15 grams
carbohydrate OR
• 6-7 jellybeans OR
• ½ can of regular soft drink (not 'diet') OR
• 3 teaspoons sugar or honey OR
• ½ glass of fruit juice.
For more information on how to treat a hypo, see the Diabetes Australia fact sheet:
http://www.ndss.com.au/Documents/NDSS/Resources/Diabetes_Information_Sheets/HYPOGLYCAE MIA-2009.pdf or search the ndss.com.au site.

10.3 Alcohol and hypos

If you drink alcohol, you and your friends may not recognise the symptoms of a hypo because it may be assumed that you are drunk. This is dangerous because you may not get the right help fast enough.
Young people with type 1 diabetes need to plan ahead if they are drinking. Tips to reduce your risk of alcohol-related hypos:

• Never drink on an empty stomach. Always ensure you have some carbohydrate in a meal or snack prior to commencing drinking.
• Check your blood glucose just before going to bed to minimise the chances of hypoglycaemia while sleeping.
• Eat a snack before going to bed. Remember that the body continues to process alcohol even after drinking stops.
• Never drink alone. Identify a friend, who knows you have diabetes, to watch out for you if you decide to drink. Make sure they know how to recognise when you are having a hypo and that they know how to help you to treat it.

11 Troubleshooting

11.1 Charts

11.1.1 Rises – constant slope straight lines

Missing basal insulin logs, for 12 hours prior (Levemir) or 24 hours prior (Lantus)

Dawn effect (only editable via website)

11.1.2 Drops – constant slope straight line

If the drop is a straight line, then most likely it comes from a basal insulin overlap.

e.g. having 10 units Lantus at 8am on Monday, but 6am on Tuesday – there are 2 hours of overlap.