Creating and interpreting reports

In this video, we will explore the process of creating and interpreting reports using the Glooko software with Omnipod 5. By connecting your Omnipod 5 app to Glooko, you can seamlessly transmit data every 5 minutes, enabling real-time access to various insightful reports.

Throughout this video, we will cover the different types of reports available in Glooko and how to effectively interpret and analyze the data presented in these reports.

By mastering the creation and interpretation of reports, you will gain valuable insights into your diabetes management, allowing for informed decisions and improved overall control. Let's dive in and discover the power of Omnipod 5 reports with Glooko!

1 Types of reports

In Glooko, you can find the key reports under the tabs Summary, Graphs, Insights and Devices

The summary tab is the first tab within any patient profile on Glooko. Here you have the patient's name, date of birth and their type of diabetes. You can also create pdf reports.

Below that we have the time selector. Here, using the drop down, you can select between a variety of time periods, from one day to 90 days, and custom time ranges. You can select between blood glucose data and CGM data using the selector on the right hand side. Using the arrows below you can navigate between different time periods in the increments selected, in the time drop down box above.
As we continue to scroll, you can see that we have the glucose data divided into time in range, time below range and time above range.

We can also see other metrics such as the glucose management indicator, the averages, as well as the highest and lowest blood glucose readings within this time period. As we continue to scroll, you'll see that we are presented with an AGP graph.

Here you can see the dark line indicating the median and the various shaded areas showing the statistical distribution.

As we look towards the right hand side of the summary tab you can see insulin data. Here we have the average total daily basal dose and bolus dose and also this percentage split between each. We can see the total daily dose on average as well as the percentage of overrides that this patient is doing using in this case their insulin pump. Overrides will not always be available as will some other metrics metrics will be displayed based on the availability of the data in the devices that that patient is using.

For example, for users of Omnipod 5, the Glooko summary report will also show these System Details, indicating the amount of time in Automated Mode, Limited Mode, Activity Feature and Manual Mode. It is important to note that Limited Mode may occur when there is a lack of sensor data for more than 20 minutes, such as during sensor warm-up or during prolonged periods of maximum and/or minimum insulin delivery. Understanding these modes and their durations will help in assessing the performance and functionality of the Omnipod 5 system.

As we continue to scroll you can find dietary information for average carbs per day and the number of entries and below that we finally have the history section here we have all the events listed for the time period selected including food, blood glucose results, and any insulin use.

The overview tab within the graph section of a patient's profile is particularly flexible and allows for deep insights into the data that has been uploaded. First we can select the time range that we would like to review from the drop down including custom time ranges. After doing this we can review the graph below where we see glucose results color coded for those that are above within and below the target range including a black trend line. Below that we have carbohydrates which are represented as proportionally sized bars on the chart representing the amount of carbohydrates that are recorded for each day. Likewise

we have proportionally sized bars for insulin which indicate the amount of insulin that's been administered on each day.

The great thing about the charts within Glooko is that they can be interacted with. So when we highlight a particular day, we can see the median glucose for that day. We can see the total carbs as well as the total units of insulin over the course of that day. If we want to see this information in a more detailed view, you can actually click on that specific day. That will then bring up a much more detailed chart, which will show the sensor results. But this time they will be presented alongside the individual blood glucose values that were recorded. Beneath that we have the carbohydrate values that were recorded. And when we hover on them we have the exact time that they were recorded. We have bolus insulin which is presented with proportional bars and when we hover over these we get more information such as this one here.

Beneath that we have the basal ray where you see the dotted line represents a temporary basal the solid line represents a scheduled basal and we might get gaps in that line such as we see here on the right hand side which is signified by the red dots which show that the basal was suspended during this time.

For users of the Omnipod 5 system, you can also see the automated basal insulin delivery and the System details.

For patients that are using insulin pumps the Insights tab can be particularly useful as it allows clinicians and patients to see how the events and features that are unique to an insulin pump are impacting the diabetes management. Here you can see that we start on the set and site change tab. Here we can see how frequently a patient is changing the set or site their pump is located. You can see for instance that this patient has changed their pump set after two days, they have changed it five times after three days, and they have changed it three times after four days. This allows the clinician and patient to see if the patient is sticking within the recommended guidelines and perhaps here where the patient changed it after two days there was an issue with the pump that they would then want to discuss with their clinician further.

As we scroll down you can see the date and time of each one of these events and the time since the last set or site change. You'll see on the right hand side we have

each of the events lined up here down the black line. We can see glucose control for 12 hours prior to the event and for six hours after the event. This allows us to see if how the event has actually been handled has impacted glucose management. For instance inserting a cannula into a hard fatty lump. This may impact how insulin is absorbed by the body and might be something that a clinician would want to explore further with a patient and offer an education opportunity.

The device tab within a patient's profile shows all of the devices that are contributing data to the report seen within the profile. On the left hand side, you can find all the devices listed, along with the serial number and the time the device was last synced with Glooko. If we select a device such as an insulin pump you'll see we have device specific information including the basal profiles. These are represented in a text format and graphically, showing the units per hour the insulin will be delivered and how this varies over a 24 hour period. As we continue to scroll you'll find other information such as the carb ratios, insulin sensitivity and the target blood glucose ranges, which the device uses to provide guidance for both correction and bolus dosis.

As we scroll back to the top of the screen we can access device settings. Here we have general information such as the active insulin time, the units that the device is reporting in, as well as parameters such as the maximum bolus and maximum basal rate. Please note that you cannot change settings from here, but they will be recorded. Which is really useful, because if you decide to change settings in order to benefit patient outcomes, but this does not have the desired effect, and you wish to revert to settings that have previously been used, you can use the drop down box on the right hand side, to view settings from previous uploads. You'll see on the left we have an icon of a clock and again that is shown at the top of the screen. That indicates that the time and date on this device do not align with the time and date of the glucose server. In this case you can see by the text on the right hand side that this device deviates by three minutes. It's important that all the devices that a patient is using are synchronized in order to ensure that the reports are of the highest quality and you can gain the best clinical insights from them for assisting a patient and informing clinical decision making.

When generating a PDF report in Glooko, you will also have access to the Weekly Overview alongside other reports.

This report allows you to compare multiple daily reports in detail, providing a faster and more efficient way to analyze the data compared to viewing them individually through the charts tab.

2 Interpreting reports

With Omnipod 5, the target value, correction factor, duration of insulin action and carbohydrate-to-insulin ratio are the key parameters that can be adjusted to personalize your insulin therapy. The target value represents the desired glucose level, and it can be set for each time block to accommodate different insulin needs throughout the day. Similarly, the carbohydrate-to-insulin ratio determines the amount of insulin required for a certain amount of carbohydrates consumed. Both of these parameters can be easily adjusted within the bolus settings, allowing you to fine-tune your insulin delivery based on your individual needs and preferences.

When analyzing the reports, it is beneficial to follow a structured approach, as emphasized in the general module on automated insulin delivery systems. Here is a roadmap to guide your interpretation:

1. Assess Glycemic Information: Begin by evaluating the Time in Range and Time Below Range over the past 2-4 weeks on the Summary Tab.

- Ensure that treatment goals are being met, with Time in Range above 70% and Time Below Range below 4%.
- It is important to pay attention to the frequency of meal bolusing, which is also indicated in the Summary Tab of Glooko. On average, there should be around 3 boluses per day for meals, with a few additional boluses for snacks. If you notice an unusually high number of boluses, such as 20 boluses per day, it may indicate that the user doesn't trust the system and is constantly interfering by delivering manual correction boluses. On the other hand, fewer than 3 boluses per day may indicate that the user is neglecting to bolus for food and mistakenly believes that the algorithm will “cover” their meals and snacks.

2. Optimize AID Settings: Analyze the AGP (Ambulatory Glucose Profile) on the Summary Tab to identify trends of hypo- or hyperglycemia, and check if these trends are related to boluses on the Weekly Overview reports.

- If you notice trends after meal boluses, it's important to assess various factors such as bolus timing and accurate carbohydrate counting, before adjusting the carb ratio.
- If you see a trend after manual or autocorrection boluses, you can try to adjust the correction factor, the duration of insulin action or the “Correct Above” threshold.
- For trends outside of meal boluses, consider adjusting the target value. Keep in mind that you have the flexibility to adjust the target value based on different time blocks. If glucose levels are modestly elevated through the night, consider lowering the target value further during overnight periods to optimize your Time in Range (TIR) and improve overall glycemic control.
- Additionally, explore possible correlations with factors such as exercise, alcohol consumption, or hypoglycemia.

3. Guide Behavioral Recommendations: To ensure the proper usage of the automated insulin delivery system, it is important to review various aspects in the reports available. Here are some key considerations:

- Check the sensor wear duration and time spent in Automated Mode in the Summary Tab
- The time in Automated Mode should be >90%, and the time in Limited Mode should be low. If the time in Limited Mode is high, this could be caused by a poor connection between the transmitter and Pod. You can check to ensure that the sensor and Pod are worn on the same side of the body, in sight of each other, to have fewer connection problems.
- Another cause of excessive Limited Mode is a frequent "Automated Delivery Restriction" alarm. Assure the user that this is more common during the first few weeks of system use, and that it is important to respond to it by confirming the accuracy of the CGM and then turning Automated mode back on.
- Also in the Summary Tab: Evaluate if bolus calculator overrides are low (ideally 0%). Also, check the amount of carbs entered for meals.
- Weekly Overview Report: Assess the adherence to pre-meal bolusing, overcorrection of hypo- and hyperglycemia, and the appropriate use of the Activity Feature.
- On the Insights tab, you can check if the Pod replacement is being performed as recommended (which is usually every 3 days)

- Ask the patient if the sensor alert settings align with the user's needs and preferences. These can be adjusted in the Dexcom G6 app.

4. Review Pump Settings and Emergency Plans:
    - Devices Tab: Verify that the preset basal insulin rate on your Omnipod Pod aligns approximately with the amount of basal insulin being delivered in Automated Mode. This can be accomplished by dividing the average daily basal delivery by 24.
    - Keep a detailed record of all pump settings and create an emergency plan that includes instructions for using long-acting and short-acting insulin pens in case of a pump malfunction. Ensure easy access to insulin pens for such situations.

Finally, it is worth mentioning the valuable tools provided by the Barbara Davis Center in Colorado. Their website, Panther Diabetes, offers free downloadable resources, including two roadmaps specifically designed for monitoring individuals on Omnipod 5. These resources, available for download at the bottom of the video, offer guidance and support in optimizing diabetes management. It is essential to emphasize the significance of education in conjunction with these tools to ensure a comprehensive approach to diabetes care. By leveraging these resources and staying committed to continuous education, individuals can maximize the benefits of Omnipod 5 and enhance their overall diabetes management.