

ID: _____

rtCGM-Profi-Check

The following questions help you assess how well prepared you are to use an rtCGM system for continuous glucose measurements.

Only one answer is correct or fits best for each question. If you do not know the answer, please choose "I cannot answer that yet". The following questions will verify what you already know and what we should explain to you.

Date: _____

First, some questions about you personally:

Your age: _____ (years)

Your gender: Female Male Diverse

Your diabetes type: Type 1 Type 2 other: _____

Your diabetes duration: _____ (years)

Your education level: Secondary school (graduation after 9th grade)
 Secondary school (graduation after 10th grade)
 University entrance qualification (IB)
 No graduation yet

Your current professional activity: Full-time Part-time ___% Seeking work
 Education (school / study) Parental leave Retired Other _____

Your current HbA1c value: _____% (_____ mmol/mol Hb)

Which rtCGM system do you currently use or will use in future?

Dexcom _____ Medtronic _____ Roche Eversense _____

Other: _____

When did you start to use the rtCGM system? Month / year: _____

Did you use another CGM system before? No Yes: _____ (name)

Do you use an insulin pump?

No Yes Which insulin pump: _____

Does your system offer sensor-augmented insulin pump therapy?

No Yes I cannot answer that yet

The following questions reviews your knowledge about current rtCGM systems

Please check only **one** answer per question! The answer should refer to **your planned or existing rtCGM system**.

If you do not know the answer, please choose **"I cannot answer that yet"**.

1. **What does a glucose sensor measure?**
 - Current blood glucose value
 - Current tissue glucose value
 - Increase of blood glucose values within the next 5 minutes
 - Glucose value in a large blood vessel
 - I cannot answer that yet*

2. **How do tissue and blood glucose values relate to each other?**
 - Tissue glucose value precedes the blood glucose value by about 5 – 15 minutes
 - Blood glucose value precedes the tissue glucose value by about 30 minutes
 - Tissue and blood glucose values are always roughly equal
 - Blood glucose value precedes the tissue glucose value by about 5 – 15 minutes
 - I cannot answer that yet*

3. **Which medication can influence the accuracy of your glucose measurement?**
 - Contraceptive pill
 - Acetaminophen / paracetamol
 - Acetylsalicylic acid / aspirin
 - There is no medication known that influences my glucose
 - I cannot answer that yet*

4. **Where should replacement sensors be stored?**
 - In the freezer
 - In the vegetable drawer of the fridge
 - Temperature is unimportant
 - At room temperature
 - I cannot answer that yet*

5. **When should blood glucose measurements be done when using for your rtCGM system in daily life?**
 - Every two hours and for calibration
 - Before every therapy decision and for calibration
 - For each episode of hypoglycemia and for calibration
 - Only for calibration
 - I cannot answer that yet*

- 6. What time is best for daily calibration?**
- In the morning after breakfast
 - During times with horizontal trend arrows
 - Shortly after an episode of hypoglycemia
 - All time points are suitable
 - I cannot answer that yet*
- 7. At what time are blood and tissue glucose values roughly equal?**
- During exercise
 - During an increase of the blood glucose
 - Mostly in the morning
 - When trend arrows indicate a stable glucose value
 - I cannot answer that yet*
- 8. How long does it take until you can see a change in blood glucose in tissue glucose as well?**
- About 30 seconds
 - About 5 - 15 minutes
 - About 30 minutes
 - In the morning about 5 minutes, in the evening about 3 minutes
 - I cannot answer that yet*
- 9. When are the differences between blood and tissue glucose values especially big?**
- After meals with a steep blood glucose increase
 - In the second half of the night during sleep
 - Before exercise with a horizontal trend arrow
 - Directly after waking up
 - I cannot answer that yet*
- 10. What is important before an examination with magnetic resonance imaging (MRI)?**
- You should drink a lot to enable an accurate rtCGM measurement during the examination
 - The whole rtCGM system should be removed and stored in a separate room
 - Only the transmitter should be removed shortly before the examination
 - Because it will not be too hot during the examination, the system does not have to be removed
 - I cannot answer that yet*
- 11. What should you remember about regarding your rtCGM system if you need to go to hospital?**
- Completely remove the rtCGM system before going to the hospital
 - Nothing, because doctors will take care of everything
 - Take enough consumables (like sensors, charging device) along
 - Blood glucose test strips are sufficient; the rest will be organized by the clinic
 - I cannot answer that yet*

- 12. Where does the glucose measurement with an rtCGM system take place?**
- In a very fine blood vessel
 - In upper skin cells
 - In subcutaneous fat tissue
 - In muscle cells
 - I cannot answer that yet*
- 13. What should you do before an exhausting physical activity like jogging?**
- Remove the transmitter to prevent its loss
 - Calibrate the rtCGM system
 - Secure the sensor and transmitter, e.g., with tape
 - No specific preparation is needed
 - I cannot answer that yet*
- 14. What is important to note for taking a shower while wearing your rtCGM system?**
- My system (sensor and transmitter) is waterproof; taking a shower is no problem
 - My system (sensor and transmitter) is not waterproof and should be removed before taking a shower or bath
 - Sensor and transmitter always have to be secured, e.g., with waterproof tape
 - Only the transmitter has to be removed before taking a shower or bath
 - I cannot answer that yet*
- 15. What is important to note if you want to go swimming with your rtCGM system?**
- My system (sensor and transmitter) is waterproof for only 10 minutes, thus it should be removed completely before going swimming
 - Data transferred to the display during swimming are not reliable
 - The rtCGM system provides accurate data until about 30 minutes in the water
 - My rtCGM system provides reliable data down to a diving depth of 30 meters
 - I cannot answer that yet*
- 16. What can your rtCGM system do?**
- It automatically adapts the insulin dose if glucose values are too high
 - It determines the tissue glucose value day and night
 - It accurately measures the blood glucose value
 - It automatically delivers the correct insulin dose for every meal
 - I cannot answer that yet*
- 17. What is not displayed on your rtCGM system?**
- The course of tissue glucose within the last few hours
 - A trend arrow for tissue glucose
 - The current blood glucose value
 - The time
 - I cannot answer that yet*

- 18. How do tissue and blood glucose values relate to each other?**
- Tissue and blood glucose values are always roughly equal
 - The tissue glucose value is about 20 mg/dl (1.1mmol/l) lower than the blood glucose value
 - Only when high are tissue and blood glucose values equal; when low they differ about 30 mg/dl (1.6 mmol/l)
 - When glucose values are stable (horizontal trend arrows), both are almost equal
 - I cannot answer that yet*
- 19. What do trend arrows on the display of the receiver indicate?**
- The glucose value you will reach within the next hour
 - The time you will experience hypoglycemia
 - The trend of tissue glucose at this moment
 - The effect of insulin within the next 2 hours
 - I cannot answer that yet*
- 20. What is necessary for a perfect calibration?**
- Enter the blood glucose value into the rtCGM system exactly after 10 minutes
 - Only use the second blood drop for the measurement
 - Use a new and accurate blood glucose measurement device every 14 days
 - Wipe the finger with clean paper tissue before measurement
 - I cannot answer that yet*
- 21. Where can you most likely insert the glucose sensor of your system?**
- Near the insulin catheter of the pump
 - On every part of the body that is easy to reach
 - Areas where there is no pressure on the sensor (e.g., during sleep or caused by a belt)
 - Lipomas (harder skin areas), because sensors do not hurt and accurately measure in these areas
 - I cannot answer that yet*
- 22. What would be best to do for a steep increase of glucose or if trend arrows point upwards a half an hour after breakfast?**
- To be on the safe side: deliver 2 additional units of insulin to prevent a further increase of the glucose value
 - Increase basal insulin 20% for the next 2 hours
 - Skip the next snack
 - Keep in mind that the insulin is still active and adjust it no earlier than 2 hours after a meal
 - I cannot answer that yet*

- 23. How should the skin be prepared before sensor insertion?**
- Before sensor insertion, the skin should be disinfected carefully and be dry again
 - It is sufficient to clean the skin with clear water before sensor insertion
 - The insertion site should be massaged directly after the insertion
 - The sensor should be inserted directly through the moist skin after applying the disinfectant
 - I cannot answer that yet*
- 24. What would the best repetition interval setting for the low alarm?**
- A repetition interval of 1 hour prevents permanent alarms
 - A repetition interval of 15 seconds enables optimal safety
 - A repetition interval of 10 – 20 minutes helps in case the first alarm was missed
 - A repetition interval of 60 minutes is favorable
 - I cannot answer that yet*
- 25. Where will your glucose value be in 10 minutes if the trend arrows of your rtCGM system point upwards?**
- In 10 minutes the value will increase about 20 – 30 mg/dl (1.1 – 1.7 mmol/l)
 - In 10 minutes the value will increase about 10 – 20 mg/dl (0.5 – 1.1 mmol/l)
 - In 10 minutes the value will increase about 60 – 70 mg/dl (3.3 – 4.0 mmol/l)
 - In 10 minutes the value will increase about 100 mg/dl (5.6 mmol/l)
 - I cannot answer that yet*
- 26. Which setting of the low alarm would be best for preventing a warning that is too early or too late?**
- A value of 100 mg/dl (5.6 mmol/l)
 - A value of 50 mg/dl (2.8 mmol/l)
 - A value of 80 mg/dl (4.4 mmol/l)
 - A value of 120 mg/dl (6.7 mmol/l)
 - I cannot answer that yet*
- 27. What would be the best repetition interval setting for the high alarm?**
- A repetition interval of 30 minutes prevents permanent disturbance
 - A repetition interval of 60 seconds enables optimal safety
 - A repetition interval of 10 minutes helps in case the first alarm was missed
 - A repetition interval of 90 - 120 minutes is favorable
 - I cannot answer that yet*

28. Where will your glucose value be in about 5 minutes if the trend arrows of your rtCGM system point downwards?

- In 5 minutes the value will decrease about 10 – 15 mg/dl (0.6 – 0.8 mmol/l)
- In 5 minutes the value will decrease about 5 – 10 mg/dl (0.3 – 0.6 mmol/l)
- In 5 minutes the value will decrease about 30 – 35 mg/dl (1.6 – 2.0 mmol/l)
- In 5 minutes the value will decrease about 50 mg/dl (2.8 mmol/l)
- I cannot answer that yet*

29. What does a pie chart show during data evaluation?

- The mean tissue glucose value
- Percentage of time in which glucose values were within the target range, too low, and too high
- The number of severe episodes of hypoglycemia
- The time of day with the most glucose values that are too high
- I cannot answer that yet*

30. At what time in the morning is it best to calibrate your rtCGM system?

- Directly after waking up, when you are not up yet
- Approx. half an hour after breakfast
- Shortly before breakfast after taking a shower
- Preferably always exactly at 7 o'clock
- I cannot answer that yet*

31. You want to know if the insulin amount per 10 grams of carbohydrate at lunchtime is correct. What data are necessary for this?

- The amount of grams of carbohydrates from 3 days
- The estimated amount of carbohydrates entered from one week
- The insulin dose, the exact amount of carbohydrates, and other special features (exercise, illness, stress) from 14 days
- The continuous tissue glucose values are sufficient
- I cannot answer that yet*

32. What information does the line diagram of the rtCGM data primarily provide?

- It shows times of the day with especially high and low values
- It shows the mean glucose value of the last week
- It shows whether the blood glucose value varied a lot
- It is possible to detect the HbA1c outside the lines
- I cannot answer that yet*

33. During sleep at night, your glucose value suddenly drops sharply. What could be the reason?

- The meal insulin for dinner was delayed
- You had a nightmare
- You were lying on the sensor; thus, the tissue was insufficiently supplied with blood
- The basal insulin had a stronger effect at night because it was injected into a lipoma

- I cannot answer that yet*
- 34. Owing to an episode of hypoglycemia, you immediately took 20 g of glucose. After 5 minutes, another low alarm with trend arrows pointing downwards occurs. What is the cause?**
- The glucose is too old and does not work correctly
 - There is a time delay between tissue and blood glucose values
 - It takes more than 5 minutes until the glucose increases the tissue glucose value
 - During hypoglycemia, the tissue glucose value is clearly lower compared to the blood glucose value
 - I cannot answer that yet*
- 35. At what time is *no* premature sensor change necessary?**
- When tissue glucose values constantly and strongly differ from blood glucose values
 - When itching and inflammation occur at the insertion site
 - When the sensor was in contact with splash water
 - When there is still a big difference compared to the blood glucose values although several calibrations were performed
 - I cannot answer that yet*
- 36. Which data do you need for optimal use of sensor data for diabetes therapy?**
- Insulin doses should be entered additionally/should be copied from pump
 - It is sufficient to enter grams of carbohydrates from one week
 - Insulin dose, nutrition, exercise, and other special events should be entered continuously by means of the diary function
 - The continuous tissue values are sufficient
 - I cannot answer that yet*
- 37. Owing to an episode of hypoglycemia, you immediately took 20 g of glucose. After 5 minutes another low alarm with trend arrows pointing downwards occurs. What should you do first?**
- Immediately take 20 g of glucose again
 - Immediately drink a small bottle of Coke
 - Immediately measure your blood glucose value and take calm action
 - Do nothing; 20 g glucose are always sufficient
 - I cannot answer that yet*
- 38. Your high alarm is set to 160 mg/dl (8.9 mmol/l). After meals, you often get an alarm. Which reaction would be particularly *unfavorable*?**
- Immediately correct the high value with additional insulin
 - Wait and calmly consider whether insulin is still active
 - Think about a longer interval between injecting and a meal
 - Think about a higher insulin dose per 10 grams of carbohydrates
 - I cannot answer that yet*

39. Which graphic best shows whether your insulin dose for meals is correct?

- The pie or bar diagram for 3 days provides a good overview
- The line diagram for about 3-4 hours after each meal
- The mean glucose value before sleep
- The standard deviation of glucose values during a day
- I cannot answer that yet*

40. Which graphic most easily shows if your basal insulin is sufficient at night?

- The pie or bar diagram provides a good overview
- The mean line diagram of the night from one week
- The mean glucose value on waking up
- The mean glucose value at about 2 a.m.
- I cannot answer that yet*

You made it!

Please check that you did not miss a question.

Thank you!