

# Day-to-Day Management of Cystic Fibrosis Diabetes and Reviews

## Information for patients, parents and carers

### Blood glucose (sugar) monitoring:

Glucose monitoring can be carried out using finger prick testing or using a freestyle libre glucose sensor.

For young people receiving mealtime insulin, glucose levels should be measured before any meal for which insulin is given, and two hours after that meal. This is to ensure the correct insulin dose is given.

When using a freestyle libre glucose sensor, this should also be scanned at least every 8 hours to record glucose information over the full 24 hours (including a scan before going to bed and on waking).

We will make an individualised glucose monitoring plan with you, taking account of current insulin dosing.

### When do you need to consider changes to insulin dose?

When cystic fibrosis diabetes (CFD) is treated with insulin, the aim is to give as much insulin as possible to maintain blood glucose within the target range. It is very normal to need increases in insulin doses over time.

We suggest reviewing blood glucose patterns every two weeks.

Insulin doses may need to be **reduced** if:

- There have been more than two episodes of hypoglycaemia (low blood sugar) in a week, following a dose of insulin.

Insulin doses will need to be **increased** if:

- Blood glucose is more than 7.8 mmol/l two hours after insulin is given for a meal for three days in a row
- Time spent above the target glucose range is more than 10 % (set at 4 - 7.8 mmol/l in libre scanner).

### How to adjust insulin doses

Guidance is given below on how to adjust insulin doses. You will gain confidence with time in making these adjustments independently. The diabetes team are also very happy to discuss these adjustments with you (by telephone or email).

Please do not wait until your next diabetes clinic appointment to review glucose readings and adjust insulin doses, as it is likely that adjustments will be needed more often.

BG 2 hours after the meal	Action needed	Suggested ratio change	
<b>High</b> (more than 7.8 mmol/L)	Decrease the number of grams of carbs that 1 unit of insulin will cover	1:5→1:4 1:6→1:5 1:8→1:6 1:10→1:8 1:12→1:10 1:15→1:12	1:18→1:15 1:20→1:18 1:25→1:20 1:30→1:25 1:35→1:30 1:40→1:35
<b>Low</b> (lower than 4 mmol/L)	Increase the number of grams of carbs that 1 unit of insulin will cover	1:4→1:5 1:5→1:6 1:6→1:8 1:8→1:10 1:10→1:12 1:12→1:15	1:15→1:18 1:18→1:20 1:20→1:25 1:25→1:30 1:30→1:35 1:35→1:40

Before making an insulin dose adjustment, consider the following points:

- Is carbohydrate counting accurate?
- Are injection sites lumpy? You will be shown how to assess this by a diabetes team member.
- Are bolus injections being given 10-20 minutes before a meal?
- Has there been any exercise over this time period? How was it managed?
- Have there been any missed injections? This is unfortunately a common cause of poor diabetes control.

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## Diabetes clinic appointments

It is important to attend a diabetes clinic appointment every 3-4 months. Usually these appointments are face-to-face, but can be by telephone if it has been possible to share diabetes data electronically.

At a diabetes clinic appointment, we will discuss any further support needed for diabetes care, current treatment, and glucose patterns. Height and weight will be measured, and a finger prick blood sample for HbA1c carried out. HbA1c is a measurement of amount of glucose in the bloodstream over the last 3 months.

For 1-2 weeks before a diabetes clinic appointment, we ask that young people either:

- Wear a libre sensor and scan this before and 2 hours after each meal, and before bed

**Or:**

- Carry out an 8-point finger prick blood glucose profile (before and two hours after each meal).

This is to allow a review of glucose control over the whole 24-hour period.



**Please bring to clinic:**

- Blood glucose monitoring diary
- Blood glucose meter (or download the data at home for a telephone appointment)
- Food/carbohydrate diary, if you have been asked to keep one.

**When to contact the diabetes team between appointments?**

- If you would like advice about dose adjustment
- If you have any queries related to diabetes care.

Contact us on: **0131 312 0460**

