



Chapter I

Problem Solving and Adjusting Insulin

I: Problem Solving and Adjusting Insulin

I1: Insulin adjustment

These guidelines relate to basal bolus regimens where you are giving rapid acting insulin with carbohydrate and long acting insulin once or twice per day.

If there is a pattern of three or more blood glucose levels higher or lower than the target range, review time last insulin dose given and food given, portion size of meals and snacks, carbohydrate counting, whether snacks require insulin. Once considered, discuss with the team as the insulin to carbohydrate ratio may need to be adjusted.

If the current Insulin to carbohydrate ratio (ICR) is 1unit:10grams and the average amount of carbohydrate is 50g. Calculate how much insulin this would be if changed to 1 unit:8 grams). One change at a time and review after 2-3 days before making further changes is recommended.

Exercise and activities such as school sports/ swimming/dancing/shopping can all affect your glucose levels and may need insulin doses to be adjusted before and or after. Please see activity and exercise section for further information. Hormonal activity during growth or menstrual cycle can also affect glucose levels.

If in any doubt always ask a member of the diabetes team.

I2: How to adjust insulin - Frequently Asked Questions

- What to do if you are high
- What to do if you are low at certain times of the day
- What to do if you have missed your insulin
- What to do if you have given the wrong insulin
- What to do if you have given the wrong amount

These guidelines relate to basal bolus regimens where you are giving fast acting insulin with carbohydrates and long acting insulin as a background.

It is important to remember **Don't Panic if you have given the wrong insulin or amount. Please ring the team or advice line.**

What to do if your glucose is 'High'

Q: Is your glucose level above 7mmol/L on most mornings before food?

- Yes:**
- First check a blood glucose level around 2-3am to ensure you are not going low overnight.
 - Make sure you are going to bed with a glucose level in target, if so check your glucose level is within target in the morning.
 - If your bedtime glucose is within target but your blood glucose levels rise during the night then increase your long acting Insulin by 0.5-1unit (depending on dose and weight) if taken at night. Wait 2-3 days and repeat if still above 7 mmol/L. on waking.
 - If your bedtime glucose levels are above target at bedtime which then makes them high in the morning you need to concentrate on improving your before bed glucose levels.

No: Leave your long acting dose the same.

Q: Is your blood glucose level above 7mmol/L before lunch on most days?

Yes: If you do not eat a snack mid-morning, consider increasing your meal ratio with breakfast. If you have a mid-morning snack you may need extra insulin with this, or consider omitting snack, or limit carbohydrate amount/ consider type. If unsure what to do discuss with your diabetes team.

No: Keep your ratio with breakfast the same.

Q: Is your blood glucose level above 7mmol/L before tea on most days?

Yes: If you do not have a snack mid-afternoon, consider increasing your meal ratio with lunch. If you have a snack mid-afternoon you may need insulin with this, or consider omitting snack, or limit carb amount. If unsure what to do discuss with your diabetes nurse.

No: Keep ratio with lunch the same.

Q: Is your blood glucose level above 7mmol/L before bed on most days?

Yes: Consider increasing meal ratio with tea if no other snack eaten.

No: Keep ratio with tea the same.

Q: Have you eaten anything and forgotten to give Insulin?

Yes: Give rapid acting insulin now for carbohydrates eaten.

No or not sure:

Recheck blood glucose in 60 mins and give correction if necessary. Use your Insulin Sensitivity Factor/correction dose (ISF) to work this out. See chart.

Q: Have you given insulin in the last 90 mins?

Yes: Do nothing and recheck blood glucose in 60 mins.

No: Give a correction dose using rapid acting Insulin. Or you could wait until the next meal to give a correction if answer to next question is no.

Q: Do you have blood ketones over 0.6mmol/L?

Yes: Consider contacting the Diabetes team for urgent advice. Give a correction dose of Rapid Acting Insulin now, giving a sick day dose for ketones. (unless you have given insulin in the last 90mins, then recheck blood glucose and ketones in 60 mins)

No: Add a correction dose of Rapid Acting Insulin to next meal.

What to do if your blood glucose is 'Low'

Q: Is your blood glucose level below 4.0mmol/L on most mornings before food?

Yes: Reduce your long acting Insulin by 0.5-1unit if taken at night. Wait 2-3 days and repeat if still 3.9mmol/L or below.

No: Leave your long acting dose the same.

Q: Is your blood glucose level below 4.0mmol/L before lunch on most days?

Yes: Decrease your meal ratio with breakfast.

Alternatively, consider giving small snack mid-morning without insulin. If unsure what to do discuss with your diabetes nurse.

No: Keep your ratio with breakfast the same.

Q: Is your blood glucose level below 4.0mmol/L before tea on most days?

Yes: Decrease your meal ratio with lunch.

Alternatively, consider having small snack mid-afternoon without insulin. If unsure what to do discuss with your diabetes nurse.

No: Keep ratio with lunch the same.

Q: Is your blood glucose level below 5.0mmol/L before bed on most days?

Yes: Consider decreasing meal ratio with tea.

No: Keep ratio with tea the same.

Q: Are you low following exercise/activity?

Yes: Consider having extra carbohydrates before, during or after. This could be either as a sports drink or eaten as light snack.

Alternatively consider giving less insulin with your meal if exercise is within 2 hours.

No or not sure:

Discuss with your diabetes nurse or dietitian for further advice.

Q: Have you given a correction dose within the last 2 hours?

Yes: Consider adjusting your correction dose to give less insulin. If you are unsure how to do this discuss with diabetes nurse.

No or not sure:

Ring to discuss

If low before meals or at several times during the day discuss with team as basal insulin may need to be reduced

What to do if you have forgotten to take your long acting insulin

Q: Do you normally take your long acting insulin at night?

Yes: Take usual dose as soon as you remember. Check blood glucose more frequently and if more than 10mmol/l correct at meal times with fast acting insulin. The following day adjust timing by 2 hours each day to get back on track.

No: See next question.

Q: Do you normally have your long acting insulin in the morning?

Yes: If you remember your missed dose before mid-day take your normal dose immediately.

Yes: If you remember your missed dose after mid-day, Take your usual dose straight away. Test your blood glucose levels more frequently. Correct at meal times with fast acting insulin. The following day give your normal dose 2 hours earlier each day until you get back on track.

What to do if you have forgotten to take your rapid acting insulin

Q: Is it within 30 mins of eating?

Yes: Give fast acting insulin for carbohydrates eaten.

No or not sure:

Check your blood glucose levels 1 hourly for the next 4 hours and give extra food containing carbohydrates (without insulin). Treat hypoglycaemia with fast acting glucose. Call the diabetes team for further advice.

What to do if you have given the wrong insulin

Q: Have you given rapid acting Insulin instead of long acting Insulin?

Yes: Check your blood glucose levels 1 hourly for the next 4 hours and give extra food containing carbohydrates (without insulin). Treat hypoglycaemia with fast acting glucose. Call the diabetes team for further advice.

Q: Have you given long acting Insulin instead of rapid acting Insulin?

Yes: Call the diabetes team for advice.
