

Setting your Basal Rates

The basal rate is the rate at which your insulin pump delivers background insulin automatically. It provides the basis for blood glucose stability and is the key to successful insulin pump therapy.

The first basal rate always starts at midnight. Other rates can be set depending on your insulin requirements. Each hour can be individualised and once set you should be able to omit meals and maintain your blood glucose targets.

Adjustment of Basal rates

For the best blood glucose control you have to have the right basal rate at all times.

We set the pump up with 6 basal rate segments of four hours – midnight to 4am, 4-8am, 8am-12pm, 12-4pm, 4-8pm and 8pm to midnight. This allows us to adjust the basal rate at 6 opportunities throughout the day and allows you to have a basal rate tailored to your requirements.

Once your basal rates are correct you will experience:

- Blood glucose levels are within target throughout the day.
- Flexibility – for example you can delay or skip meals without fear of hypoglycaemia.
- Better control – lower HbA1c levels.

Signs that your basal rate is too high

- You go low a lot (blood glucose levels below 4 mmols/L) especially if you skip a meal or overnight.

Signs that your basal rate is too low:

- You have lots of high blood glucose levels (blood glucose levels above 10 mmols/L) especially when you have a long gap between meals as in the middle of the night.
- You have to give a lot of correction boluses to correct high blood glucose levels.

You can check your basal rate:

- If any of the problems occur as listed above.
- If your HbA1c is rising.
- If your lifestyle changes and you are unhappy with your blood glucose levels

How to check your overnight basal rate:

- Eat a light meal no later than 8pm and check your basal rate from midnight to 4am initially. Do not take a bedtime snack or take bolus insulin for a correction. Check and record your midnight blood glucose and then again at 2am and 4am.
- If you wish to check the 4am to 8am rate at the same time then also check and record at 6am and 8am. You can then eat breakfast.

How to check your daytime basal rate:

- The check must start at least four hours after the last meal and bolus insulin.
- Check one time block at a time
- Miss the next meal (*breakfast, lunch or tea*) and do not bolus insulin.
- Check and record your blood glucose at least every two hours until next meal.
- Stop the check if your blood glucose drops below *4mmol/L* or rises above *14 m.mols/L*.

Adjustment of insulin:

- When the check is complete, decide whether the basal rate needs adjusting.
- If your blood glucose has stayed within the target range then the basal rate for that period does not need adjusting. As a general principle your blood glucose should not vary more than 2 mmols/L during the checking period.
- If your blood glucose goes over the target range then the basal rate will need to be increased.
- Increase the insulin rate on your pump for the time block during which your blood glucose rises (*e.g. if the blood glucose reading at 6pm increases, then the basal rate will need to be increased between 4-8pm*). Increase the rate by a small amount initially, it is unusual to increase it by more than 0.1 units per hour.
- If your blood glucose falls more than 2mmols/L then you may need to reduce the basal rate
- If your basal rate has been adjusted then it is important to recheck it within the next few days.
- Download your new rates onto Carelink or Diasend or write down the new basal rate on the chart provided and date it in case your pump fails. This provides a record if the pump has to be reprogrammed.

Do not hesitate to seek advice from your diabetes team if you are uncertain about what to do.

Other things to consider:

When your insulin pump settings are being determined it is important that you **do not** perform any unusual or strenuous activity unless it is an activity that you undertake every day.

What happens if my weekday activities are different from my weekend activities?

Insulin pumps have a feature that allows you to set different basal patterns to meet your individual daily, weekly or monthly needs. Your diabetes team will give you advice regarding how and when to do use this