

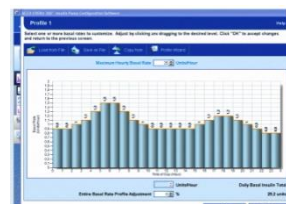


PATIENT INFORMATION

Torbay Children's Diabetes Service

Insulin Pump - Basal Rate Testing

Time of Day	Basal Level (units/hr)
12 AM – 5 AM	0.70
5 AM – 8 AM	0.90
8 AM – 1 PM	0.60
1 PM – 10 PM	0.50
10 PM – 12 AM	0.60



Why do basal rate testing?

It is normal for blood glucose levels to fluctuate but, when using an insulin pump, basal rates and bolus settings can be adjusted to minimize the fluctuations as much as possible. Basal rate testing is designed to help you check how well your background or basal insulin is working. It is quite hard work to do this; however, we believe that it provides real benefits and recommended that this is done once every 6 months or as required.

If your background or basal insulin is working effectively, your blood glucose levels should remain stable and in target range during periods of time when you are not eating, such as overnight, or when you miss a meal. If they are not stable during these times we can help you to make appropriate adjustments.

When to do basal rate testing:

It is useful to check basal rates at all times of day but NOT ALL ON THE SAME DAY!!!

It is important to check the overnight basal rates regularly, and then it is helpful to test out other times of day that are a proving difficult to manage in order to establish what settings need to change.

It is best to choose days that are “normal days” i.e. not days when there has been more activity or exercise than usual or parties or social events.

Golden rules of basal rate testing:

During the testing period:

- Only miss one meal and snack in any day
- You will be missing meals. If you find it too difficult to miss meals completely, you can have carbohydrate-free meals such as plain meat, fish or eggs with green vegetables or salad. Avoid fish or meat with pastry or breadcrumbs/batter DO NOT eat any carbohydrate during the testing periods.
- You can drink as much as you like but ALL DRINKS MUST BE SUGAR FREE
- The test days should NOT be consecutive – perhaps alternate days, only at weekends or stagger them over a week.

NOTE: If blood glucose drops to below 4 mmols/l during and testing period you need to stop and treat the low blood glucose. Abandon the test for that day.

Each time you check a blood glucose level:

If the blood glucose is above target and below 14 mmol/l

→ do not correct that blood glucose and continue with the basal rate testing-this will allow you to see how the basal insulin changes that blood glucose level over the next few hours.

If the blood glucose is above 14 mmol/l

→ check for ketones – and if they are less than 0.5 mmol/l take no action and continue with the basal rate testing.

If the blood glucose is above 14 mmol/l

→ check for ketones - and if they are more than 0.5 mmol/l correct the blood glucose level and treat according to pump sick day rules and abandon the test.

If the blood glucose level is less than 4.0 mmol/l

→ treat the hypo in the usual way and abandon the test.

What to do with the results:

At the end of a period of fasting (end of the testing period):

- If the blood glucose level is 7mmols or higher at the end of a period of fasting, the basal rate before this time will need to be need increased.
- If the blood glucose level is 3.9mmol/l or lower at the end of a period of fasting, basal rates before this time need decreasing.

Change the hourly rates for **2 to 3 hours prior** to the hour during which the blood glucose level is either too high or too low.

During Fasting:

- If blood glucose level over 3 – 4 hour period rises by 2.0 mmols or less – no change required
- If blood glucose level over 3 – 4 hour period rises by 3.0 mmols or more basal rate needs increasing.
- If blood glucose level over 3 – 4 hour period lowers by 2.0 mmols or more basal rate needs decreasing

How much to change a basal rate by:

If your hourly basal rate is **less than 0.8 units per hour**, when making a change, adjust by 10%

e.g.: Basal rate of 0.44 units per hour

- For rising blood glucose levels - increase by 0.04 so ends up 0.48 units per hour
- For lowering blood glucose levels – decrease by 0.04 so ends up 0.4 units per hour

If your hourly basal rate is **more than 0.8 units per hour**, when making a change increase or decrease by 0.1 unit per hour

If your hourly basal rate is **more than 1.5 units per hour**, when making a change increase or decrease by 0.2 units per hour

Need help?

Contact the diabetes team for advice on any changes required. Either call or email your diabetes nurse or, if you have done basal rate testing just before your clinic appointment, please bring the record of the results with you.

Overnight Basal rate testing

- Do not eat after 8pm
- Record time of last meal/snack and any exercise done during the day especially in the evening.
- Always test and record blood glucose level at 8pm and then record glucose levels at the times of the asterisks on the chart below.

Date	Time of last food		Pre bed or 8pm	Mid-night	1am	2am	3am	4am	5am	6am	7am	8am
				No food after 8pm.								
		BGL	*	*		*		*		*		*
		BGL	*		*		*		*		*	

Morning Basal Rate testing

- Do not eat breakfast or have a carbohydrate free breakfast only
- Record time of last meal/snack –or any breakfast eaten
- Record any exercise or activity done during the morning
- Always test and record blood glucose level at 7am and then record glucose levels at the times of the asterisks on the chart below.

Date	Time of last food		7am	8am	9am	10am	11am	12 noon	1pm
			No breakfast or carbohydrate free breakfast only						
		BGL	*	*		*		*	
		BGL	*		*		*		*

Afternoon Basal Rate testing

- Have breakfast at or before 8am so there are 4 hours after this meal before the testing begins
- Do not eat lunch or have a carbohydrate free lunch only
- Record any exercise or activity done during the morning (before the testing) and/or in the afternoon during testing
- Record time lunch eaten or if meal missed altogether
- Always test and record blood glucose level at 12 noon and then record glucose levels at the times of the asterisks on the chart below.

Date	Time of last food		12 noon	1pm	2pm	3pm	4pm	5pm	6pm
			No lunch or carbohydrate free lunch only and no afternoon snack						
		BGL	*	*		*		*	
		BGL	*		*		*		*

Evening Basal Rate testing

- Have lunch at or before 1pm so there are 4 hours after this meal before the testing begins
- Do not eat an evening meal or have a carbohydrate free meal only
- Record any exercise or activity done during the day (before the testing) and/or in the evening during testing
- Record time any meal is eaten or if the meal is missed altogether
- Always test and record blood glucose level at 5pm and then record glucose levels at the times of the asterisks on the chart below.

Date	Time of last food		5pm	6pm	7pm	8pm	9pm	10pm
			No evening meal or carbohydrate free meal only. No evening snack before 10pm.					
		BGL	*	*		*		*
		BGL	*		*		*	

BGL = Blood glucose level

Produced by Torbay Paediatric Diabetes Team

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This leaflet is also available electronically in large print or PDF format, please e-mail: sdhct.childrensdiabetestorbay@nhs.net