

Children and Young People's Diabetes Service
Insulin pump therapy information
How to check a basal rate

Introduction

Basal insulin controls blood glucose levels overnight and between meals. The goal is to set basal rates that will help keep blood glucose stable without the need for extra food or insulin. Every so often basal insulin will need to be fine-tuned to obtain or to keep good blood glucose control. To check basal rates blood glucose levels must be measured frequently while excluding other things that may affect blood glucose results.

General Guidelines for checking Basal Rates

- Divide the day into 4 time frames and check one at a time on different days: overnight, breakfast, lunch, and dinner. Begin with the overnight basal rate test.
- During the day of a basal rate test avoid exercise.
- The meal, before the basal rate test should be one for which the food bolus can be easily and accurately determined. Choose low-fat carbohydrate foods that you can carbohydrate count accurately for this meal. Always bolus 15-30minutes before eating and use a normal bolus.
- Eat no food during the basal rate test.
- Basal rate tests can start 4-5 hours after the last bolus dose was taken.
- Blood glucose should be between 5-8 mmol/l at the start of the basal rate test.
- Stop the test if the blood glucose levels go above or below your target range. Treat any low or high blood glucose levels as usual.
- During a basal rate test, blood glucose levels should be checked every 2 hours. For the overnight time tests, blood glucose should be checked before bedtime, midnight, 2-3am and on waking.
- Do not plan a basal rate test during illness, unusual stress, or after a severe low blood glucose level (hypo below 3mmol/L).
- Keep detailed records so the diabetes team can help you to evaluate the information and assess your basal rates if needed.
- Basal rates are correct if blood glucose does not increase or decrease more than 1.5-2.0 mmol/l during the test.

Time Frames and Directions	When to Test Glucose	Evaluating Your Results
Overnight <ol style="list-style-type: none"> 1. Eat an early evening meal, Don't forget your meal bolus 2. No food afterwards 3. Begin test at bedtime if BG is between 5-8 mmol/l 	2 and 4 hours after dinner bolus Bedtime Midnight 2-3 am Upon waking	If blood glucose increases: Your basal rate needs to be increased for this time frame. If BG decreases: your basal rate needs to be decreased for this time frame.
Breakfast-time <ol style="list-style-type: none"> 1. Skip breakfast 2. No food until lunch 3. Begin test if BG is between 5-8mmol/l 	Every 1-2 hours upon waking until lunch	If blood glucose increases: Your basal rate needs to be increased for this time frame. If BG decreases: your basal rate needs to be decreased for this time frame.
Lunch-time <ol style="list-style-type: none"> 1. Skip lunch 2. No food until evening meal 3. Begin test if BG is between 5-8mmol/l 	4 hours after breakfast Every 1-2 hours until evening meal	If blood glucose increases: Your basal rate needs to be increased for this time frame. If BG decreases: your basal rate needs to be decreased for this time frame.
Evening Meal <ol style="list-style-type: none"> 1. Skip evening meal 2. Begin test if BG is between 5-8mmol/l 3. Have a bedtime snack, and end the test then if desired 	4 hours after lunch Every 1-2 hours until bedtime	If blood glucose increases: Your basal rate needs to be increased for this time frame. If BG decreases: your basal rate needs to be decreased for this time frame.

If you need to increase or decrease your basal rates, make the change from 2 hours before the start of the test period. For example, if your blood glucose increases between 7am and 11am, you would increase the basal rate between 5am and 11am.

Basal rates can be changed by 10%, for example if your rate is 0.2units/hour it would change to 0.22units/hour

Try and repeat the basal rate test a few days after making changes. If you need help adjusting your basal rate contact a member of the diabetes team either by phoning in the day between 9am and 5pm or email us diabetes@alderhey.nhs.uk

This information sheet has been written by

The Diabetes Team
 Alder Hey
 Eaton Road
 Liverpool
 L12 2AP
 0151 228 4811

www.alderhey.nhs.uk

This information can be made available in other languages/formats on request.