

- The following adjustments are a guide:
  - ⇒ If total daily insulin (basal & bolus) is less 10 units = 0.025 unit/hr adjustment.
  - ⇒ If total daily insulin (basal & bolus) is between 10 and 20 units = 0.05 unit/hr adjustment.
  - ⇒ If total daily insulin (basal & bolus) is over 20 units = 0.1 unit/hr adjustment.
- Review in the next week to make sure the changes are working. When the improvement is stable, return to monthly basal check.

#### Making changes to insulin to carbohydrate ratios (ICR):

- Pre-meal target is 4-7mmol.
- If blood glucose level drops below target, change the ICR e.g. originally 1unit:10g carbohydrate, change to 1unit:11g carbohydrate.
- If blood glucose level rises above target, change the ICR e.g. 1unit:10g carbohydrate, change to 1unit:9g carbohydrate.

#### Contact details for more information

##### Monday to Friday 9am-5pm

- Diabetes doctors can be reached via the paediatric secretaries on **01952 641222**, ext. **5980** or **5981**
- Diabetes nurses on **01743 450855 option 2**, text via **ChatHealth 07312 263102** or email **Shropcom.pdsn@nhs.net**
- Diabetes Dietician on **01952 641222** extension **4874**

##### In an emergency/out of hours

In an emergency during working hours when you cannot reach one of the team above or for out of hours support i.e. after 5pm or at weekends.

All patients requiring advice should contact the Princess Royal Hospital switchboard on **01952 641222** and ask to speak to the paediatric registrar for diabetes advice.

# Managing Type 1 Diabetes

## Basal rate testing



## Testing basal rates and insulin to carbohydrate ratios on an insulin pump

Just like other medications you are likely to need more insulin as you grow and develop. As our bodies change we need different amounts of insulin during the day. We will tell you if you need to carry out basal (background) rates and insulin to carbohydrate ratios (ICR) testing and help you with a plan on how to do it.

One way to test which insulin needs to be changed involves fasting or, if this is not possible, eating carbohydrate free food. If the basal rate is correct the levels should stay within target (4-7mmol/l), suggesting that the ICR needs changing, if the basal needs changing the level will rise or fall.

Do not try to do the whole day at once, break the day into blocks of time such as overnight, breakfast, lunch, afternoon and evening. Start with overnight if you are doing a complete review.

### Do not start this testing if:

- Your glucose level is above 14mmol/l
- Your glucose level is below 4mmol/l
- You've had a hypo in the last 8 hours
- You're unwell
- You've taken part in strenuous exercise

### How to test basal rates:

- Wait 2 hours from your last meal before starting the basal rate testing. Consider the last food you eat before starting testing, avoiding meals such as pizza and pasta which effect glucose levels for a longer period of time and use a normal bolus delivery of insulin for this meal.
- Check glucose level every 1-2 hours
- Do not eat or drink any carbohydrate through this period. You can drink water and if you are very hungry you can have a small portion of carbohydrate free foods (see below)
- Please continue your usual daily routine and exercise throughout testing.

### Stop testing if:

- Blood glucose level drops below 4mmol/l and treat as usual
- Blood glucose level rises above 14mmol/l and treat as usual

### Carbohydrate free food options:

- Eggs- hard boiled, omelette, scrambled egg (do not add milk)
- Fish- mackerel, sardines, salmon, tuna, pilchards
- Cold meat- chicken drumsticks, slices of cold cooked meat (check there is no coating on the meat)
- Cheese- cheddar, edam

### How to test insulin carbohydrate ratios (ICR):

- Make sure the basal rates are accurate first.
- Do not test if you have done strenuous exercise in the last 24 hours.
- Do not test if you are unwell.
- Check blood glucose level before and 2 hours after the carbohydrate.
- Weigh the food to make sure you have accurately calculated the carbohydrate content.

### Making changes to basal rates:

- If you are unsure about what changes to make please speak to a member of the diabetes team.
- If the basal rate is correct, your glucose levels should stay within target (4-7mmol), If your glucose levels rise or fall, your basal rates need to be increased or decreased.
- To change the basal rate, look at the time when your glucose levels goes out of target, go back 2 hours and increase or decrease the basal rate at this point.
- Make changes in steps of 10-20% e.g. if basal rate is 0.250units/hr with a 10% increase, change to 0.275units/hr or 20% to 0.300units/hr.