Who is the leaflet for? What is its aim?
This leaflet is for young people who are on insulin injections or insulin pump therapy. The aim is to help develop the skills to adjust insulin doses safely and confidently.

When is dose adjustment necessary?
Ideally blood glucose levels (bgl) should be between 4mmols to 7mmols. There are however many factors which affect your blood glucose levels:

- Growth (puberty). As you approach and go through adolescence, the amount of insulin you require can go up significantly. There is nothing to worry about, this is normal.
- Changes to your routine: exercise and diet changes for example.
- For managing sick days.
- Travel – to a different time zone. Climate can affect blood glucose levels by making them go up or down.
- For managing times of stress/anxiety; exams for example.

For more information on any of the above, please see the relevant leaflets in this series or speak to your diabetes team for further advice.

Points to consider before dose adjusting

- Is it a one off high or low reading? If so, always identify patterns over a period of three days rather than making a change based on 1 reading.
- Are you testing two hours after a meal or snack? If not, it is not safe to make a change.
- Are you using a lumpy site? If so, it is not safe to make changes in your insulin doses as the insulin you are currently giving in the lumpy site is not being absorbed very well.
- Think about your injection and insulin pump technique and also look at your injection and cannula sites.

Remember! Always stop and think before adjusting a dose. And make sure you speak to your parents or diabetes team for guidance.

How to adjust insulin doses (Please see the table below)
Insulin dose adjustment

If your blood glucose levels are higher/lower than the target range before a meal, then you need to adjust the insulin dose that you took at the meal before. Unless you have had a big snack, in which case it will be the snack causing the high levels. For example, if your blood glucose levels are high before dinner, but you have not had any big snacks before this, then you need to adjust your lunch time insulin.

If you are on an insulin pump it may be useful for you to do some basal testing. This will help you decide as to whether you need to change your basal rates or your carbohydrate ratios.

Please speak to your diabetes team for further information on basal testing.

This table is an example of which insulin doses you may need to adjust according to your blood glucose levels:

<table>
<thead>
<tr>
<th>Blood Testing Time</th>
<th>Result less than 4mmol/L</th>
<th>Result between 4-7mmol/L</th>
<th>Result higher than 7mmol/L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before Breakfast</td>
<td>*Reduce long acting insulin before bed. E.g Lantus/Levemir Or if you are on an insulin pump you will need to review and reduce your basals overnight.</td>
<td>Cool!</td>
<td>Increase long acting insulin before bed. Or if you are on an insulin pump you will need to review and increase your basals overnight.</td>
</tr>
<tr>
<td>Before Lunch</td>
<td>Reduce rapid acting insulin before breakfast. E.g Novorapid/Humalog</td>
<td>Cool!</td>
<td>Increase rapid acting insulin before breakfast. E.g Novorapid/Humalog</td>
</tr>
<tr>
<td>Before Evening Meal</td>
<td>Reduce rapid acting insulin before lunch. E.g Novorapid/Humalog</td>
<td>Cool!</td>
<td>Increase rapid acting insulin before lunch. E.g Novorapid/Humalog</td>
</tr>
<tr>
<td>Before Bed</td>
<td>Reduce rapid acting insulin before evening meal. E.g Novorapid/Humalog</td>
<td>Cool!</td>
<td>Increase rapid acting insulin before evening meal. E.g Novorapid/Humalog</td>
</tr>
</tbody>
</table>
Remember! Before increasing your insulin doses overnight, always check your blood glucose levels are not dropping to less than 4mmols/L during the night around 2 or 3 am.

*If the long acting insulin is given before breakfast, look for patterns in blood glucose levels before bed.

Contacts/Further
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Out of hours: 01223 245151, ask for ‘child diabetes on rotawatch’.

We are now a smoke-free site: smoking will not be allowed anywhere on the hospital site. For advice and support in quitting, contact your GP or the free NHS stop smoking helpline on 0800 169 0 169.

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