

Children and Young People's Diabetes Service

Multiple Daily Injections (MDI / Insulin pens) High blood glucose levels with ketones

Information for patients, parents and carers

Introduction

High blood glucose levels with ketones need to be managed quickly to prevent Diabetic Ketoacidosis (DKA).

High blood glucose levels with ketones may occur for a number of reasons; these include being unwell and low insulin levels due to missing insulin.

When the blood glucose level is 14mmol/L or more, blood ketones must be checked.

Ketones are produced when there is not enough insulin in the body or due to lack of food. A high blood glucose level with ketones is a warning sign that there is not enough insulin in the body. If blood ketones are great than 0.6mmol/L extra insulin must be given.

Blood Ketone Guide		
Less than 0.6mmol/L	0.6 -1.5mmol/L	More than 1.5mmol/L
Give a normal correction dose	Increase correction dose by 50%	Double correction dose

Note: A single ketone correction dose should not normally be greater than 20% of your total daily dose of insulin (Up to a maximum of 20 units).

For example: If total daily dose is 50 units, each ketone correction should not normally be more than 10 units. If unsure please discuss with a member of the diabetes team.

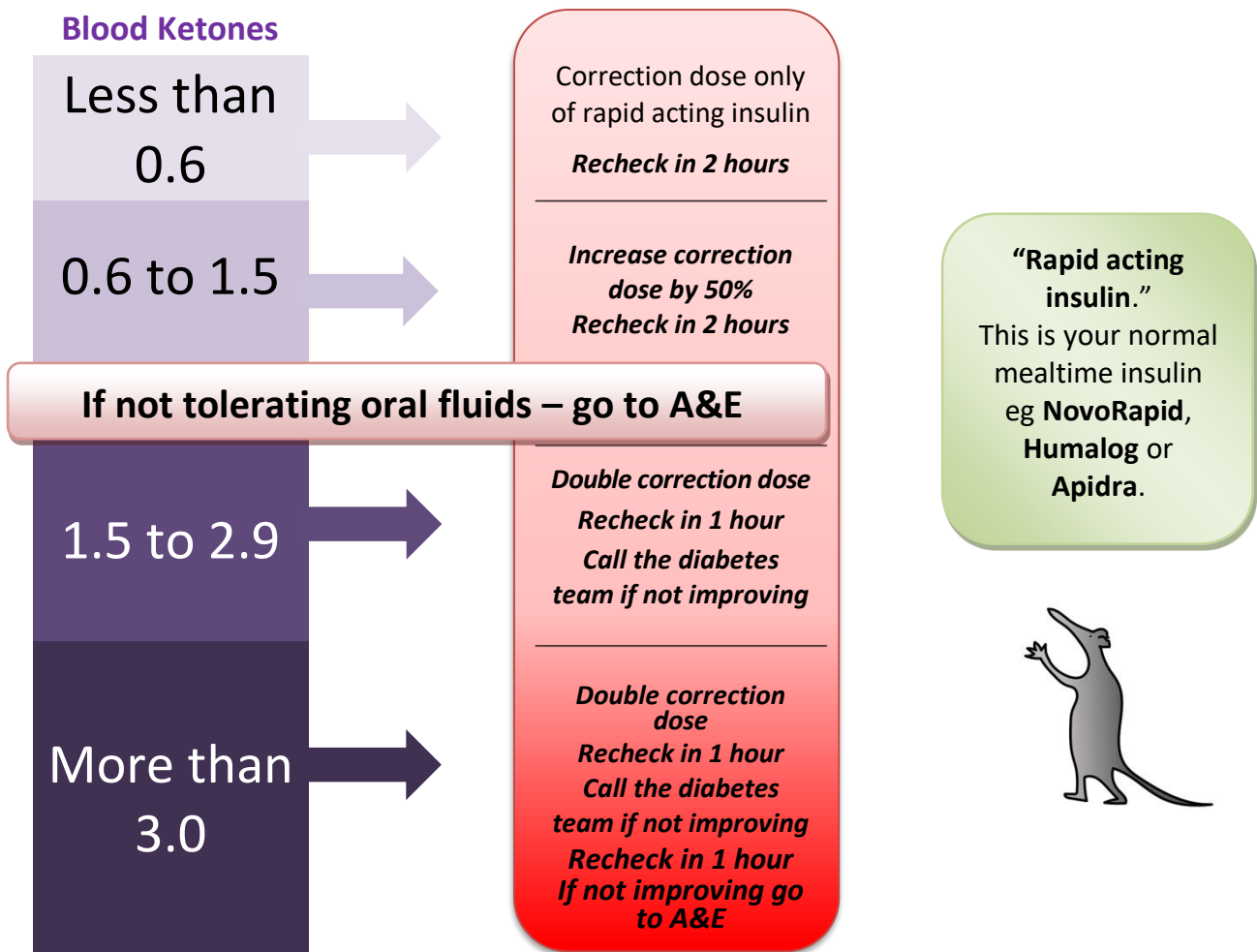
If the child / young person has high blood glucose levels with ketones and is vomiting, you must contact the Diabetes Team immediately

If the high blood glucose and ketones are caused by illness/sickness follow the 'rules' below':

- 1. Never stop the normal insulin**, even if you are eating less than normal. When you are ill the body needs insulin to use glucose and to get rid of ketones.
- 2. Drink lots of water, sugar free/no added sugar drinks or diet fluids** to wash the ketones away.
- 3. Keep eating carbohydrate foods.** When you are unwell you still need food for energy. It is important you get enough carbohydrate for the body to use for energy, to prevent starvation ketones. If you are unable to manage your usual meals and snacks you should replace these with sugar containing food and drink which is easy to consume, for example; flat Lucozade or other sparkling glucose drinks, ordinary cola or lemonade, sugar containing drinks e.g. Ribena, Sports Drinks, ordinary squash, soups, toast, ordinary jelly and ice cream.
- 4. Give extra fast acting insulin** to get rid of the ketones – follow the attached dosing guide.
- 5. Increase your long acting insulin** if the high blood glucose levels last for longer than 6-12 hours
- 6. You can give over the counter or prescribed medications as directed** for example Paracetamol and antibiotics



Managing High Blood Glucose with Ketones (MDI)



Who to contact for further help or advice

If you need urgent advice about diabetes management Monday – Friday 8am – 6pm, call 0151 252 5766. For out of hours advice call the hospital switchboard on 0151 228 4811 and ask for ‘Diabetes on call’.

For non-urgent advice contact your diabetes nurse on the usual numbers or email diabetes@alderhey.nhs.uk



Follow us on Twitter: @AlderHeyDiab

Website: <https://alderhey.nhs.uk/parents-and-patients/services/diabetes>

Meet the team, useful guidelines, research and publications, helpful advice and video guides.

Download the Digibete app, the video platform to share videos and educational resources about Type 1 Diabetes. The content is to support children, young people and their families to self manage their own diabetes by extending the reach of their clinical teams online using the clinic code - **AEBDR**

Apple



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This leaflet only gives general information. You must always discuss the individual treatment of your child with the appropriate member of staff. Do not rely on this leaflet alone for information about your child's treatment.

This information can be made available in other languages and formats if requested.

Alder Hey Children's NHS Foundation Trust
Alder Hey
Eaton Road
Liverpool
L12 2AP

Tel: 0151 228 4811
www.alderhey.nhs.uk

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