

Children and Young People's Diabetes Service Hypoglycaemia

Information for children & young people with type 1 diabetes, parents and carers using multiple daily injection therapy

Hypoglycaemia means a low blood glucose level. It is also called a hypo. A low blood glucose level or hypo means your blood glucose level is below 4mmol/L. Hypos can occur commonly, with time you will gain confidence in recognising and treating them.

What causes hypoglycaemia?

- Taking too much insulin
- Taking insulin at the wrong time
- Not eating enough carbohydrate food for example missing carbohydrate from a meal or snack or a late meal or snack
- Physical activity and exercise
- Hot or cold temperatures
- Stress or Illness
- Alcohol

Often it is possible to explain why a hypo has happened, but sometimes they may happen out of the blue. You need to be aware of your warning symptoms of a hypo if you don't notice any warning signs discuss this with the diabetes team.

A hypo may be **mild** and easily treated, **moderate** which needs some help or **severe**. A severe hypo usually needs treatment with glucagon, medical help or hospital.

Signs and Symptoms of a Hypo

Mild or early signs	Moderate	Severe
Pale Hunger Shaky Wobbly legs Sweating Tired or sleepy Headache Trembling Tingling Faint or dizzy	Blurred vision Aggressive Moody or irritable Slurred speech Confused Strange behaviour	Fainting Fitting Loss of consciousness

The symptoms of a hypo may be any one or a combination of the above. It is important to treat a hypo immediately. Untreated hypos can lead to loss of consciousness or fitting.

How much carbohydrate is needed to treat a hypo?

The amount of carbohydrate needed to treat a low blood glucose level is depends on your age and weight. The maximum treatment is 20g carbohydrate. Use the table below as guide to how much hypo treatment to use.

Age	Amount of carbohydrate	Examples
Under 5years	5g	1-2 glucose tablets (check the label), 60ml Lucozade, 1 jelly babies, 2 fruit pastilles, 100ml fruit juice
5-10 years	10g	3-4 glucose tablets (check the labels), 120ml Lucozade, 2-3 jelly babies, 4 fruit pastilles, 200ml fruit juice
10-17years	15g	4-5 glucose tablets (check the label), 180ml Lucozade, 4-5 jelly babies, 6 fruit pastilles, 300ml fruit juice

Chocolate is not recommended as a hypo treatment as it is broken down to glucose slowly. If fruit juice is used a double dose may be needed as the natural sugars are absorbed more slowly.

Long acting carbohydrate is not recommended in addition to fast acting rescue treatment. Sometimes a snack may be needed. No more than 20g of carbohydrate should be taken. Consider an extra snack if

- Hypo is just before or after exercise
- Too much insulin is the cause of the hypo
- Alcohol is the cause of the hypo
- If your child has had a hypo in the last 24hours or you are worried.

How to manage hypoglycaemia

How to treat a mild or moderate hypo

Step1 Check the blood glucose and give hypo treatment, if it is not possible to do a test go ahead and treat as a hypo.

Step2 Wait 10 – 15 minutes, recheck blood glucose level. If blood glucose level is below 5.6mmol/L repeat steps 1 and 2 until better

If blood glucose level is 5.6mmol/L or more no further action needed unless:

- You are about to do sport/physical activity – have an extra 15-20g carbohydrate snack before exercise.
- You are concerned about blood glucose dropping again because the hypo has been caused by too much insulin, alcohol or you have treated 2 or more hypos already.

How to treat a severe hypo

If the child is unconscious, having a fit or is unable to take anything by mouth follow the steps below:

Do not give anything by mouth – this can cause choking

- Place your child in the recovery position, away from danger
- Check the time
- Give the glucagon injection
- ½ dose for under 8 years (0.5mg)
- Full dose for over 8 years (1mg)
- Check the blood glucose

If you are not able to give the glucagon injection call 999 for an ambulance
Stay with the child, if there is no sign of recovery after 10 minutes or if they are not fully recovered after 30 minutes call 999 for an ambulance.

When fully awake follow steps 1 and 2 (on page 2)

A severe hypo can cause vomiting. If vomiting occurs after the fast acting carbohydrate is given, wait a few minutes and repeat the fast acting carbohydrate.

A severe hypo will leave you feeling tired and unwell. Before falling asleep some longer acting carbohydrate must be eaten to prevent the blood glucose falling again.

Check the blood glucose every ½ hour for 2 -3 hours after a severe hypo.

Night time hypos

Treat a night time hypo in the same way as you would in the day.

A child who has had a hypo at night may be agitated and call out as if they are having a bad dream. It is possible for a child/young person to sleep through a hypo. This is more common after exercise in the afternoon or evening, after a hypo in the day or when alcohol has been consumed.

A hypo at night may cause

- Frequent nightmares
- Feeling sick, with a headache in the morning
- Blood glucose of less than 4mmol/l before breakfast
- Blood glucose above 14mmol/L in the morning.
- No symptoms at all

If you suspect a night hypo you should check blood glucose levels between midnight and 3am. If you find night time hypos are happening discuss this with the diabetes team.

Preventing and treating Hypoglycaemia Checklist

- Everyone who looks after a child with diabetes needs to be able to recognise and treat a hypo
- Always carry some hypo treatment for example *Lucozade Energy* drink or glucose tablets
- Hypos can happen quickly at any time, treat them quickly
- If possible check the blood glucose before treating the hypo
- Think about why the hypo might have happened
- If you use *Glucagon* or *Glucagel*, always make sure you replace it.
- Check that your Glucagon and Glucagel are in date
- Always carry or wear some diabetes identity
- Calculate your carbohydrate and insulin doses as carefully as possible
- Use different ICRs (insulin to carb ratios) at different times of day if needed
- Check your ICR if hypos happen within 4 hours of a meal injection
- Avoid injecting after meals.
- Use correction doses carefully, use a bolus advisor or calculator whenever possible and remember that fast acting insulin works for 3-5hours in the body.
- Treat any high blood glucose levels after hypos with caution. A high blood glucose level 2-4hours after a hypo may not need a correction dose.
- Adjust your insulin doses for planned exercise.
- Never give insulin for alcohol unless you know how it affects the blood glucose levels

Who to contact for further help or advice

If you are concerned about hypos, especially after a night time or severe hypo contact the diabetes team for advice or support as needed.

You do not have to rely on this leaflet alone for information about your child's treatment. If you require any further information please telephone 0151 228 4811 and ask for your Diabetes Nurse Specialist or Diabetes Dietitian.

You can also email the diabetes team diabetes@alderhey.nhs.uk

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

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