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Training booklet for understanding

Hypoglycaemia - **LOW** Blood glucose levels

Hyperglycaemia - **HIGH** Blood glucose levels

Integrated Community Diabetes Services

If you require this information in a different format such as in large print or on audio tape, or in a different language please contact the service on the details above.

If you have any compliments about this service or suggestions for improvements, contact our Patient Advice and Liaison Service on 0300 131 1000 (charges may apply depending on your network) or email: ccs-tr.pals@nhs.net.

For free, confidential health advice and information 24 hours a day, 365 days a year please contact NHS 111.



Do you have Diabetes treated with tablets and or insulin?

Do you ever have any of the following symptoms?

- Weakness, trembling or shaking
- Sweating
- Light headedness
- Headache
- Dizziness
- Lack of concentration/behaviour change
- Tearful/crying
- Irritability
- Hunger
- Numbness around the lips and fingers



You may be having a *hypoglycaemic* attack—read on

Summary

Hypos

- Always treat with fast acting glucose if blood glucose level below 4
- When blood glucose level is above 4 eat meal if due or starchy carbohydrate snack e.g. banana or slice of bread
- Think about what was the cause of your hypo

Hypers

- Review how and when you are taking your medication
- Review your diet, are you eating sugary foods and/or drinks?
- Are you exercising regularly

If you have any concerns about your diabetes management speak to your diabetes doctor or nurse.

Useful information:

Diabetes UK

<https://www.diabetes.org.uk/>

Telephone: Tel: 0345 123 2399

NHS Choices

<http://www.nhs.uk/Conditions/Diabetes-type2/Pages/Introduction.aspx>

Common causes of *hypers*

<p>Illness and infection If your glucose level is high for a short time, emergency treatment won't be necessary. But if it stays high you need to take action.</p>	<ul style="list-style-type: none"> • Drink plenty of sugar-free fluid • If you are on insulin, you may need to take extra insulin. • If you are feeling unwell, especially if you are vomiting, you must contact your diabetes healthcare team for advice. • Test your blood glucose level eat regular intervals.
<p>Stress When stressed our bodies release hormones which can affect how we can use insulin to reduce blood glucose levels.</p>	
<p>Missed Medication Will increase your risk of having <i>hypers</i>.</p>	
<p>Steroids If starting steroid treatment your medication will need reviewing and sometimes you will need to start insulin or your insulin will need reviewing.</p>	
<p>Food and Drink Choices Eating more carbohydrates than your body needs causes high blood glucose levels and excess storage of fat.</p>	

Understanding Hypoglycaemia - **LOW** Blood glucose levels

Hypoglycaemia means **low** blood glucose and is commonly called a *hypo*. It occurs when there is not enough glucose in the blood stream.

Generally a blood glucose level of 4 mmol/l is defined as the onset of a *hypo*. The motto often used is “**4 is the Floor**”. Basically this means, if your blood glucose level is below 4 and you do not treat it you could end up on the floor.

Maintaining your blood glucose no lower than 4mmols/l allows time for you to recognise any symptoms and take the necessary action.

BEWARE

A *hypo* during the previous 24 hours may increase the risk of further *hypos*. *Hypos* can lead to unpredictable blood glucose readings over the next 24 hour. As your body deals with your hypo, other hormones are released; this response may affect how your body reacts to future *hypos*.

Self-treated hypos

You can usually treat the hypo yourself, however if symptoms are severe, you may require help from others.

Remember ‘4 is the floor’



How do I know if my blood glucose level is below 4?

You may experience some symptoms described earlier, however the best way to know if you are having a *hypo* is to test your blood glucose level with a blood glucose meter.



Before testing your blood

To ensure your result is accurate, wash your hands, with soap and water, dry (do not apply hand cream), use a new finger pricking lancet and check that your test strips are in date.

Treating a hypo:

If your blood glucose level is below 4 mmol/l, treat your *hypo* with fast acting glucose. See treatment suggestions on the next page. You can use any one of these treatments



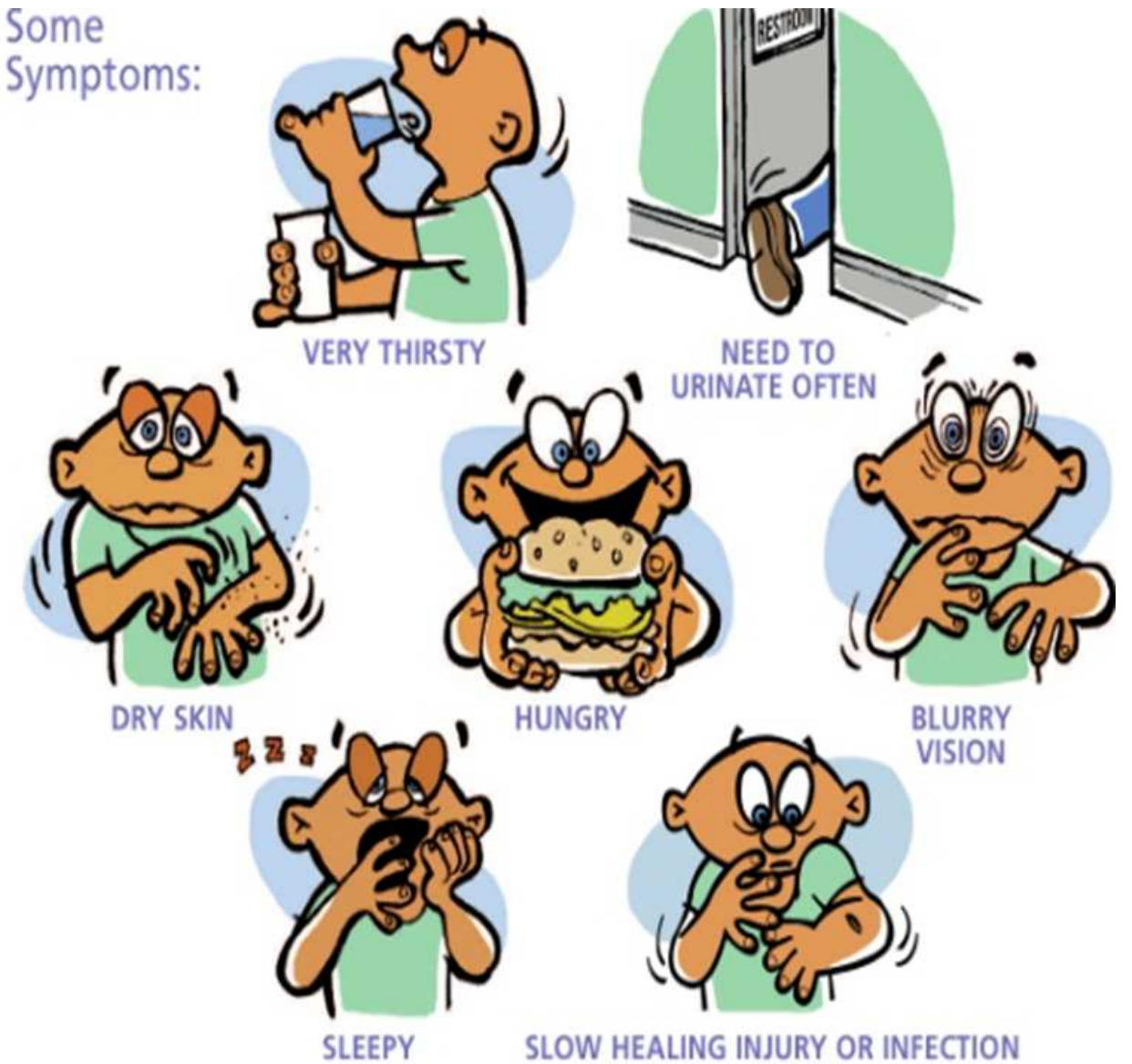
Warning

Don't treat your *hypo* with foods that are high in fat, such as chocolate and biscuits, because the fat will delay the absorption of glucose and will not treat the *hypo* quickly enough.

Symptoms of high blood glucose levels *hypers* may include:

- Passing lots of urine
- Thirst
- Weakness
- Tiredness
- Blurred vision
- Abdominal pain
- Leg cramps
- Nausea and vomiting

Some Symptoms:



Understanding Hyperglycaemia - HIGH Blood glucose levels

Hyperglycaemia means **HIGH** blood glucose and is commonly called a **hyper**. It occurs when there is too much glucose in the bloodstream.

Generally a blood glucose level of 11 or above is defined as a **hyper**. When blood glucose levels are high for extended periods of time damage to internal organs starts.

Symptoms of high blood glucose levels may not develop until blood glucose levels are above 11.

Self-treating **hypers**

- Ensure you are taking all your medication as prescribed
- Review your diet, eat regular meals, do not miss meals. Are you eating sugar foods or drinking sugary drinks? If you are STOP.
- Are you taking regular exercise? Keeping physically active will help to lower your blood glucose levels.

All of the above can help reduce **hypers**.

Your goal is to maintain normal blood glucose levels



Treating a **hypo**

Glucose/dextrose tablets		4 or 5 tablets
High glucose drink e.g. Lucozade Sport™		100mls
Cola-type fizzy drink (<u>Not</u> sugar free)		150mls
Jelly babies		5 Jelly babies
Jelly beans		7 Jelly beans
Fruit pastilles		4 pastilles

What is your preferred option for **hypo** treatment?

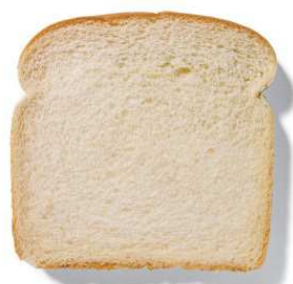
What shall I do next?

After 5 or 10 minutes retest your blood glucose level, if it is still below 4 repeat treatment.

If your blood glucose level is above 4 and your meal is due eat this, if not have a starchy snack. For example:



A banana



A slice of bread or toast

If your medication is due take it after you have eaten.

Help from Others

Any of the above treatments can be given if you are able to swallow.

Moderate and Severe Symptoms

Moderate hypos often require the help of others and severe symptoms may mean a hospital admission.

These symptoms are caused by a lack of glucose supply to the brain, and are responsible for changes in behaviour and eventually unconsciousness if not treated.

Causes

Now you know how to recognise and treat your *hypo* it is important to understand what caused it to try to prevent it happening again. See common causes on next page.



Next we will look at **HIGH** blood glucose levels, symptoms and treatment.




Normal blood glucose ranges for people with diabetes are:

Before food between 4 and 7mmol/L

Two hours after food between 5 and 9mmol/L

However, targets should be set individually as some people will need slightly higher targets. For example the elderly.

Common causes of hypos	
<p>When was the last time I had a low blood glucose level below 4mmol/L? Frequent hypos or not treating correctly can cause further hypos.</p>	
<p>Missed or delayed meals? For good diabetes control your medication is matched to your eating pattern, if this changes you may be at risk of hypos.</p>	
<p>Unwell? When unwell blood glucose levels often rise, but you could have a hypo if not eating as usual?</p>	
<p>Too much diabetic medication? Your requirements for medication may change, if you are having frequent hypos, always discuss with your diabetes specialist.</p>	
<p>Gliclazide, did I take this before my food? To avoid hypos, it is important to take your medication at the correct time. This is usually before food.</p>	
<p>Metformin, did I take this with or after my meal? Although if taken by itself Metformin is unlikely to cause a hypos, it can in combination with other medication.</p>	
<p>Insulin, what dose did I give and was this given at the correct time? Not taking the correct dose at the correct time can increase your risk of having a hypo.</p>	
<p>More physical activity than planned? It is important to have regular physical activity and sometimes on days of high activity you may be advised to reduce your diabetic medication to avoid hypos. If your exercise is unplanned you may need to have a snack to avoid having a hypo. Speak to your diabetes specialist.</p>	