Feeling sick?

What to do

Information for people with Type 1 Diabetes

Established 1981

Diabetes and sick days

A minor illness can result in a major rise in blood glucose levels

Common illnesses such as tonsillitis, ear, chest or urinary tract infections, and viruses can place extra stress on your body. This will increase the amount of insulin you need to keep blood sugar levels under control.

It can be difficult to predict how an illness will affect you so you need to test your blood sugar levels frequently. Sometimes you can feel terrible but blood sugar levels don't change much. At other times minor illnesses can put a lot of stress on the body, increasing the need for insulin and sending blood glucose levels soaring.

If blood sugar levels remain high for several hours the body will start to produce ketones. Ketones are toxic and if they build-up to moderate or high levels, a life threatening condition called diabetic ketoacidosis can develop.

Ketoacidosis requires hospital care

Most of the 3,500 per year admissions to hospital for ketoacidosis are avoidable if managed early. Careful monitoring of blood glucose and ketone levels and adjusting your insulin dose accordingly should keep you out of hospital.

It's important for you to understand how to manage high blood glucose levels, especially if ketones are present. To avoid hospitalisation follow the 6 steps in the 'What to Do' section of this guide.

Be prepared before you get sick

1. Discuss what to do when sick with your diabetes team. Take the action plan on page 5 of this guide to your next appointment
2. Prepare a sick day management kit (See page 8)
3. Discuss the potential for needing extra help and support when you're sick with family and friends
4. Try to stay healthy with diet and exercise and consider preventative actions such as having a yearly flu injection.

What to Do - 6 Key Steps

1. Start following your sick day - action plan immediately if:

- You feel unwell or have any signs of illness even if your blood glucose is normal
- There are ketones in your urine or blood
- Your blood glucose is greater than 15mmol/L for 6hrs or more, even if you are feeling OK.

You may have reasons for implementing the guidelines earlier, such as how your body reacts to infections or how tightly controlled your blood glucose levels are. You should discuss this with your medical team.

2. Glucose and ketone levels - need frequent monitoring

Frequent checking of blood glucose and ketone levels is the only way to monitor the effect of illness on diabetes.

Ketone levels are tested with urine testing strips. Some blood glucose meters can also test blood ketone levels.

The 'quick guide for sick days' (see page 6) is a guide to how often you need to check glucose and ketone levels.

3. Insulin dose - will probably need to be increased

Your body usually needs extra insulin when you are unwell even if you are eating little or are vomiting and have diarrhoea.

How much extra insulin - depends on your blood glucose and ketones level (test frequently). The 'quick guide for sick days' provides a guide to doses in different situations.

Extra insulin should be rapid or fast acting insulin and be in addition to your usual insulin dose. Don't wait until it is time for your regular insulin dose, give the extra insulin immediately.

Occasionally glucose levels can fall during illness and this may require a reduction in insulin dose.

4. Ask for help

Managing your blood glucose levels when you are feeling unwell can be difficult especially if it is the first time.

Phone your doctor or diabetes team early so that they can help you manage the situation and assess the underlying illness. They would much prefer to talk to you over the phone than have to treat you in hospital for ketoacidosis.

If you are not able to contact your medical team follow the 'quick guide for sick days' but if your ketone levels are moderate-large and do not decrease with your first extra insulin you should seek supervised medical care.

If you are not feeling well enough to be constantly testing your glucose and ketone levels, try to organise for someone to stay with you to provide support.

5. Keep drinking and eat if possible

Try to have half to one cup (125 - 250 mls) of fluid every hour to avoid dehydration.

If you can eat that will reduce the risk of hypoglycaemia and help maintain your energy requirements.

If you feel too unwell to eat, you should try to drink:

- Sweetened fluids if your blood glucose is less than 15 mmol/L
- Sugar free fluids if your blood glucose is more than 15 mmol/L.

6. Get yourself to a hospital or medical clinic if:

- Blood glucose - continues to rise despite 2 extra insulin doses or you are not able to give yourself extra short/rapid acting insulin
- Ketones - urine ketones are moderate to high or blood ketones are more than 1.5 mmol/L and not decreasing with extra insulin
- You are feeling drowsy, confused, having difficulty breathing or have severe abdominal pain
- Vomiting - is persistent especially if frequent for more than 2-4 hours
- Hypoglycaemia - is severe or blood glucose cannot be kept above 4mmol/L
- Too unwell - if you or support people are unable to carry out the monitoring required.

Women who are pregnant may need to be more cautious and seek medical advice with any signs of illness.

Sick day Action Plan	Date
Any special instruction for when to commence using guidelines.	
Details of who to contact.	
Action to take if unable to contact numbers above.	
Blood glucose level at which to start giving insulin.	
Amount of insulin for 5% of total daily dose.	
Blood glucose level and amount of insulin for 10% of total daily dose.	
Blood glucose level and amount of insulin for 15-20% of total daily dose.	
Any special instructions for use of glucagon.	
Any special instructions for when to seek medical care.	
Other.	

Quick guide for extra insulin on sick days

Important: If glucose continues to rise despite 2 extra supplements of insulin, seek supervised medical care.

Supplement doses of insulin are:

- in addition to the usual insulin dose
- Given straight away and not delayed until the next regular insulin dose is due
- Given as a percentage of the usual total daily dose i.e % of total of short and long acting for the day

If your blood or urine Ketone Level is:	And your Blood Glucose Level is:
	below 4 mmol/L
Urine - Negative/Trace Blood - < 1.0 mmol/L	• Increase blood glucose level with fluid and carbohydrate • If unable to eat take mini dose glucagon* • May need to reduce insulin dose • Hourly monitoring until glucose level normalised if unable to raise glucose level supervised medical care is needed
Urine - Small Blood - 1.0 - 1.4 mmol/L	• Increase blood glucose level with fluid and carbohydrate • If unable to eat take mini dose glucagon* • Hourly monitoring until glucose level and ketone level normalised if unable to raise glucose or ketones remain present supervised medical care is needed
Urine - Moderate/large Blood - ≥ 1.5 mmol/L	• Increase blood glucose level with fluid and carbohydrate • If unable to eat take mini dose glucagon* • Hourly monitoring until glucose level and ketone level normalised if unable to raise glucose or ketones remain present supervised medical care is needed

* Mini dose glucagon involves small doses of glucagon (the injections you use for severe hypoglycemia) but you will need to discuss this with your doctor.

Example of how to calculate extra insulin dose

1. Usual daily dose:	Morning	Lunch	Dinner	Bed
Fast acting	4 units	6 units	6 uints	
Intermediate/Long acting	12 units			12 units
2. Total daily dose: =	40 units			
3. 10% of daily dose: =	4 units			

	4 - 15 mmol/L	15-22 mmol/L	Over 22 mmol/L
	• No change to insulin, re-check blood glucose and ketones in two hours	• 5% extra insulin dose • Hourly monitoring	• 10% extra insulin dose • Hourly monitoring
	• No change to insulin, re-check blood glucose and ketones in two hours • If blood glucose below 8mmol increase carbohydrates first • If ketones and glucose persistently elevated, consider an extra 5% insulin dose	• 10% extra insulin dose • Hourly monitoring	• 15% extra insulin dose • Hourly monitoring
	• If blood glucose below 8mmol increase carbohydrates first • 5-10% extra insulin • Hourly monitoring • If ketones rising or remain large seek supervised medical care	• 15-20% extra insulin dose • Hourly monitoring • If ketones decreasing or remain moderate review in one hour, follow guidelines for further extra insulin • If ketones are increasing or remain large seek supervised medical care	• 20% extra insulin dose • Hourly monitoring • If ketones decreasing or remain moderate review in one hour, follow guidelines for further extra insulin • If ketones are increasing or remain large seek supervised medical care

Sick Day Management Kit

Every six months, check that your kit is fully-stocked with items that are within their expiry date.

- Copy of the sick day guidelines
- Short acting or rapid acting insulin
- Insulin syringes or insulin pen.
- Food for sick days and fluids (including sweetened and diet drinks)
- Glucose containing food or gel and glucagon (if recommended by your diabetes team).
- Pain relief such as paracetamol or ibuprofen

Monitoring equipment

- In date blood ketone testing strips or urine ketone testing strips
- Thermometer

For further copies of this sickday guide go to

www.adea.com.au

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