

## Educator's notes

### Blood glucose testing – finger-pricking, it's a pain! What's the point of it?

Good question. Why would anyone voluntarily prick their finger unless there were benefits for them in doing it? Some people might say it's to get their GP, endocrinologist or diabetes educator off their back, but that's not the most important reason to go to the trouble. The two most important reasons are you and your health. Without information about blood glucose levels, it's difficult to look after your diabetes and maintain good health.

The testing routine varies between people with type 1 and type 2 diabetes. It is particularly important for people with type 1 diabetes. This used to be called insulin dependant diabetes and is the type of diabetes where a person needs injections of insulin to stay alive. People with type 2 diabetes may be treated with insulin, and if they stop taking it they will become gradually sicker but they won't die within a few days.

#### Type 1 Diabetes

As a person with type 1 diabetes you are not making insulin. Every drop of the stuff in your body is injected into you. If you don't test your blood glucose level (BGL) frequently, you won't be able to inject the best amount to control your blood glucose. You will be at risk of having a hypo (hypoglycaemia – a blood glucose level of less than 3.5 mmol/L) or developing hyperglycaemia (BGL higher than 15.0mmol/L). You may even be at risk of ketoacidosis which is a seriously high blood glucose level and requires extra insulin, or even a trip to hospital to fix.

The stated minimum number of times to test when you have type 1 diabetes is before breakfast, lunch, dinner and bed. Each and every day! If you are a sports person, or into vigorous physical activity you will test before, during and after this activity. If you are a woman planning to become pregnant, or already pregnant, you will be expected to test after meals as well. If you use an insulin pump you should definitely test before meals so you can work out what bolus dose you will need to program considering your blood glucose level and the food you are about to eat. If you are sick, guess what! That's right – even more testing and regular ketone testing too!



It's unlikely that many people would do this amount of testing every day of their lives, but how much would you be prepared to do if you knew it was for your benefit? Do the readings show that you are regularly high or low at any particular time of day or night? Are they too high or too low if you have a certain meal or snack? Do they show the effects of exercise, stress or a lazy day? Are your levels pretty good or do they need a bit of work to tidy them up? Maybe your insulin is perfect at one time but needs adjustment at another time. If you don't feel confident to do this by yourself it may be time to talk to your GP, diabetes educator, dietitian, endocrinologist (your professional team) or someone else, such as a friend with type 1 diabetes who's been through this experience.

Your readings provide you and your professional diabetes support team the opportunity to use real information to provide you with a strong basis for determining the appropriate management of your diabetes. Your results should not be seen as a source of criticism of your diabetes management.

Most importantly the more you test your BGL, the more information you have about your blood glucose levels, and the better the chance you have of fixing any problem before it harms you.

#### Type 2 Diabetes

Type 2 diabetes is a little different to type 1 diabetes. You will always make some insulin of your own and often when first diagnosed you won't need to take a tablet. You will probably just make a few dietary changes and get some extra exercise. Type 2 diabetes which is treated this way probably doesn't need to be tested at home with a blood glucose monitor. This is because you will probably have a BGL in the normal range most of the time. Some health professionals believe that if a person starts testing early after diagnosis they will have such good readings that they think their BGL will stay as good as that forever. So they stop testing. Unfortunately diabetes is a progressive disease and the time will come when their BGL starts to rise. They won't know this is happening and not seek help until the symptoms of diabetes are making them feel ill and perhaps even harming them permanently.

So if you don't want to test your BGL at this stage, it is important to know what is happening to your BGL. The simplest way is to see your GP every three months for a glycated haemoglobin level (HbA1c). This will need some blood from your arm to go to a laboratory. The results will indicate what your average blood glucose level for the previous three months has been. If it's above 6.5 % your GP will probably ask you to check your diet and exercise routine and may start you on tablets. This is a good time to start testing your BGL



*Understanding BGL testing and its importance will give you peace of mind*

The times you are expected to do your BGLs when you have type 2 diabetes are before breakfast and two hours after meals. Sometimes it's hard to remember to test two hours after starting your meal so people tend to test only before meals. This is probably OK, but if you take insulin you may want to test after the meal to see if your BGL is being brought down by the insulin.

Some people only test before breakfast every day or before breakfast and two hours after dinner. While some testing is better than no testing, these methods of testing leave you with no idea of what is going on for long hours of every day.

OK. Think again about why you test your BGL and decide when it would be best for you to test. Here's some information about testing that might help you decide:

- A BG test before breakfast shows you how well controlled your blood glucose has been overnight,
- A test before meals shows whether or not your BGL is coming down between meals,
- A test two hours after a meal shows whether the meal was appropriate to eat or not, whether it contained enough carbohydrate or not, whether it was too big or not and can even tell you if your medication is working as expected,
- A test before or during vigorous exercise tells you if you need to have a sweet drink or a snack to prevent a hypo,
- A test before driving tells you if you will need a snack or piece of fruit before setting out and a test when stopped on the journey checks that you won't have a hypo,
- A test a couple of hours after exercise tells you if exercise is helping control your diabetes,
- A test when you are feeling ill tells you whether you need to see your doctor or not.

While HbA1cs (glycated haemoglobins) give you a very nice average, home BG testing informs you of what is going on in your body at the exact moment and whether or not you need to do something about it. Even when you are testing your BGL, the ideal method of checking how well you are is to also have HbA1c tests every 3 – 6 months. In this way you are watching your instant and long-term blood glucose control.

You may not want, or need to test every day. You may decide to test several times on one or two days per week, or once a day every day but at different times, or at specific times to find out specific information that you want, such as the effect of a meal or exercise. Whenever you test you build up your knowledge about how to deal with this constantly changing disease, so the more you do it the more confident you will become.

Rather than test at the times suggested by your GP, diabetes educator or endocrinologist, you can be a bit radical. Test at times that suit you, to enable you to know what is going on in your body. Record your readings in your BG record book and add some explanations so your health professional health partner can understand what the readings mean and why you have done this. If your HP partner is concerned about high blood glucose levels you will be in a great position to say that, thanks to targeted monitoring you are aware of this. You will be able to tell them that your diet is good and you don't over eat, that you get ample exercise but none of it is helping to lower your BGL to where you want it to be and you would like some practical help from them! If your levels are good, you will be able to say that it is because you do targeted testing and that has helped you manage your diabetes and your future health and happiness effectively! **D**

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