



## Self-test for blood glucose and urine ketones



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All information above has been reviewed by Metabolism specialists  
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## A. Blood glucose self-test






### ➤ Why do we need to test blood glucose by ourselves?

The blood glucose test may let you know whether your blood glucose is controlled within the normal range. Either your diet is insufficient, or over-exercise, or overdose of medications, you may feel general weakness, palpitation, or have cold sweating, at this time, 15 grams of sugary food should be taken immediately to increase your blood glucose. If you feel more severe thirsty, polyuria and fatigued than before, then you should check your blood glucose. The occurrence of high or low blood sugar indicates the need to redistribute the amount of food and exercise, you should ask your doctor whether to adjust the oral hypoglycemic agents or insulin dose. If the value of your blood glucose test always falls into normal range, it simply indicates that your blood glucose control is appropriate.



圖片來源：<https://www.careonline.com.tw/>

## ➤ How do I test my blood sugar?

Steps	Procedure
<p><b>1</b></p>	<p>Preparation of measurement tools :</p> <ul style="list-style-type: none"> <li>● Blood Glucose Machines</li> <li>● Glucose test strips (to check expiry date and for moisture)</li> <li>● Blood collection Pen</li> <li>● Blood collection Needle</li> <li>● Alcohol pad</li> <li>● Needle retriever</li> </ul> 
<p><b>2</b></p>	<p>Place the needle into the pen and adjust the scale on the pen according to the thickness of the skin (the larger the number the deeper the blood is taken).</p> 
<p><b>3</b></p>	<p>Place the pen against the blood collection site and press the pen button to collect blood.</p> 
<p><b>4</b></p>	<p>The blood is taken at a 45 degree angle to the blood collection site, the blood glucose value is read and pressure is applied with an alcohol swab to stop the bleeding.</p> 
<p><b>5</b></p>	<p>The needles are collected in a hard-shelled jar with a sealed lid and taken to the hospital needle collection area for disposal on return to the clinic.</p> 

➤ **What is the timing and frequency for blood glucose test?**

- ✓ If the blood glucose is stable, do the blood glucose test before breakfast and before bedtime at least once per week.
- ✓ If the blood glucose is not so stable, then it is necessary to conduct at least four times, i.e., before three meals and bedtime, per day.
- ✓ If consciously having sweating, hunger, dizziness and other uncomfortable symptoms, then it is necessary to conduct blood glucose immediately in order to verify high or low blood glucose levels.
- ✓ To conduct blood glucose test before breakfast, it is necessary to fast from midnight till the test time next morning. No food or beverage is allowed. A minimal amount of water is acceptable, if really thirsty.

➤ **What is the normal value for blood glucose?**

Blood glucose value Test time	Normal people	Diabetes patients
Fasting before meals	70-100 mg/dL	80-130 mg/dL
Two hours after meals	< 140 mg/dL	< 180 mg/dL
Before bedtime	<120 mg/dL	110-150 mg/dL

All these self-test results of blood glucose may serve as a reference for the doctors making treatments strategies (Treatment target should be tailored to the clinical condition of diabetes patients).

**B. Urine ketones self-test**

➤ **Why do we need to test urine ketones by ourselves?**





When insulin secretion deficiency leads to the failure of glucose

entering the cells to provide energy, and lipolysis to formation of ketone bodies, ketone bodies may appear in urine i.e. urine ketones. Urine ketones is a sign of poorly controlled diabetes.

### When to test urine ketones?

- ✓ Nausea and vomiting.
- ✓ Trauma, infections, surgical operation.
- ✓ Fasting blood glucose value in the morning above 250mg/dL or a random blood glucose value above 300mg/dL.

### ➤ How do I test urine ketones?

Steps	Procedure	
1	Urinate half an hour before the examination, then drink about 250ml of water and leave half a glass of urine in a urine cup after half an hour.	
2	Immerse the test strip into the urine for one second.	
3	When removing the test strip, run it along the edge of the container to remove any excess urine.	
4	Wait one minute to read the colour of the test paper.	

圖片來源:<https://is.gd/ALRjO1>

## **C. Conclusion**

Self-monitoring of blood glucose and urine ketones is an important tool for blood glucose control, as it allows for early detection and prevention of high and low blood glucose complications.

## **D. References**

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## Let us take the quiz to make sure you understand

1.The symptoms of hypoglycemia may include hunger, weakness throughout the body, accelerated heart rate, and cold sweats.

Yes    No    Don't know

2.The symptoms of high blood sugar may include blurred vision, increased thirst, frequent urination, and fatigue.

Yes    No    Don't know

3.If Oral hypoglycemic medications are taken on time or insulin is administered as prescribed, it suggests that blood sugar is stable and under control. Daily monitoring of blood sugar levels may not be necessary.

Yes    No    Don't know

4.For diabetic patients, the recommended blood sugar level two hours after a meal is less than 180 mg/dL.

Yes    No    Don't know

5.The presence of ketones in the urine indicates poor diabetes control.

Yes    No    Don't know