

# *Diary*

## *Control of blood sugar*



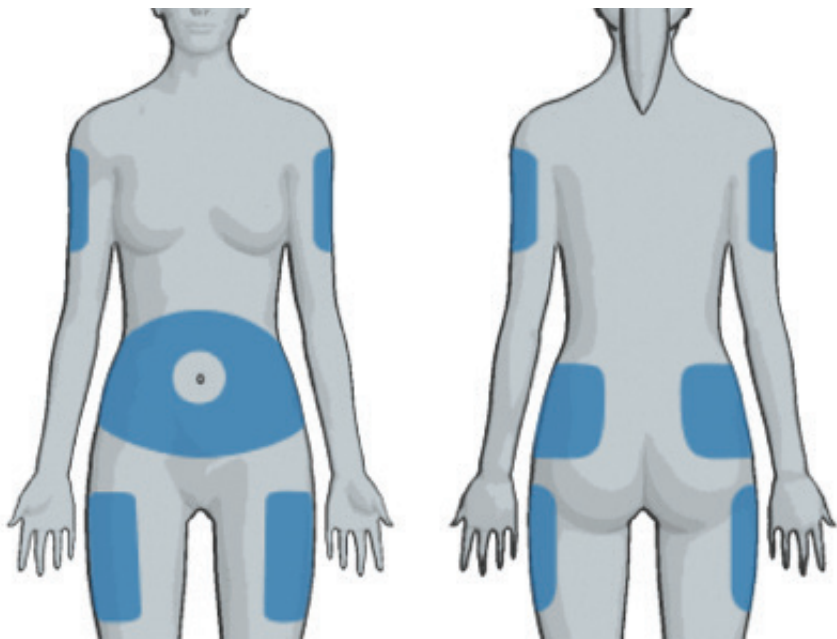
Ministry of Health

## Injecting Insulin

Insulin only needs to be injected under the skin (subcutaneously), not into a muscle or vein. Once it has been injected, it soaks into small blood vessels and is taken into the bloodstream.

The picture below shows the different areas where you can inject insulin. The area recommended most especially for pre-meal injection is the stomach as insulin injected here is absorbed more readily.

It is important to rotate injection sites within an area, moving one finger width from the site of the previous injection. Injecting into the same site can cause a build-up of lumps under the skin (known as lipohypertrophy). This may lead to erratic absorption of the insulin, which will affect control of blood glucose levels.



## Diary of Home Blood Sugar Testing

### PERSONAL DETAILS

Name:

Address:

Number:

City:

Postal Code:

Contact Tel. No.:

### DOCTOR'S DETAILS

Name:

Address:

Number:

City:

Postal Code:

Contact Tel. No.:

*Should you find this diary, please contact the owner as above.*

*Thank you  
Ministry of Health*

Being diagnosed with diabetes can be overwhelming particularly when thinking about lifestyle changes and how diabetes may affect your future. Understanding your diabetes and the steps you need to take to have control over it, is paramount. Knowledge is power.

Having control over diabetes involves implementing healthy eating, regular exercise, regular monitoring of your blood sugar levels and perhaps taking medication either in tablet form or as insulin injections.

### What is Diabetes

The hormone insulin allows cells in your body to take up and use blood glucose (sugar) as an energy source. In non-diabetics, the right amount of insulin is released in proportion to the amount of glucose that comes from the food that they eat.

**Type 1 Diabetes** occurs when the cells in the pancreas that normally produce insulin are damaged, causing little or no insulin to be produced. This type of diabetes is usually diagnosed at a very young age, although it can occur at any time and it can develop very quickly. Type 1 diabetes is controlled with insulin injections, which are used to balance the amount of sugar in the blood.

**Type 2 Diabetes** occurs either when the pancreas does not produce enough insulin or when the cells in the body have become resistant to insulin, or a combination of both. It develops slowly over a long period of time.

### Control over Diabetes

Managing your diabetes can prevent or slow the progress of many complications of diabetes, giving you extra years of a healthy, active life. The four steps you need to adopt are:

1. Measure your blood glucose levels regularly through self-testing.

2. Adopt a healthy lifestyle through diet and exercise.
3. Manage your medications with your healthcare providers based on your changing needs.
4. Test on a regular basis your cholesterol levels, blood pressure and HbA<sub>1c</sub> levels.

### **1. Self-testing:**

Blood Glucose Monitoring is your main tool for monitoring your control over diabetes. Testing your blood glucose levels frequently gives you feedback on how your diet, exercise, medication, stress and other lifestyle factors are affecting your blood glucose levels.

This knowledge allows you to make the right adjustments and improve your glycemic control on a day-to-day basis. Once your control targets are achieved, testing is equally important to help maintain excellent results. When you are able to keep your blood glucose levels balanced, you are likely to find that you feel fitter and have more energy.

**When to test:** You can test anytime of the day, however, it is good practice to test at specific times each day. Keeping a log of your results is crucial. When you bring this record to your healthcare provider, you present a good picture of your body's response to your diabetes care plan. Testing is the most powerful tool you have as a person with diabetes. With the help and guidance of your healthcare provider you will learn to act on the information you get from your testing.

How often you should test varies for each individual. You and your healthcare team will determine how often you should test based on your needs. They may suggest that you test your blood sugar at any of the following times: Before meals, two hours after a meal, before bedtime, sometimes in the middle of the night, before, during or after exercise, during times of illness, during pregnancy, whilst adjusting medications.

**Testing around meals:**

Food has an immediate and direct impact on blood glucose, so it is an important activity to have regular testing around it. You may include tests every day before and after meals.

**Fasting glucose:** Testing before you have eaten for the day will help you understand whether the medication you are taking is controlling your blood glucose overnight.

		BLOOD SUGAR					
		BREAKFAST		LUNCH		DINNER	
DATE		BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER
Sun							

**Pre-meal glucose:** Testing before meals can help guide decisions about food tablets/insulin for the coming meal. If your glucose levels have been too high, this can be the extra incentive to eat healthier foods and to know which foods you need to avoid.

		BLOOD SUGAR					
		BREAKFAST		LUNCH		DINNER	
DATE		BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER
Sun							

**After-meal glucose (also called “post-prandial”):** Testing after meals tells you how your meal affected your blood glucose, and whether your body had the right amount of insulin to cover the food you have eaten. This is the test that helps you learn the most about your food choices. As you are beginning to learn about

living with diabetes, you can log your diet and then check for blood glucose patterns to help steer you in the direction of healthier eating patterns.

		BLOOD SUGAR					
		BREAKFAST		LUNCH		DINNER	
DATE		BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER
Sun							

### Blood Sugar Targets

- HbA<sub>1c</sub>: Below 7%
- Before meal sugars: Below 130mg/dL
- Two hours after meals: Less than 160 mg/dL

### Exercise and Diet

Adding exercise into your life will help you gain control over your diabetes and boost your overall enjoyment of life. Losing weight may bring your glucose levels down to normal and will help combat heart disease and other risks associated with diabetes. Even if you do not need to lose weight, exercise is helpful in controlling your blood glucose levels.

Remember to always consult your healthcare professional about your exercise plan.



You shouldn't feel deprived of food choices once you have diabetes. It is a misconception, that people with diabetes need to have a very different diet and one without any sugar. The same amount of carbohydrates from a starch or sugar raises blood glucose levels the same.

You want to be consistent and eat about the same amount of carbohydrates and calories every day. This helps control your blood sugar and your weight. Consistency with your meals is key because your body responds to excess fat and calories with an undesirable spike in glucose. This is why testing after meals is very important, to get an understanding about which foods and meals are causing unacceptable spikes and to modify your behaviour based on your results. A diabetic meal plan is in fact the same one that everyone should have so as to look and feel their healthiest. Generally speaking, you want to emphasize vegetables, fruits and whole grains, and avoid too much saturated fat. A high fibre diet is beneficial. Your dietician will help you with your meal plan.



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## Bibliography

American Diabetes Association. *Standards of Medical Care in Diabetes*. Diabetes Care 2016, Vol.39/Supplement 1



## Overall Recommended Targets

### Blood Sugar

- HbA<sub>1c</sub>: Below 7%
  - Fasting sugar: Below 130 mg/dl
  - Sugar before meal: Below 130 mg/dl
  - Sugar two hours after meal: 140 -160 mg/dl
- 
- Blood Pressure: Below 130/80 mm Hg
  - Triglycerides: Below 150 mg/dL
  - LDL (bad cholesterol): Below 100 mg/dL
  - HDL (good cholesterol): For men: higher 40 mg/dL  
For women: Higher than 50 mg/dL

## Personal Targets

- HbA<sub>1c</sub> .....
- Fasting sugar .....
- Sugar before meal .....
- Sugar two hours after meal .....
- Blood Pressure .....
- Triglycerides .....
- LDL (bad cholesterol) .....
- HDL (good cholesterol) .....

## Other Targets

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- .....
- .....
- .....
- .....

## Personal Targets

- HbA<sub>1c</sub> .....
- Fasting sugar .....
- Sugar before meal .....
- Sugar two hours after meal .....
- Blood Pressure .....
- Triglycerides .....
- LDL (bad cholesterol) .....
- HDL (good cholesterol) .....

## Other Targets

- .....
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- .....
- .....
- .....

## Appointments

Date	Day	Time	Clinic

## Appointments

<b>Date</b>	<b>Day</b>	<b>Time</b>	<b>Clinic</b>

**BLOOD SUGAR**

DATE	BREAKFAST		LUNCH		DINNER	
	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER

A series of horizontal lines for writing notes, with a light gray gradient at the bottom of the page.

## BLOOD SUGAR

DATE	BREAKFAST		LUNCH		DINNER	
	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER



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DATE	BLOOD SUGAR					
	BREAKFAST		LUNCH		DINNER	
	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER


**BLOOD SUGAR**

DATE	BREAKFAST		LUNCH		DINNER	
	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER

The image shows a series of horizontal lines for writing notes. There are 16 lines in total, starting from the top and ending near the bottom of the page. A vertical line is on the left side, creating a margin. The bottom right corner of the page has a light gray shaded area.

MARCH

## BLOOD SUGAR

DATE	BREAKFAST		LUNCH		DINNER	
	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER


**MARCH**

**BLOOD SUGAR**

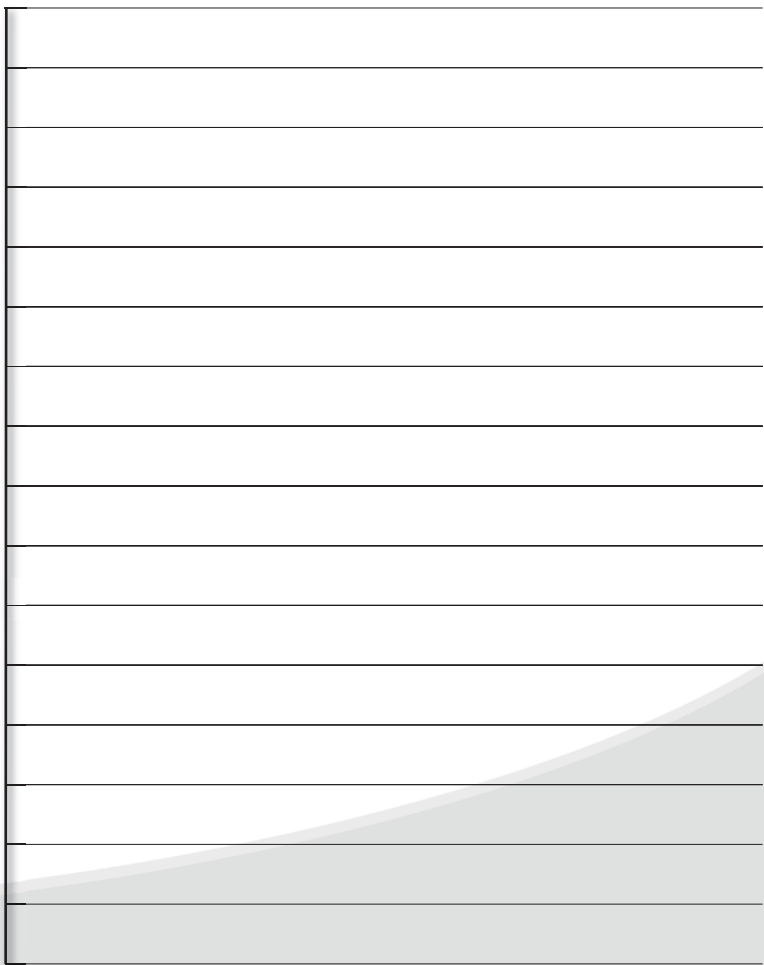
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	<b>BEFORE</b>	<b>2 HOURS AFTER</b>	<b>BEFORE</b>	<b>2 HOURS AFTER</b>	<b>BEFORE</b>	<b>2 HOURS AFTER</b>



A blank sheet of lined paper with horizontal ruling lines and a vertical margin line on the left. The paper is otherwise empty, with no text or markings. A decorative gray gradient is present at the bottom right of the page.

BLOOD SUGAR

DATE	BREAKFAST		LUNCH		DINNER	
	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER



A series of 18 horizontal lines for writing notes, arranged vertically. The lines are evenly spaced and extend across most of the page width. A light gray decorative gradient is visible at the bottom of the page, starting from the left and curving upwards towards the right.

## BLOOD SUGAR

DATE	BREAKFAST		LUNCH		DINNER	
	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER

A vertical rectangular area with 18 horizontal lines, serving as a template for notes. The lines are evenly spaced and extend across the width of the page. The area is bordered on the left and bottom by a solid black line, while the top and right sides are open.

MAY

## BLOOD SUGAR

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BLOOD SUGAR						
	BREAKFAST		LUNCH		DINNER	
DATE	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER



A series of 18 horizontal lines for writing notes, arranged vertically. The lines are evenly spaced and extend across most of the page width. The background of the page is white, with a light gray gradient at the bottom.

**BLOOD SUGAR**

<b>DATE</b>	<b>BREAKFAST</b>		<b>LUNCH</b>		<b>DINNER</b>	
	<b>BEFORE</b>	<b>2 HOURS AFTER</b>	<b>BEFORE</b>	<b>2 HOURS AFTER</b>	<b>BEFORE</b>	<b>2 HOURS AFTER</b>

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## BLOOD SUGAR

DATE	BREAKFAST		LUNCH		DINNER	
	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER

A vertical grid for notes consisting of 18 horizontal lines. The lines are evenly spaced and extend across the width of the page. A light gray decorative gradient is present at the bottom of the page, starting from the left edge and extending towards the right.

BLOOD SUGAR

BREAKFAST		LUNCH		DINNER		
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## BLOOD SUGAR

DATE	BREAKFAST		LUNCH		DINNER	
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**AUGUST**

# BLOOD SUGAR

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A series of 17 horizontal lines for writing notes, arranged vertically on the page. The lines are evenly spaced and extend across most of the page width. At the bottom of the page, there is a light gray decorative gradient that starts from the left edge and curves upwards towards the right edge.

AUGUST

BLOOD SUGAR

BREAKFAST

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DINNER

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BLOOD SUGAR

DATE	BREAKFAST		LUNCH		DINNER	
	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER

A series of 18 horizontal lines for writing notes, arranged vertically on the page. The lines are evenly spaced and extend across most of the page width. At the bottom right of the page, there is a light gray gradient area that tapers upwards.

SEPTEMBER

BLOOD SUGAR						
BREAKFAST			LUNCH		DINNER	
DATE	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER





The image shows a page with a vertical line on the left side and 18 horizontal lines extending across the width of the page. These lines are evenly spaced and intended for writing notes. The page has a white background with a light gray gradient at the bottom.

OCTOBER

# BLOOD SUGAR

DATE	BREAKFAST		LUNCH		DINNER	
	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER



## BLOOD SUGAR

DATE	BREAKFAST		LUNCH		DINNER	
	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER

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**NOVEMBER**

BLOOD SUGAR						
BREAKFAST		LUNCH		DINNER		
DATE	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER

The page contains 18 horizontal lines for writing notes. The lines are evenly spaced and extend across most of the page width. At the bottom of the page, there is a light gray gradient that starts from the left edge and curves upwards towards the right edge, partially overlapping the bottom-most lines.

## BLOOD SUGAR

DATE	BREAKFAST		LUNCH		DINNER	
	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER



A series of 18 horizontal lines for writing notes, arranged vertically. The lines are evenly spaced and extend across most of the page width. A light gray decorative gradient is present at the bottom of the page, starting from the left edge and curving upwards towards the right.

## BLOOD SUGAR

DATE	BREAKFAST		LUNCH		DINNER	
	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER

A vertical rectangular box with a thin black border on the left and bottom sides. Inside the box, there are 18 horizontal lines spaced evenly, creating a series of rows for writing notes. The lines extend from the left border to the right edge of the page.

BLOOD SUGAR

DATE	BREAKFAST		LUNCH		DINNER	
	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER	BEFORE	2 HOURS AFTER

A series of 18 horizontal lines for writing notes, arranged vertically on the page. The lines are evenly spaced and extend across most of the page width. At the bottom of the page, there is a light gray shaded area that tapers upwards from the left side.





Lined paper for notes with a grey header and horizontal dashed lines.







## Diabetes Plate Model



The plate model is a simple way for people who have diabetes to plan meals. With the plate model, a 9-inch plate serves as a guide for the amounts (serving sizes) and kinds of food that you should choose.

A clinical dietitian can help you use this model to plan healthy meals that meet your needs. The amount and type of food that you should eat for each meal depends on your age, weight, usual food intake, physical activity level, blood sugar levels, and diabetes medicine.



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