



# High and Low Blood Glucose Levels

# High and low blood glucose

A TRUEinsight™ Guide to help you recognize and understand the symptoms of high and low blood glucose levels and how to treat them.

Controlling blood glucose levels is important if you want to feel your best and avoid the complications of diabetes. Daily blood glucose monitoring is a valuable tool to evaluate how well your diabetes management is working to keep your blood glucose levels within target range. The goal of self blood glucose monitoring is to make sure that the majority of your blood glucose levels stay within your target range. At times, during monitoring, your blood glucose levels may vary outside of this range. When this happens, it's important to review the results in your log book to determine what was happening during this time and how it affected your blood glucose results.

## Hypoglycemia – Low Blood Glucose

Hypoglycemia, or low blood glucose, occurs when blood sugar levels fall below your target range.

Why does this happen?

Reasons include:

- Eating too little food
- Eating at a later time than normal
- Skipping a meal or snack
- Alcohol consumed without eating food
- Long periods of exercise or strenuous exercise
- Taking too many glucose-lowering pills or too much insulin



## Symptoms of Hypoglycemia

When hypoglycemia occurs, you may or may not experience symptoms that alert you that blood glucose levels are dropping.

Early symptoms of hypoglycemia may include:

- Feeling shaky, weak or hungry
- Dizziness
- A rapid heartbeat
- Numbness or tingling of the lips
- Sweating
- Problems with your vision
- Lightheadedness
- Headaches

### Hypoglycemia and related symptoms

may occur at varying blood glucose levels for each individual. Most diabetes healthcare professionals recommend treatment for hypoglycemia when symptoms are present or blood glucose levels fall below 70 mg/dL. Left untreated, blood glucose levels continue to drop, symptoms worsen, and you may feel faint or pass out. It's important to become aware of how your body feels when hypoglycemia is occurring, so you are prepared to treat the symptoms immediately and effectively.

Work with a healthcare professional to determine what your target blood glucose level should be and how you should treat hypoglycemic symptoms when they occur.

# Treating Hypoglycemia

**Stacy's story:** When looking at Stacy's log book you can see that her blood glucose results before lunch are low, and she is probably experiencing symptoms of hypoglycemia around her lunch time. As she reviews her results, Stacy should ask herself:

- Did I eat breakfast at my normal time or miss a meal?
- Have I exercised longer or performed more strenuous activities than my usual routine?
- Did I take too much insulin or diabetes medications?

Date/ Fecha	Blood Glucose Values/Valores de Glucosa en Sangre						Insulin, Medication/ Insulina, Medicamento	Notes/ Notas
	Breakfast/ Desayuno		Lunch/ Almuerzo		Dinner/ Cena			
	Before/ Antes	After/ Después	Before/ Antes	After/ Después	Before/ Antes	After/ Después		
6/1/08			55	129				
6/2/08	90			165				
6/3/08			62	147				
6/4/08			57		156			
6/5/08	97			176				

Home Diagnostics provides all users of our monitoring systems with a free log book, which lets you record your results and make a note of the things that may affect your blood glucose level. The log book helps you spot trends.

**If you notice that hypoglycemia or low blood glucose is occurring more frequently, contact your healthcare professional and set up an appointment to review your treatment plan together.**

**When you are experiencing symptoms** of hypoglycemia, immediately check your blood glucose level. This will give you a baseline reading so you will be able to measure the effectiveness of your treatment. Next, eat or drink something containing 15 grams of carbohydrates. Listed below are examples of one serving (15 grams) of carbohydrates:

- 1/2 Cup of fruit juice (125 ml)
- 1/2 Cup of regular lemonade or soft drink (not diet)
- 4 Teaspoons of granulated sugar
- 1 Tablespoon of honey
- Glucose tablets or gel (per package instructions)



**Test again after 15 minutes.** If your level is above 70 mg/dL, you are feeling better and symptoms subside, it is safe to continue your daily activities. To be safe, eat a longer acting carbohydrate and continue following your management plan. If after three tests your blood glucose levels continue to be low, call your healthcare professional.



**Always consult with your healthcare professional before making changes in your diabetes management plan.**

# Interpreting **your results**

**Hyperglycemia occurs when** blood glucose levels are too high. Situations that can cause hyperglycemia include:



- Eating too much food or meals too close together
- Illness
- Forgetting to take diabetes medications or insulin
- Not taking the correct amount of medications or insulin
- Missing your usual exercise routine
- Stress

Regular blood glucose monitoring is the only way to detect hyperglycemia and treat it before serious complications occur.

## Symptoms of Hyperglycemia

Not everyone living with diabetes experiences the same symptoms of hyperglycemia. In some people the symptoms may not feel as pronounced, or the individual may not associate the symptoms to high blood glucose levels.

**The following are symptoms of hyperglycemia:**

- Feeling tired or fatigued
- Increased thirst
- Frequent urination
- Sores that are slow to heal
- Blurred vision
- Headaches



**If hyperglycemia goes untreated, it can lead to long-term complications.**

## Treating Hyperglycemia

In order to treat and prevent hyperglycemia, it is important to understand why it is happening. Review your blood glucose results and think about what has changed that could be causing high blood glucose results. As you review your results, ask yourself these questions:

- Have I changed my meal/diet plan? Added new foods or eaten more portions than usual?
- Have I taken my medications correctly? The right dosage at the right time?
- Have I changed my daily activity regimen? Decreased or stopped exercising?
- Have I been feeling ill or under stress?

If your glucose levels continue to be high, call your diabetes healthcare professional to review your diabetes management. Your healthcare professional may advise you to decrease the amount of food you are eating, increase your diabetes medications or increase your amount of daily activity. As you adjust your diabetes management, continue to monitor your blood glucose levels so you can evaluate if the plan is working to lower your levels.

**Hyperglycemia can be dangerous** if left untreated, leading to potential medical emergencies. Keep your healthcare professional informed if your blood glucose levels remain high for several days and you have not been able to get them into target range.



### The More You Know, The Healthier You Can Be

Identifying patterns and understanding the causes of low or high blood glucose levels is the first step in achieving blood glucose control. Recognizing the symptoms and effectively treating them will minimize reoccurrences. Keeping blood glucose levels within your target range will help you feel your best, prevent complications of diabetes, and help you continue to live a healthy and active life.

## Other available TRUEinsight™ guides

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TRUEinsight™ Guides  
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diabetes and lifestyle  
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**1.800.342.7226**

### **American Association of Diabetes Educators**

800-TEAM-UP-4  
[www.aadenet.org](http://www.aadenet.org)

### **American Diabetes Association**

800-342-2383  
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### **National Institute of Diabetes and Digestive and Kidney Diseases, National Diabetes Information Clearinghouse**

800-860-8747  
[www.niddk.nih.gov](http://www.niddk.nih.gov)

### **Juvenile Diabetes Research International Foundation**

1-800-533-2873  
[www.jdrf.org](http://www.jdrf.org)

### **Home Diagnostics, Inc.**

[www.homediagnostics.com](http://www.homediagnostics.com)

Information contained in this brochure was sourced through:

American Diabetes Association, Resource Guide 2008; Diabetes Forecast, January 2008, pg. RG 11-14.

American Diabetes Association Standards of Medical Care in Diabetes, Diabetes Care, January 2008, pgs. S2-S54.

Life with Diabetes: A Series of Teaching Outlines, 2nd edition by the Michigan Diabetes Research and Training Center; lead authors Martha M. Funnell, M.S., R.N., C.D.E.; Marilyn S. Arnold, M.S., R.D., C.D.E.; Patricia A. Barr, B.S.; Andrea Lasichak, M.S., R.D., C.D.E.; 2000 by American Diabetes Association.

