

Inpatient Diabetes Guide

Diabetes and Endocrinology Center



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My Information

Name	Date of Birth
Address	
City	
Home Phone	
Cell Phone	
Admission Date	
In an emergency call:	
Name	
Address	
City	State Zip
Home Phone	Work Phone
Cell Phone	

Make sure you have these supplies/prescriptions before leaving the hospital

- Insulin (vials or pens) if needed
- Syringes or pen needles if needed
- Oral medications if needed
- Blood glucose meter and strips
- Lancets and lancing device
- Urine ketone strips (type 1)
- Glucagon emergency kit (for insulin treated patients)
 - Medical alert necklace/bracelet

If you go to an emergency room in the next 30 days, it is important that you tell the doctor or nurse that you were just in the hospital and why. Bring this book with you.

Your Doctors

Primary Doctor:		
	State	
Telephone		
Diabetes Doctor:		
Address		
	State	
Telephone		
Eye Doctor:		
Address		
	State	
Telephone		
Foot Doctor:		
Address		
	State	
Telephone		

Doctor's Appointments

Primary Doctor:
Your Appointment
Diabetes Doctor:
Your Appointment
Visiting Nurse Agency
Telephone
Follow-up Bloodwork
Other Visit
Your Appointment

My Medications

Medication Name	Dose & Frequency	When To Take	Your Medication	Last Dose Given

Know Your Numbers

DATE	BP	CHOL	LDL	HDL	TRI	A1C	WT	BMI	WAIST
Goals	Below 140/80 mm/Hg	Below 200 mg/dL	Below 100 mg/dL	Above 50 mg/dL	Below 150 mg/dL	Ask MD	Lbs	Below 25 kg/m2	Below 35W 40M inches

My Medication Allergies

Hemoglobin A1C/ HbA1C

My A1C: Date done: My eAG:

Even though you use your glucose meter every day to check your blood sugar, you need to know if your treatment is working. A test called hemoglobin A1C/HbA1C measures your average blood sugar over the past two to three months. It is reported as a percent (i.e. 6.9%). Your doctor will help you figure out your A1C goal. For most people the goal is 7% or lower. Your A1C goal will depend on your age, general health, how long you have had diabetes and if you have any other health problems.

HbA1C and Matching Average Glucose Range		The A1C Test		
A1C (%)	eAG (mg/dL) = 'estimated average glucose' range	The A1C Test		
5	97			
5.5	111	Red blood cell		
6	126	Homoglahin		
6.5	140	Hemoglobin		
7 = Goal for most people with diabetes	154	Glucose		
7.5	169	A normal A1C results		
8	183	means that a healthy		
8.5	197	amount of glucose is		
9	212	inside red blood cells.		
9.5	226	Glucose		
10	240			
10.5	255			
11	269			
11.5	283	A high A1C test means		
12	298	that too much glucose is		
		inside red blood cells.		

Knowing your A1C is important because it tells you how controlled your diabetes is and your risk for problems with your eyes, heart, feet and kidneys. To get the best diabetes care, it is important to have your A1C checked at least 2-4 times a year. If your A1C is not at goal, you need to talk with your doctor about changing your treatment plan.

Diabetes

Your body changes much of the food you eat into a sugar called glucose. Your blood then carries the glucose to all the cells in your body where it is either used for energy or stored to use later when you need extra energy. The cells use the glucose for energy with the help of a hormone called insulin. Insulin is made by an organ in your body called the pancreas.



Diabetes is a disease where your body is not able to properly use the sugar (glucose) from the food you eat. Your body's cells need glucose for energy. Glucose comes from the carbohydrates you eat. Insulin must be present for glucose to get into the cell to be used as energy. When you have diabetes your body either does not produce any or enough insulin or the cells do not recognize the insulin. Without insulin the glucose stays in your blood and causes high blood sugar (hyperglycemia).

Type 1 diabetes

With type 1 diabetes, the body does not make any insulin. Individuals with type 1 diabetes need to take insulin shots to live. This form of diabetes which was called juvenileonset or insulin-dependent diabetes usually develops in children or young adults, but it can occur at any age.

Type 2 diabetes

With type 2 diabetes, the body produces insulin but there is not enough or it is not very good at changing the blood sugar into energy. This form of diabetes usually happens in overweight people, and in people who have a family history of diabetes. It is usually diagnosed in people over the age of 40, but it is does occur in younger people and teenagers.

Gestational diabetes

This type of diabetes develops in pregnancy. Treatment starts with diet and exercise, but can include pills and insulin. It is important to continue to check for diabetes after the pregnancy, because you are at a greater risk for getting type 2 diabetes later in life.



Do I need to check my blood sugar?

Your doctor (MD, DO, APRN, PA) will tell you how many times to check your blood sugar daily.

If you are taking pills or just one shot of insulin per day you will be asked to check your blood sugar twice a day.

If you take several shots of insulin, are on an insulin pump or are pregnant you may need to check your blood sugar four or more times a day.

The best times to check are

- fasting before meals,
- two hours after a meal,
- or at bedtime.

There may be times you may need to check your blood sugar more often than usual. This is when you are sick, pregnant, changing or adding medications, or have had high or low readings.

What should my readings be?

- Before a meal: 70-130 mg/dL
- 2 Hours after a meal: 100-180 mg/dL

These target ranges may be different for each person.

Ask your doctor for YOUR specific target ranges.

The only way to know if your diabetes treatment is working is by checking your blood sugar level.

Checking blood sugar at home

- To check your blood sugar at home you will need a glucose meter, test strips and lancets.
- Start by washing your hands with soap and water.
- Dry your hands well.
- Turn the glucose meter on by placing a test strip into the meter.
- Using your lancing device, choose a finger and prick it.
- Pick a different finger each time. Do not prick the tip or the pad of the finger, these areas can become sore.
- Massage your finger in an upward stroke to bring a drop of blood to the surface.
- Put a drop of blood onto the test strip.
- The glucose meter will provide a reading of your blood sugar.

Keep your test strips in the container and the cap tightly closed.

Keeping track of your blood sugar

- It will help you and your doctor if you write down your blood sugar level every time you check it. Ask your nurse for a log book if you need one. If you have a new meter, a log book may be inside the box or the meter case.
- Show your log booklet to your provider at all office visits!
- Questions on your meter? Call the 1-800 or 1-888 phone number on the back of your meter for technical assistance.

Blood After After After Breakfast Lunch Dinner Bedtime Night Breakfast Lunch Dinner Sugar Monday Tuesday Wednesday Thursday Friday Saturday Sunday

Call your doctor if your blood sugar is always greater than 180 mg/dL or you have any unexplained readings less than 70 mg/dL. Your treatment plan may need adjusting!

Week of:

Low Blood Sugar/Hypoglycemia (Blood sugar less than 70 mg/dL)

Low blood sugar can be caused by too much diabetes medicine, eating too little or too late or exercising too much. Signs of low blood sugar: you may feel shaky, sweaty, dizzy, weak, hungry, nervous, or grouchy. If your blood sugar gets too low you may pass out. It is important you know the signs and how to treat low blood sugar.

Low Blood Sugar Warning Signs



Shaky or Dizzy





Tired



Hungry



Blurry vision

Sweating



Headache



Upset or Nervous

Steps to treat low blood sugar

- 1. Sit down, stop what you are doing. Do **NOT** drive.
- 2. Check your blood sugar. If less than or near 70 mg/dL, treat it immediately.
 - If you can't check it, and you think it is low, treat it anyway.
- 3. Drink or eat 15 grams of a fast acting sugar source:
 - 4 oz. regular fruit juice OR

to be safe.

- 6 oz. regular soda (NOT diet), OR
- 8 oz. (1 cup) skim or low-fat milk, OR
- 3-4 glucose tablets (you may purchase at pharmacy), OR
- 1 tablespoon of sugar or honey, OR
- 7 gum drops **OR** 8 regular Life Savers®
- No chocolate, peanut butter, or other high-fat foods. They don't raise your blood sugar fast enough.
- 4. Recheck blood sugar in 10-15 minutes after treating.

If blood sugar is still less than 70 mg/dL repeat treatment every 15 minutes until blood sugar is equal to or more than 70 mg/dL.



treatment every 15 minutes until blood sugar is equal to or more than 70 mg/dL. If you keep having problems and don't know why, call your doctor.

examples above.

Severe Low Blood Sugar

Severe low blood sugar is when the sugar is so low that a person is unable to help themselves and needs the assistance of others. Someone should quickly call 911 if you become unconscious (passed out), had a seizure or unable to swallow. Your family or a friend can be taught how to give you glucagon.

What is glucagon?

Glucagon is a hormone that helps raise blood sugar.

It is given as a shot. If you are prescribed glucagon, talk to your nurse educator about training the person who would be giving the shot.

Do you need glucagon?

You should learn to use glucagon if you:

- 1. Have type 1 diabetes.
- 2. Have ever had severe low blood sugar.
- Have ever lost consciousness (passed out) from a low blood sugar.
- 4. Have had a seizure from a low blood sugar.
- 5. Take 3 or more insulin shots a day or use an insulin pump.
- 6. Are unable to feel symptoms of low blood sugar (hypoglycemia unawareness).



High Blood Sugar/Hyperglycemia

High blood sugar levels that are often over 180 mg/dL are an indication that your current treatment plan is not working. High blood sugar levels can be caused by eating too much, taking too little diabetes medication, or being sick.

Signs of high blood sugar

You may notice increased thirst and/or urination, feel tired, and have blurry vision. Over time you may have more frequent infections and slow-healing cuts or sores.



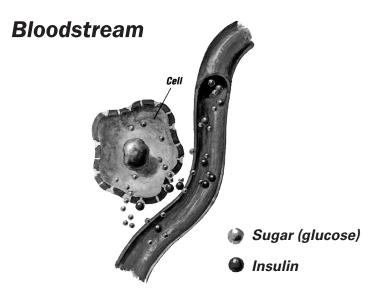
Steps to treat high blood sugar

Drink lots of water or sugar-free beverages. Check your blood sugar more often. Look for a pattern to try to figure out causes.

What Is Insulin?

Insulin is a hormone made in your pancreas that helps bring sugar (glucose) from your blood stream into your cells. The cells use the glucose as energy.

Insulin needs to be given as a shot and can come in a pre-filled pen or in a bottle. The needles used to inject insulin are very short and thin.



How do I store my insulin?

Insulin vials, pre-filled syringes, and insulin pens need to be stored in the refrigerator.

Once opened insulin pens and vials can be stored at room temperature for 28 days; however this can vary by brand.



Throwing away insulin syringes and needles

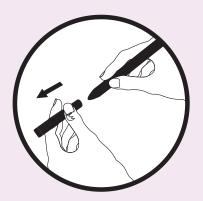
Insulin syringes and needles should be used only one time. If used more than one time, the needle becomes dull and the shot hurts. You are also at risk to develop an infection.

Place the syringe with attached needle into an empty, resealable container.

Needles should be disposed of correctly so others do not become injured. Check with your local or state board of health on the correct way to throw away needles and syringes.



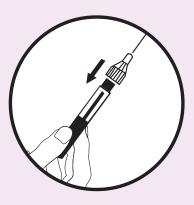
How to use a pre-filled pen.



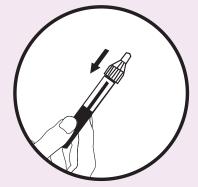
Remove the pen cap.



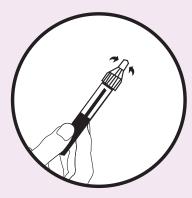
Take out new pen needle.



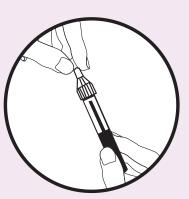
Position the needle along the axis of the pen.



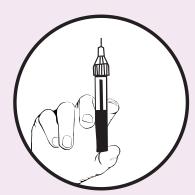
Pierce the center of the cartridge.



Screw on needle.



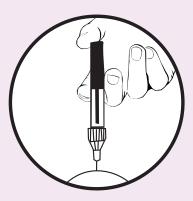
Pull off the outer and inner shield.



Follow the company's directions to prepare or prime your insulin pen.



Wipe injection site with alcohol swab. Select insulin dose.



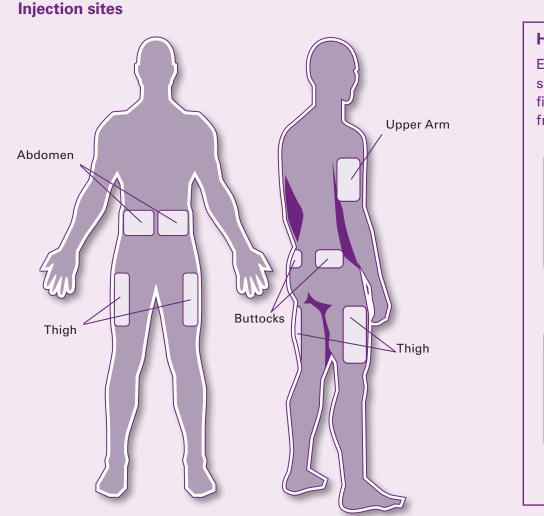
Perform the injection using the correct technique.

Choose the injection site

- 1. Proper injection sites include:
 - During the day take your usual dose before meals
 - Stomach (at least 2 inches or more from belly button, scars and moles).
 - Middle or outer part of thigh, at least 4 inches above knee and at least 4 inches down from top of leg.
 - The back of the arm may be used, but it is not a favorite site, as it is hard to get to the right spot when giving yourself a shot.
- 2. Pinch up skin (if you are very thin).

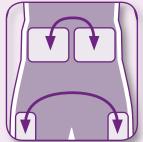
- 3. Push needle into skin (at a 90 degree angle).
- 4. Press dose button down firmly until it stops.
- 5. Hold pen in skin for 10 seconds.
- 6. Remove pen needle from skin.
- Press down on injection site firmly with tissue or alcohol wipe to prevent bruises.
- 8. Place large cap on needle; turn counterclockwise to remove the needle.
- 9. It is very important to change injection sites so that you do not overuse any one site. Your nurse educator will discuss this with you.





How to rotate sites

Each new injection should be about a finger's width away from the last injection.



Change sites

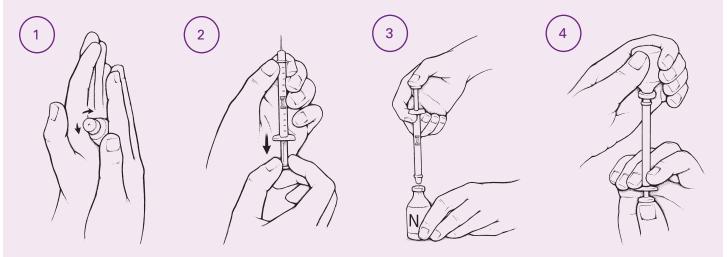


Drawing up insulin into a syringe

You will need: a syringe, insulin bottle & alcohol wipe

Wash your hands with soap and water and wipe the top of bottle with an alcohol wipe.

- 1. If using a cloudy insulin gently roll the bottle of insulin between the palms of your hands until mixed (no rolling is needed if using a clear insulin)
- 2. Take cap off needle. Pull plunger down to the number of units you were instructed to take.
- 3. With bottle on table, put needle into bottle. Push plunger down to push air into bottle.
- 4. Turn bottle upside down to draw the number of units you need.
- 5. Check for air bubbles. If air bubbles are seen in syringe, push insulin back into bottle and repeat steps 3 & 4.



Injecting

- 1. Hold syringe like a pencil.
- 2. Pinch up skin and inject straight into skin (at a 90 degree angle).
- 3. Let go of pinch and inject.
- 4. Press down on injection site firmly with tissue or alcohol wipe to prevent bruising.



It is very important to rotate injection sites so that you don't overuse any one site. Your nurse educator will discuss this with you.

Link Between Food and Blood Sugar

It is important to learn how to control your diabetes with healthy eating. The right amount of foods can help you keep a healthy weight and keep your blood sugar at a steady level. You will learn that the kind of food, the amount of food and when you eat are all important factors in controlling your blood sugar.

Carbohydrates

Glucose or blood sugar is the main source of fuel for your body. We get this sugar from the foods we eat, mostly from carbohydrates. Carbohydrates are found in many healthy foods: bread, grains, cereals, pasta, rice, starchy vegetables (potatoes, corn, peas, beans), fruit, milk and yogurt. Other sources of carbohydrates include sweets (cookies, ice cream, syrup, jams) fruit juice and sweetened drinks.

Examples of 1 serving or 15 grams of carbohydrate:



Starches: 1 slice of bread or a small roll 1/3 cup cooked rice or pasta 1/2 cup peas, corn, potato 3/4 cup cereal



Fruit: 1 small fruit 1/2 cup juice (4 oz.)



Dairy: 1 cup milk 3/4 cup light yogurt



Sweets: 2 small cookies 1/2 cup ice cream 1 tablespoon jam, sugar, syrup

Talking about your diet with a dietitian will help you develop your diet plan.

Information from Food Labels

- 1. Find the serving size at the top of the label
- 2. Decide how much you will eat
- 3. Find the total carbohydrates per serving
- 4. 1 carbohydrate serving is 15 grams
- 5. Dietary fiber and sugar are part of the total carbohydrate

Nutvition Footo	Serving Size
Nutrition Facts	This talls you have much food makes we
< 8 servings per container	This tells you how much food makes up one serving. If you eat more than one
Serving size 2/3 cup (55g)	serving, all the other values will increase.
Amount per serving	
Calories 230	Fat
% Daily Value*	
Total Fat 8g 10%	
Saturated Fat 1g 5%	trans fats. Both are bad for your health.
<i>Trans</i> Fat 0g	
Cholesterol Omg 0%	
Sodium 160mg 7%	Total Carbohydrate
Total Carbohydrate 370 13%	Tells you how many grams of
Dietary Fiber 4g 14%	
Total Sugars 12g	do carb counting, this number helps you
Includes 10g Added Sugars 20%	fit the food into your meal plan.
Protein 3g	·
Ū	
Vitamin D 2mcg 10%	
Calcium 260mg 20%	
Iron 8mg 45%	
Potassium 235mg 6%	
* The % Daily Value (DV) tells you how much a nutrient in	
a serving of food contributes to a daily diet. 2,000 calories	
a day is used for general nutrition advice.	

Foods that have little effect on blood sugar

Proteins and fats are found in healthy foods we eat, but have little effect on blood sugar. Examples of protein and fats include meats, chicken, fish, eggs, nuts, cheese and oils. Most vegetables have little effect on blood sugar.



Healthy eating tips

Eat a variety of foods from all the food groups.

Eat smaller portions to keep a healthy weight.

Eat about the same amount of carbohydrate at each meal. This helps keep your blood sugar stable.

Make sure you eat three meals a day. Do not skip meals. Some individuals need to have a snack between meals. Follow your meal plan.

You do not have to eat different foods from the rest of your family, but you may have to eat smaller amounts. See your dietitian for a meal plan that best fits your needs and personal goals.

Take steps today for a healthier tomorrow.

Exercise



Regular exercise improves your health in many ways:

- 1. It helps control blood sugar.
- It helps lower your weight and this will help lower insulin resistance.
- 3. It helps lower your blood pressure.
- 4. It helps reduce stress.
- 5. It helps lower your bad cholesterol (LDL) and improves your good cholesterol (HDL).
- 6. It helps keep your heart and blood vessels healthy.

The best form of exercise is aerobic exercise. This includes walking, jogging, biking, rowing and swimming. This kind of exercise works the large muscles and increases breathing and heart rate. It is suggested by the American Diabetes Association that you exercise 150 minutes a week. This can be done in 30 minute sessions 5 days a week.

Another form of exercise is resistance training. This includes the use of resistance machines at a gym or free weights and stretch bands at home. These exercises help strengthen muscles in the upper body, lower body and core. Do resistance exercises every other day.

See your doctor before starting to exercise. If you are just beginning to exercise, start easy and slowly increase the time and amount/speed of the exercise.

Avoiding Problems

Listed are things to be done to avoid problems or delay their progress once you have them. Keep your blood sugar and blood pressure under control and within your goal.



Eye damage (retinopathy) can lead to blindness

1. Have your eyes examined by your eye doctor (ophthalmologist) once a year.



Kidney damage (nephropathy) can lead to dialysis

1. Have your urine tested for protein (microalbumin) loss once a year.



Heart and blood vessel damage (cardiovascular damage)

- 1. If you are overweight, work on weight loss.
- 2. Do not smoke.
- 3. Stay active and eat healthy.
- 4. Call your doctor if you have chest pain or difficulty breathing. If you cannot reach your doctor, call 911 right away.



Nerve damage (neuropathy)

- 1. It is important you take care of your feet, skin and nails.
- 2. Tell your doctor if you have any symptoms of numbness, tingling, pain or loss of feeling in your feet or fingers.
- 3. Other forms of nerve damage include erectile dysfunction, and digestive dysfunction (gastroparesis).

Foot Care

Loss of feeling or pain in the feet, called neuropathy, is due to nerve damage that occurs in people with diabetes. It is important for you to take care of your feet, skin and nails.



To avoid harm to your feet:

- Keep blood sugar under good control and in your target range.
- 2. Check your feet every day and look for cuts, scrapes, blisters or sores.
- Wash your feet every day and then dry them thoroughly, especially between your toes. Do not soak your feet.
- Cut your nails straight across to prevent ingrown toenails.
- 5. Always wear shoes that are comfortable and fit well.
- 6. Do not go barefoot.
- 7. Wear loose fitting socks.
- 8. Have your feet checked by your doctor at every visit.

Tell your doctor if you have any symptoms of numbness, tingling, pain or loss of feeling in your feet or fingers

Sick Day Rules

You need to take extra care of your diabetes when you are sick. Illness or stress such as colds, upset stomach, the flu, surgery, emotional stress, infection, or injury, can cause your blood sugar to go out of control.

- Always take your diabetes medication unless your doctor tells you not to.
- 2. For mild sickness, check your blood sugar 4 times a day.
- For more severe sickness check your blood sugar every 3-4 hours. When you are sick your blood sugar can get high very quickly!
- 4. Call your doctor right away for:
 - constant nausea or diarrhea
 - vomiting or unable to keep fluids down
 - blood sugar over 250 mg/dL for more than 2 readings
 - blood sugar less than 70 mg/dL
 - fever for more than 24 hours
 - stomach pain
 - if you do not know what to do

If you have type 1 Diabetes and your blood sugar is always over 250 mg/dL, you will need to check your urine for something called ketones. Ketones show up in your urine when you don't have enough insulin in your body. To check for them you will need to purchase ketone strips from the pharmacy. The pharmacist can tell you how to use them. Treating ketones early can prevent a lifethreatening condition called Diabetic Ketoacidosis (DKA) and keep you out of the hospital. Call your doctor if you have any ketones in your urine.

"Gain the control you need for the life you want"

Diabetes Care Before Surgery or Tests

People with diabetes who do not have good control of their blood sugar may face more risks when having surgery or tests. Planning ahead can help decrease problems and make your surgery/test safe and successful. Talk to your diabetes or primary doctor about how to prepare for and control your diabetes before the surgery or test.

Good Diabetes Control and Diet:

Diabetes control is important before and after your surgery/test to help you get better and reduce the risk of infection. Wounds heal better if your blood sugar is less than 180 mg/dL.

Your surgery/test may not occur if your doctor feels that you do not have good blood sugar control before the surgery/test.

Follow your diabetes meal plan and take your medications as prescribed. You may be asked to stop eating and drinking for a number of hours before your surgery or test.

Follow the instructions carefully.

Blood Glucose Testing:

It is very important to check your blood sugar every day. Your doctor will want to see the log of your blood sugar readings to check if you are ready for surgery or tests.

If you have not been checking your blood sugar at home, talk to your diabetes doctor or primary doctor for instructions and prescriptions to get testing supplies.





How to Take Your Medications Before Surgery or Tests

You can get directions on how to take your medications before your surgery/test from your diabetes or primary doctor. However, here is some help to manage your diabetes medications before your surgery/test.

One day before surgery:

Take usual dose of all diabetes pills.

If you take insulin or other injectables:

- During the day take your usual dose before meals
- Take ½ dose of longer acting insulin at bedtime (Lantus, Levemir, NPH, Toujeo, Tresiba)

If you wear a pump:

- Continue usual basal rates until 12 a.m. (midnight) of the morning of surgery/test
- Decrease all basal rates by 20% starting at 12 a.m. (midnight) before morning of surgery/test



On day of surgery/test:

Do not take any oral diabetes pills

- Do not take any short acting insulin (Humalog, Novolog, Apidra and Regular)
- If you take Lantus, NPH, Levemir, Toujeo, or Tresiba in the morning, take ½ of the usual dose

If you wear an insulin pump, tell the doctors and nurses that you are wearing a pump when you arrive

- Change your site and reservoir the day before surgery/ test and bring extra supplies
- For surgery/test in the stomach area, place pump catheter in a site other than your abdomen
- Decrease all basal rates by 20% starting at 12 a.m. (midnight) on morning of surgery/test.

Note: If using 'premixed' insulin (Humulin, Novolin or Novolog 70/30, or Humalog 75/25, 50/50) or other injectables, contact you diabetes or primary doctor for specific directions.

After surgery/test:

Continue to test your blood sugar as directed and call your diabetes or primary doctor if the blood glucose reading is over 180 mg/dL. If you are unable to eat or tolerate food, call your doctor who did the surgery/test about changing your medications.

If you can eat and drink regular foods you will be able to take your medications as usual.

If you have been in the hospital for surgery or other reason make an appointment with your diabetes doctor or primary doctor within one month after your discharge.

Get Help

Managing your diabetes is up to you, but you do not have to do it alone. Your healthcare team will teach you about diabetes and how to control it. Your family and friends can also provide you with help so you are successful.



Your health care team includes:

Your primary doctor can send you to specialists as needed. These specialists can be:

- An endocrinologist a doctor who specializes in diabetes care
- A diabetes nutrition educator/registered dietitian an expert in food and diet
- A diabetes nurse educator a nurse who is trained to teach diabetes care

Your family and friends:

People who care about you will want to offer help. They can help you stay focused and provide support so you do well in managing your life with diabetes. Think about the ways they can help and do not wait to ask for help.

In Case of Emergency

If you have ANY of these symptoms:

- Trouble breathing
- Stomach pain
- Cannot hold fluids down for 12 hours
- Too weak to get out of bed
- Blood sugar above 500 mg and/or ketones in urine

Quickly, go to the emergency department at your hospital or call 911!



Notes

Resources

American Diabetes Association www.diabetes.org

American Association of Diabetes Educators www.diabeteseducator.org

National Diabetes Information Clearinghouse www.niddk.nih.gov

Center for Disease Control and Prevention www.cdc.gov

American Association of Clinical Endocrinologists

www.aace.com

The content for this book was found in the sources above. This book is to provide information and not replace medical care. It is not intended for sale.

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