

Hillcrest Center for Diabetes Management

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Hillcrest.com

Diabetes Safety Skills



*Hillcrest Center for
Diabetes Management*

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Medical Center

 Oklahoma Heart Institute

Diabetes Safety Skills

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What is Diabetes?

Diabetes is a disease in which the body does not produce or properly use insulin. Insulin is a hormone that is needed to convert sugar, starches and other foods we eat into energy to be used by the body.

In **TYPE 1 DIABETES**, the body stops making insulin. If this happens, you will need to take insulin injections to live and be healthy. Type 1 diabetes happens most often in children and adults under 30 years old, but may occur at any age.

In **TYPE 2 DIABETES**, the pancreas makes insulin, but the insulin cannot be used properly or it may not make enough. Type 2 diabetes most often occurs in adults at any age, but also occurs in children. Type 2 is often hereditary. Insulin resistance happens when the body cells block the insulin from moving the glucose into the cell. Insulin resistance is the body's inability to use the insulin the body makes. With insulin resistance, glucose builds up in the blood stream. Over time, the pancreas may tire out and lose its ability to make enough insulin. High blood glucose is not healthy for the eyes, feet, kidneys, nerves, and heart, especially if it continues for a long time. What can a person do to reduce insulin resistance? Get active, lose a few pounds, if needed, and eat healthier. An oral medication called an insulin sensitizer may also help to reduce insulin resistance.

Signs of Diabetes

- Frequent urination
- Tingling or numb hands or feet
- Constant thirst
- Fatigue
- Constant hunger
- Weakness
- Weight loss or weight gain
- Infections of the skin, gums, bladder, or vagina that keep coming back or heal slowly
- Dry, itchy skin
- Blurred vision

Treatment of Diabetes

There is no cure for diabetes, but it can be controlled and you can lead a healthy life. Controlling blood sugar can be done by healthy eating and regular physical activity. Sometimes these lifestyle modifications are enough to control type 2 diabetes. With type 2 diabetes, medication may be needed in addition to meal planning and exercise. Diabetes pills and sometimes insulin injections are medications used to lower blood glucose levels when healthy eating and exercise do not control the blood sugar levels. With type 1 diabetes, it is necessary to take insulin daily.

Sometimes people with type 2 diabetes also need to take insulin injections. However, they still have type 2 diabetes, not type 1. Insulin is just another medication used to treat diabetes when necessary. Physical activity and exercise help the insulin in the body be used more effectively and can also help with weight maintenance and weight loss.

Blood glucose monitoring allows you to track how effectively food, exercise, and medication are controlling your blood sugar. The only way you know your blood glucose level is to check your glucose with a glucometer. Good blood sugar control is the key to preventing serious complications in the future and to feeling better now.

Diabetes self care includes:

- Problem solving
- Reducing risks
- Healthy coping
- Healthy eating
- Being active
- Monitoring
- Taking medication

**Your diabetes educators are here
to help in any way you can!**

Target Blood Glucose Ranges

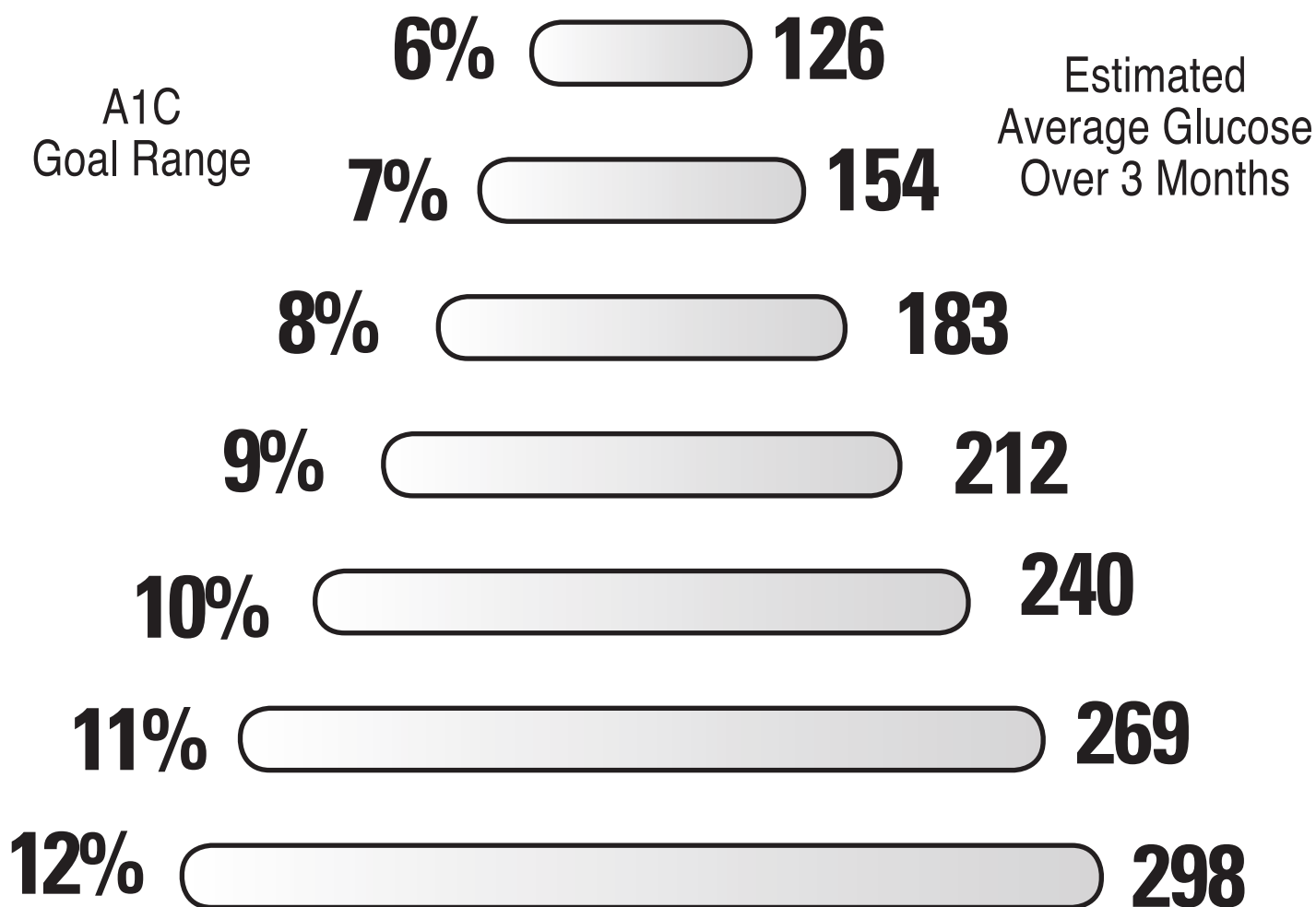
	Goals for Individuals with Diabetes	Non- Diabetes Ranges	Your Individual Target
Pre-meal or Fasting Blood Sugar	70 to 130	70 to 99 <small>(Prediabetes = 100-125)</small>	
2 hours after start of meal or peak	Under 180	Under 140	
Bedtime Glucose	100 to 140		
A1C	Under 7%	Under 5.7%	

NOTE: For those desiring tighter diabetes management control, the American College of Endocrinology (ACE) recommends fasting blood sugar of less than 110, a 2 hour post meal of under 140 and an A1C of less than 6.5.

Goals for Individuals with Diabetes

<p>Please discuss your individual targets of _____ with your physician.</p> <p>Your new targets are being suggested due to: _____</p>	<p>Blood Pressure.....Less than 140/80</p> <p>Lipids</p> <p>Cholesterol.....Under 200</p> <p>LDL..... Under 100 <small>(Under 70 if you also have heart disease)</small></p> <p>HDL Over 40 (men)</p> <p>HDL Over 50 (women)</p> <p>TriglyceridesUnder 150</p>
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A1C = Long Term Glucose Control



What's Your Number?

An A1C test shows how well you are doing in managing your diabetes over time. The A1C represents the mean average glucose in your blood over a 3-4 month period. The A1C test can be ordered by your physician or purchased "over the counter" at your local pharmacy.

Your current A1C test result is _____ on _____
(Date)

Diabetes Meal Planning

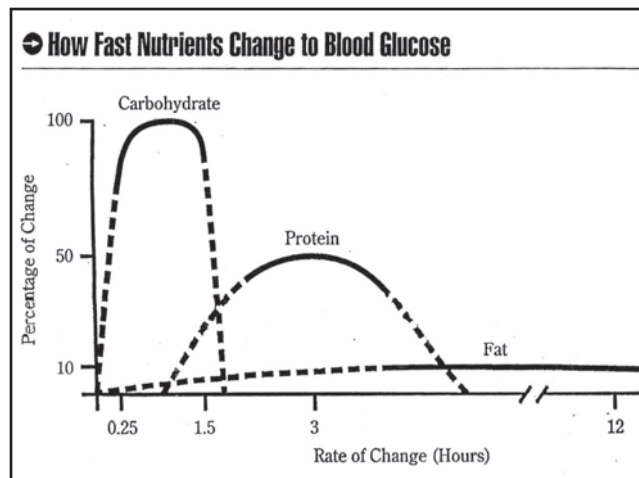
There is no “Diabetic Diet”. Meal planning for diabetes has changed.
A meal plan for diabetes is like a meal plan for everyone: **Healthy Eating!**

Some foods can raise blood sugar more than others. Foods that raise blood sugar the most are called carbohydrates (carbs). Carbs supply lots of vitamins and minerals, so don't stop eating them!
Carbs also give our bodies energy that comes in the form of glucose (or blood sugar).

Glucose (blood sugar) is moved from the blood to the cell with a “helper” called insulin.
Insulin is a hormone that lowers the blood sugar.

Glucose + Insulin = Energy for the body's cells!

Percentage of Nutrients Changed to Blood Glucose (BG)



Carbohydrates

- Starches** (Grains, breads, cereal, pasta)
- Starchy Vegetables** (Corn, potatoes, peas, dried beans)
- Fruit**
- Milk/Yogurt**
- Sweets**

Free Foods

Any food or beverage with 20 calories or less per serving

- | | |
|--------------------------|------------------------|
| Sugar Free Jello | Herbs and Spices |
| Diet Soda | Artificial Sweetener |
| Non Starchy - Vegetables | Sugar Free Drink Mixes |
| Coffee, Tea, Water | |

Protein

- (6 oz a day; 3 oz = a deck of cards)
- Lean Beef, Chicken, Fish, Pork, Eggs, Tuna, Salmon**
- *Cheese** Reduced fat
- Cottage Cheese**
- *Peanut Butter**
- *High in fat**

Fats

- Eat small servings if you want to lose weight**
- HEART HEALTHY FAT (Monounsaturated)** Avocados, Canola, Olive Oil, Peanut Butter, Almonds, Cashews, Pecans & Peanuts,
- Omega-3 Fats** Fish Oil, Flax Oil, Canola Oil, Fish (Herring, Mackerel, Salmon), English Walnuts,
- Polyunsaturated Fats** Corn Oil & Safflower Oil
- UNHEALTHY FAT SATURATED FAT** Bacon, Butter & Lard, Sausage, Hot Dogs, Bologna, Salami, Solid Shortening, Some Chips, Cream & Sour Cream, Ice Cream, Chocolate, Poultry Skin, Coconut & Palm Oil, Marbled and Fatty Meats, Salt Pork, Whole Milk

Carbohydrates

General Guidelines for Carbohydrate Choices per meal:

Men: 3-4 carb choices per meal (45-60 grams) • Women: 2-3 carb choices per meal (30-45 grams)

Snacks: 1-2 carb choices per meal (15-30 grams)

Each carbohydrate food below =1 carb choice (or 15 grams of carbohydrate), “the magic number”

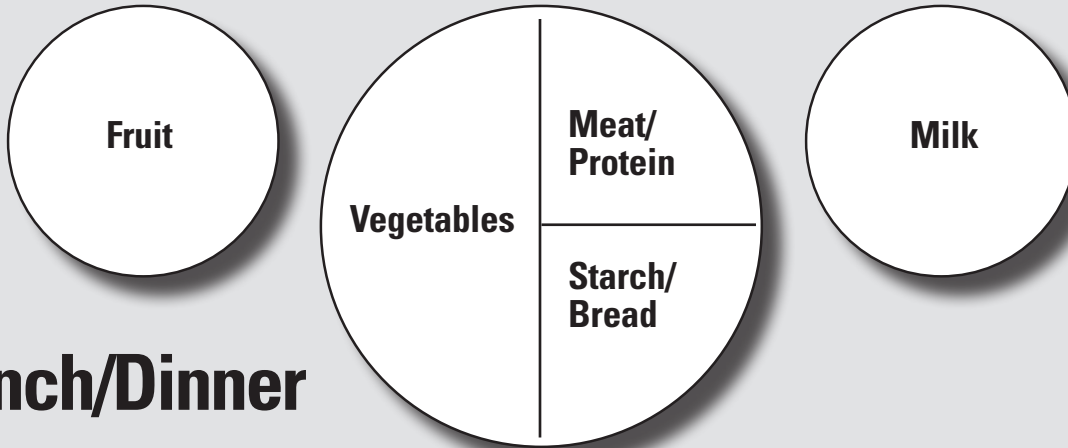
Starches/Breads	Amount	Milk	
Bread or bread products	1 slice (1 oz.)	White Milk	
Cooked Cereals (oatmeal)	1/2 cup	(1% or skim is best choice)	1 cup (8 oz.)
Dry, Sweetened Cereals	1/2 cup	Chocolate Milk	1/2 cup
Dry, Unsweetened Cereals	3/4 cup	Yogurt, made with	
Rice or Pasta, Cooked	1/3 cup	artificial sweetener (lite)	6 oz carton
Snack-type foods		Sweets	
(chips, pretzels)	3/4 - 1 oz.	Cake, Brownie, Nut Bread	2 in. cube (1 oz.)
Starchy Vegetables:		Cookies	2 small
corn, peas,		Ice Cream	1/2 cup
brown beans,	1/2 cup cooked or	Pie, fruit, 2 crust	1” wedge
or mashed potatoes	3oz baked potato	Pudding, regular	1/4 cup
Crackers	6	Pudding, sugar free	1/2 cup
Tortilla (6” flour or corn)	1	Sugar, Jelly, Honey, Syrup	1 tbsp
Fruit:		Eating Out	
Banana	1/2	Burrito, Chicken/Beef	1 carb
Fruit, fresh-small	1 piece (4 oz.)	Burrito, Bean	2 carbs
Fruit, canned, in own juice	1/2 cup	French Fries, Small	2 carbs
Fresh fruits (melon), cubed	1 cup	French Fries, Medium	4 carbs
Fruit, juice, unsweetened	1/2 cup	Hamburger, Small	2 carbs
Fruit, dried	2 tbsp	Pizza, 1 small piece-thin crust	1 carb
Grapes	15	Combination Foods	
Fresh berries	1 cup	1 cup soup	1 carb
		1 cup casserole	2 carb

Half of your plate should come from these non-starchy vegetables: These are “free” foods & do not need to be counted as carbohydrate servings unless eaten in very large amounts.

Artichokes	Carrots	Onions	Tomatoes, canned
Asparagus	Cauliflower	Pea pods (snow peas)	Tomato juice
Beans (green, wax)	Celery	Peppers (all types)	Tomato sauce
Bean sprouts	Cucumber	Radishes	Turnips
Beets	Eggplant	Salad greens (all types)	Water chestnuts
Broccoli	Leeks	Spinach Greens (any type)	Zucchini
Brussels Sprouts	Mushrooms	Summer Squash	
Cabbage	Okra	Tomatoes	



Balance Your Plate



Lunch/Dinner

Balanced plate for balanced blood sugars:

- Divide your plate as in picture
- Place free non-starchy vegetables on 1/2 plate
- Add “palm of hand” sized meat portion on 1/4 plate
- Rest of plate comes from carbs: a fruit serving, 8 oz milk, and a bread or starch serving
- If you have a sweet, omit the fruit and milk at that meal

Your healthy eating plan includes _____ carb choices (_____ grams) per meal and _____ choices (_____ grams) per snack.

Healthy eating when you have diabetes involves more than counting carbohydrates. The plate method shows the food groups and the suggested number of servings for good nutrition. Other healthy eating tips include:

- Eat slower to feel more satisfied (take 15-20 minutes to eat a meal)
- Eat smaller portions of food if weight loss is a goal
- Eat a meal or snack every 4 waking hours
- Eat a meal or snack within 2 hours after waking up
- Choose whole grain products more often (whole wheat bread, brown rice)
- Eat fruit as a dessert
- Choose low fat animal products (skim milk, lean meat, lite cheese, lowfat ice cream)
- Cut out all juice-type beverages and regular sodas
- Move more often! Activity helps to lower blood sugar and burn fat

Healthy Snacks:

- 3 cups popcorn
- Small piece of fruit
- 12 ounces V8
- 5 Triscuits & slice of lowfat cheese
- Raw veggies with one tablespoon dip
- Lite yogurt
- 1/2 sandwich
- 2 tablespoon raisins & 6 almonds
- Fat free pudding cup
- Small granola bar

How to Read a Nutrition Facts Label

(Remember, the magic number is “15” grams for one carb choice)

Look at the **SERVING SIZE FIRST!** (how many servings in the package?)

1. Check out the calories – if weight loss is a goal.
2. Look at the carbohydrates in “grams”. Ignore the sugar grams! Sugar is a part of the total carbohydrate. Use the “Cheat Chart” to count your carb choices.

1 carb choice = 15 grams

2 carb choices = 30 grams

3 carb choices = 45 grams

3. Fiber Rule: Subtract 1/2 of the fiber from the total carbohydrate if more than 5 grams of fiber

Nutrition Facts	
Serving Size: 2 Tbsp. (34g)	
Servings per container: 7	
<hr/>	
Amount per serving	
Calories 150	Calories from Fat 30
% Daily Value*	
Total Fat 3.5g	5%
Saturated Fat 0.5g	3%
Trans Fat 0g	0%
Cholesterol 0mg	0%
Sodium 210mg	9%
Total Carbohydrate 26g	9%
Sugars 13g	
Fiber 3g	5%
Protein 3g	
<hr/>	
Calcium 10%	Iron 6%
Vitamin E 2%	
Not a significant source of Vitamin A and Vitamin C	
*Percent Daily Values are based on a 2,000 calorie diet	

Cheat Chart for Carb Counting!	
Grams	Choices
5 or less	Free
6-10	1/2
11-20	1
21-25	1 1/2
26-35	2
36-40	2 1/2
41-50	3
51-55	3 1/2
56-65	4
66-70	4 1/2
71-80	5

Guidelines for blood cholesterol & blood pressure control:

SATURATED FAT:

- Ladies: Eat less than 12 grams/day • Gentlemen: Eat less than 15 grams/day

Trans Fat: 0g

SODIUM:

Keep sodium intake less than 1,500 mg per day.

A single serving of food should have less than 300 mg of sodium per serving.

Main dish foods should be less than 600 mg of sodium.

Diabetes Pills

Circle your oral diabetes pills. Are you taking them at the right time?

Name of Drug	Brand Name & Daily Dosage	When to Take	Precautions
Glyburide	Diabeta (1.25-20mg) Micronase (1.25-20mg) Glynase (0.75-12mg)	Take prior to or with a meal (ideally 30 minutes before).	May cause low blood sugar.
Glipizide	Glucotrol (2.5-40mg) Glucotrol XL (5-20mg)	Take 30 minutes before a meal. Take once a day, with first meal.	May cause low blood sugar.
Glimepiride	Amaryl (1-8mg)	Take once a day, with first meal.	May cause low blood sugar.
Metformin	Glucophage (500-2550mg)	Take with meals.	Not recommended if on medication for severe congestive heart failure or if creatinine (kidney test) is elevated.
Metformin-Extended Release	Glucophage XR (500-2000mg) Fortamet (500-2500mg) Glumetza (500-2000mg)	Usually taken with evening meal.	
Metformin/Glipizide Combination	Metaglip (2.5-250mg) (2.5-500mg), (5-500mg)	Take with meals.	See Metformin and Glipizide precautions.
Metformin/Glyburide Combination	Glucovance (1.25-250mg) (2.5-500mg) (5-500mg)	Take with meals.	Not recommended if on medication for severe congestive heart failure or if creatinine (kidney test) is elevated. May cause low blood sugar.
	Actoplus Met (15/500mg) (15/850mg)	Take with meals.	Not recommended if on medication for severe congestive heart failure or if creatinine (kidney test) is elevated.
Pioglitazone	Actos (15-45mg)	Take with or without meals	Call the doctor if you notice new swelling, shortness of breath, or rapid weight gain.
Sitagliptin	Januvia (25-100mg)	Take with or without meals usually once daily	Talk to your doctor if you have kidney problems.
Saxagliptin	Onglyza (2.5 & 5mg)	Take with or without meals usually once daily	Talk to your doctor if you have kidney problems.
Linagliptin	Tradjenta (5mg)	Take with or without meals usually once daily	
Saxagliptin & Metformin XR	Kombiglyze XR (5/500, 5/1000, 2.5/1000, 5/1000)	Take with or without meals usually once daily	Talk to your doctor if you have kidney problems.
Sitagliptin & Metformin	Janumet 50/500 50/1000	Take with meals	Talk to your doctor if you have kidney problems.
Canagliflozin	Invokana (100-300mg)	Take before first meal of the day	Talk to your doctor if you have kidney problems.

Insulin Information

Type of Insulin	Insulin Onset/ Peak Time	When to Take	Comments
Apidra (Glulisine)	onset 10-20 mins peaks in about 55 mins duration 2-2 1/2 hrs	Take 0-15 minutes before meal or up to 15 mins. after the start of the meal.	Don't delay your meal. Store under 77° F
Humalog (Lispro)	onset 10-15 mins • peak 20-90 mins duration 2-4 hrs	Take 0-15 minutes before meals.	Don't delay your meal.
Novolog (Aspart)	onset 10-20 mins • peak 1-3 hours duration 3-5 hrs	Take 0-15 minutes before meals.	Don't delay your meal.
R (Regular)	onset 30 mins • peak 2-4 hrs duration 6-8 hrs	Take 30 minutes before meals.	
N(NPH)	onset 1-2 hours • peak 6-10 hrs duration 12-16 hrs	Take at bedtime or as directed by your doctor.	Roll 20 times before drawing up.
Lantus (Glargine)	onset 2 hours • no peak duration 24 hrs	Once a day - usually at bedtime.	Do not mix with any other insulin.
Levemir (Detemir)	onset 1 hr • no peak duration 24 hrs	Once or twice daily.	Do not mix with any other insulin.
N + R Mix (Draw up R first, then N)		Take 30 minutes before meals. Breakfast & supper.	Eat a bedtime snack. Roll 20 times before drawing up.
70/30 (A pre-mix of 70% N and 30% R)		Take 30 minutes before meals. Breakfast & supper.	Eat a bedtime snack. Roll 20 times before drawing up.
75/25 (A pre-mix of 75% NPL and 25% H)		Take 0-15 minutes before meals. Breakfast & supper.	Eat a bedtime snack. Roll 20 times before drawing up.
Novolog 70/30 (Pre-mix of 70% Protamine Suspension like NPH and 30% Novolog)		Take 0-15 minutes before meals. Breakfast & supper.	Eat a bedtime snack. Roll 20 times before drawing up.

New Injectable Drugs for Diabetes (Non-Insulin)

Byetta (exenatide) (used in type 2 diabetes)	Stimulates the release of insulin after meals.	Take within 60 min of start of morning and evening meal.	If abdominal pain or vomiting occur, call your doctor.
Victoza (liraglutide) (used in type 2 diabetes)	Promotes insulin release only when blood glucose is elevated.	Take once daily, at any time, with or without food.	If abdominal pain or vomiting occur, call your doctor.
Symlin (pramlintide) (used in type 1 and type 2 diabetes - insulin requiring)	Slow rate of stomach emptying; reduces appetite.	Taken with meals or snacks with 250 calories or 30 grams of carbs.	May cause low blood sugar and important to treat with glucose tablets.
Bydureon	Stimulates the release of insulin after meals.	Take once a week, same time and day.	If abdominal pain or vomiting occur, call your doctor.

Insulin Tips

Insulin Administration

- Store unopened insulin vials and pens in refrigerator (34°-64°) until expiration date.
- Most insulin will spoil if it gets above 86° or freezes below 34°. Do not use if frozen.
- If clumps are seen sticking to sides of the insulin bottle, discard it. If a clear insulin gets cloudy discard it. When opening a fresh vial or pen, write the date you opened it on the pen/vial.
- Before each injection, wash your hands with soap and clean the injection site with alcohol. The top of the insulin vial or pen should be wiped with alcohol too. Insulin may be injected into the subcutaneous tissue (the “flab” under the skin, not the muscle) of the abdomen, the back of the arm, outside of the thigh, or the buttocks. The abdomen has the fastest rate of absorption and can be used all the time as long as the 2 inch area around the navel is avoided as well as scars.
- Insulin pens are not to be shared.
- Do not reuse pen needles or insulin syringes



What does Oklahoma State law say about throwing away lancets and syringes?

OKLAHOMA STATE LAW (Syringe & Lancet Disposal - Title 252, Oklahoma Statute) says:

- Always keep your “sharps” container out of the reach of children.
- Never throw loose “sharps” (syringes, lancets) in the trash.
- Always put “sharps” in a resealable container such as a coffee can, bleach bottle, or liquid detergent bottle.
- When the container is full, fill with Plaster of Paris or concrete, add water and shake. This will solidify or encapsulate the needles into a solid mass. This will reduce the possibility of re-use or innocent people getting stuck with needles thrown in the trash.

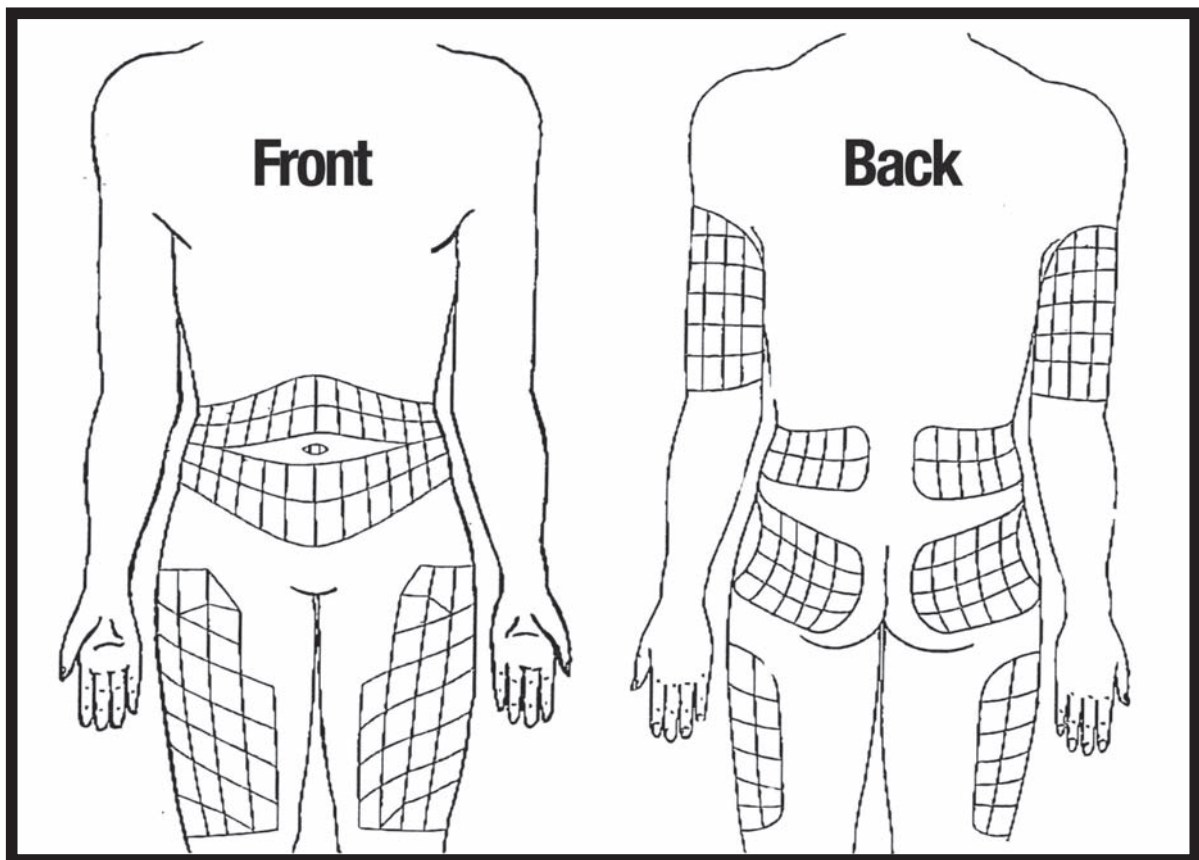
Each county may have individual statutes regarding the disposal of “sharps” -

Find out what is legal in YOUR county by calling City Hall or the health department.

Suitable Insulin Injection Sites

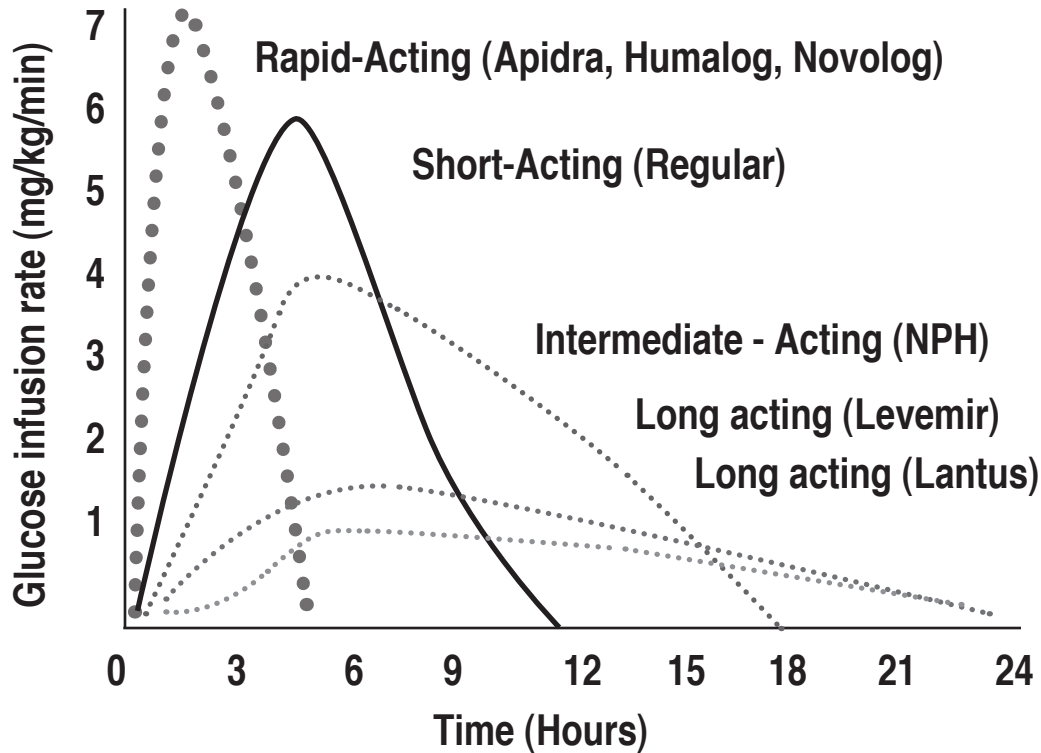
What are suitable sites?

- Areas of the tummy-above, below and to the side of the “belly button” where you can pinch an inch
- Front or outer aspect of both thighs
- Upper outer area of buttocks
- Outer and rear surfaces of upper arms
- Rotate sites at least one inch from previous injection site







6/21/2013

Activity Profiles of Different Types of Insulin



My Insulin Schedule

Insulin #1	_____	Vial or Pen	Vial or Pen
Insulin #2	_____	Vial or Pen	Vial or Pen
	_____ am	_____	_____
		Units	Units
	_____ pm	_____	_____
		Units	Units
	_____ pm	_____	_____
		Units	Units
	_____ pm	_____	_____
		Units	Units

Unopened Insulin Vial and Insulin Pen Storage

- Insulin Vials & Pens - refrigerate unopened. Do not use if frozen (34-46°F).
- DO NOT REFRIGERATE opened pens. Instead, keep opened pens in cool area (59-86°).
- Novolin/Humulin N, Novolog 70/30, Humalog 75/25, Humalog 50/50 and Novolin 70/30 should be gently turned up & down 10 to 20 times before administering insulin.

VIALS	Refrigerated unopened	At room temperature after opened (59-86°)
Humulin R	Until expire date	Discard in 31 days
Novolin R	Until expire date	Discard in 42 days
Novolin N	Until expire date	Discard in 42 days
Novolin 70/30	Until expire date	Discard in 42 days
Humalog	Until expire date	Discard in 28 days
Humalog 75/25	Until expire date	Discard in 28 days
Humalog 50/50	Until expire date	Discard in 28 days
Novolog	Until expire date	Discard in 28 days
Novolog 70/30	Until expire date	Discard in 28 days
Apidra	Until expire date	Discard in 28 days
Lantus	Until expire date	Discard in 28 days
Levemir	Until expire date	Discard in 42 days

Pens	Refrigerated unopened	At room temperature after opened (59-86°)
Novolin R	Until expire date	Discard in 28 days
Novolin 70/30	Until expire date	Discard in 10 days
Humalog	Until expire date	Discard in 28 days
Humalog 75/25	Until expire date	Discard in 10 days
Humalog 50/50	Until expire date	Discard in 10 days
Novolog	Until expire date	Discard in 28 days
Novolog 70/30	Until expire date	Discard in 14 days
Apidra	Until expire date	Discard in 28 days
Lantus	Until expire date	Discard in 28 days
Levemir	Until expire date	Discard in 42 days

The ABC's of the Standards of Care

(American Diabetes Association)

A	<ul style="list-style-type: none"> • Aspirin a day (check with doctor first!) • Albumin: check for microalbumin yearly for kidney function • Alc: every 3-6 months; goal: under 6.5 - 7.0 %
B	<ul style="list-style-type: none"> • Blood Pressure under 130/80 every visit
C	<ul style="list-style-type: none"> • Check cholesterol and other lipid levels yearly. See page 3 • Cardiovascular: Yearly ECG; Risk factor modification (i.e. smoking cessation, medication adjustment...) • Creatinine for kidney function
D	<ul style="list-style-type: none"> • Dental: twice daily brushing and daily flossing; dental exam/cleaning every 6 months • Dietary plan: updated meal plan or nutrition education refresher yearly • Doctor Visits: every 3-6 months (to help stay in control of your diabetes!)
E	<ul style="list-style-type: none"> • Eye exam: dilated pupil exam yearly • Exercise/activity: at least 30 minutes every day or most days of the week • Education: diabetes self management training with a diabetes educator
F	<ul style="list-style-type: none"> • Feet: Daily foot check, comprehensive foot exam yearly by a doctor and podiatry referral as needed • Flu: influenza immunization yearly and pneumococcal immunization once before age 65 and once after age 65, unless doctor specifies every 5 years; sick day education
G	<ul style="list-style-type: none"> • Glucose: check blood sugars daily and record in logbook • Glycemic goals: fasting BS and pre-meals: 70-130; 2 hr post meals or peak: 180 or lower; bedtime: 100-140 • GOAL setting: keep working on making healthy changes!
H	<ul style="list-style-type: none"> • HOPE! There is life after diagnosis of diabetes! Diabetes magazines, websites, support groups, continuing education, family support, your diabetes educator!

6/21/2013

Blood Glucose Monitoring

(Checking Your Blood Sugars)

High blood sugars over a long period of time can damage the body, even if you feel “okay”. Some people have no symptoms of high blood sugars. Checking blood sugars every day will help keep you on track. It will tell you:

- What happens to your blood sugar level when you are sick or ill.
- What happens to your blood sugar when you eat certain foods (compare regular soda to diet soda!)
- If your diabetes medications need adjusting, or if you NEED to start on diabetes medication.
- If stress or pain is causing your blood sugars to rise, or if you need to treat for a high or low blood sugar.

Checking your blood sugars every day helps you to make daily changes (in food, activity, stress management and medications) to stay healthy and feeling good!

How should I check my blood sugar?

Glucose meters are used to check blood sugars. There are many different kinds of meters. It is important to follow the instructions that come with the meter you purchase. **It is best if a diabetes educator, or someone familiar with checking blood sugars can show you how to do this.** If you have difficulty using the meter, call the 1-800# on the back of the meter for assistance. The meter manufacturers have 24-hour/7 day a week service. Some important things to remember:

- Before checking blood sugars, wash hands in warm, soapy water. It is not necessary to use alcohol on the fingers.
- Code your meter properly (if applicable).
- You must use strips that work in your meter.
- Strips for one brand of meter cannot be used in another brand.
- Prick the sides of your fingers, not the tips. There are less nerve endings on the sides of the finger, so it is less painful.
- Make sure there is enough blood on the strip.
- Change your lancet (the “finger poker”) after 2-3 blood sugar checks. The needles get dull with use and may hurt more. Do not wipe off the lancet.
- Keep a written record of your blood sugars, including WHEN they were taken (such as BEFORE eating or AFTER eating).
- Place used needles (“sharps”) in a hard plastic container (bleach bottle or coffee can) before throwing them in the trash. It’s the law!
- Do not use “alternate site test” on the arm or other body site (available on some meters) if you think you are having a low blood sugar reaction (Hypoglycemia). If you plan to use alternate sites (arm, leg, etc.) please consult your healthcare professional as there are other times that require that you use the finger.

When should I check my blood sugar?

When to check blood sugars depends on the diabetes medication you use, the type of insulin, your work schedule and your eating schedule. Your doctor or diabetes educator will help you learn when to check based on your individual needs.

Some basic guidelines for WHEN to check blood sugars are:

- In the morning - BEFORE you eat or drink anything (fasting)
- BEFORE lunch or dinner, or any other main meal
- 1-2 hours AFTER the start of a meal
- Before you go to bed
- At 2 or 3 a.m. (if you are on some types of insulin)

“Checkerboard” when you check your blood sugars - don’t check the same time every day, year in and year out! If you only check one time a day, on one day, check a fasting blood sugar; the next day, check a post meal blood sugar, etc. This will give you an overall idea of how your blood sugar control is throughout the day. Of course, always follow your physician’s guidelines, especially if you are taking insulin.

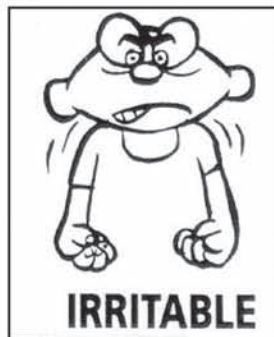
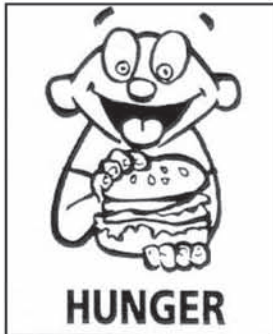
Hypoglycemia (Low Blood Glucose)

Below 70

Causes : Delayed meal, too little food, too much insulin or diabetes medicine, extra activity or alcohol on an empty stomach

Onset : Sudden, may progress to insulin shock.

SYMPTOMS



C2007 Novo Nordisk
Pharmaceuticals, Inc.

WHAT CAN YOU DO?

Have 1/2 cup
juice or regular
soda, or 1 cup
milk, 3 hard
candies or 3-4
glucose tablets.



Wait 15 minutes,
test glucose. If
symptoms persist
or glucose < 70,
repeat juice, pop,
or candy.

Then have a
light snack (1/2
peanut butter or
meat sandwich)
and 1 cup milk
if > 1 hour to
next meal.



Hypoglycemia and How to Treat

What is hypoglycemia? (hint: hypo means “low”)

Hypoglycemia or low blood sugar is defined as a blood glucose level below 70.

The most common causes of low blood sugar are:

- Missing or delaying a meal
- Too much insulin or diabetes medication
- More activity or exercise than you normally do
- Drinking alcohol on an empty stomach

What are the symptoms of hypoglycemia (low blood sugar)?

Shakiness	Sweating
Fast Heartbeat	Dizziness
Blurred Vision	Hunger
Headache	Fatigue/Weakness
Irritability	Confusion



What should I do if I am having symptoms?

1. Check your blood glucose level.
2. If your blood sugar is below 70 follow the **“15/15 Rule”**
3. The **15/15 Rule**-Eat 15 grams of carbohydrate (see items below).
4. Sip a glass of water and wait 15 minutes.

3-4 glucose tablets	3 hard candies (chewed quickly)
1/2 cup of regular soda (4 oz.)	6-7 Lifesavers (chewed quickly)
1 cup skim milk	2 TB raisins
1/2 cup of fruit juice (4oz)	1 TB jelly, honey or sugar

5. Re-check your blood glucose level.
6. If blood glucose remains below 70 mg/dl, repeat the **“15/15 Rule”**.
7. Eat a small snack if it will be more than one hour before your next meal.

Snack Options

- 1/2 sandwich
- Piece of fruit
- Six crackers
- Light yogurt
- 1 cup of milk
- 1/2 cup of cereal with 1/2 cup skim milk

NOTE: If you take Precose or Glyset, use glucose tablets to treat lows.

It's the law in Oklahoma - when you drive and if you have diabetes on your license, you must carry a “quick sugar” snack with you.

HYPERGLYCEMIA

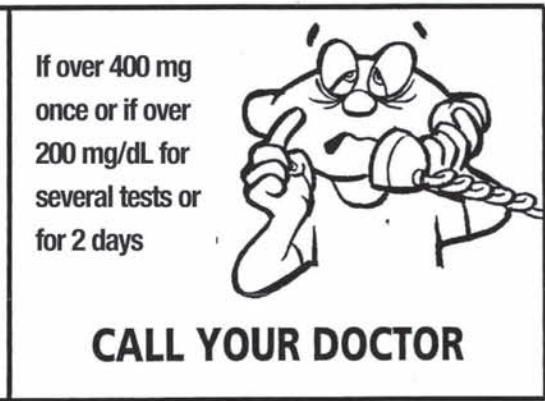
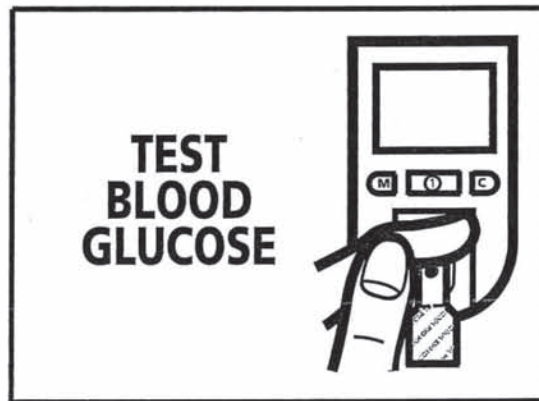
(High Blood Glucose over 200 mg/dl)

Causes: Too much food, too little insulin or diabetes medicine, illness, stress, steroids, pain, surgery and infections.

Onset: Gradual, may progress to diabetic coma



SYMPTOMS



Your Sick Day Plan

“Sick” means having a cold, fever, flu, nausea, vomiting and/or diarrhea. The stress hormones released during illness cause the liver to release glucose from stored carbohydrates (glycogen). The increase in blood sugar is a normal physiological response during illness or infection. However, if there is a lack of insulin, or if insulin resistance is present, blood glucose levels may remain elevated in persons with diabetes. High blood sugars can prolong illness and healing time. Insulin may be necessary to control blood sugar during illness. If you are sick and have type 1 diabetes, purchase ketosticks at the pharmacy and use as directed on the label.

Sick Day Guidelines:

- Usually it is recommended that you take your insulin or diabetes pill, but “let your meter be your guide.” The doctor may tell you to increase your insulin dose during illness.
- Check blood sugars more often when sick (FOUR OR MORE times a day).
- Drink 8 oz. of calorie-free, caffeine-free liquid (water, diet soda, broth) every hour to avoid dehydration.
- In type 1 diabetes, check ketones every time you urinate until ketones are negative.
- If solid foods can’t be tolerated, replace them with liquid carbohydrates or soft food. (See the list below.)



When to call the doctor:

- Vomiting, diarrhea or abdominal pain for more than 6 hours.
- Blood glucose is over 240 mg/dL for 24 hours or is over 400 one time.
- **With type 1 diabetes, check your urine for ketones and report to your doctor if they are moderate or large.**
- You are unable to keep medicine down, or you are unsure what to do.
- Fever of 101 for two days or more
- **Chest pain or difficulty breathing - Call 911 first, not your doctor.**

Foods that contain carbohydrate: (15 grams equals one carb choice)

- 1/2 cup apple juice, 1/2 cup regular caffeine-free soft drink (non-diet), 1 cup chicken noodle soup, one popsicle stick, 5 hard candies, 1 slice toast, 1/2 cup cooked cereal, 6 saltines or 1/3 cup sports drink beverage.

Sample Sick Day Menu: (If you can’t eat regular meals)

Time	Food	Carb Content
8:00 am	1-2 slices toast or 6 crackers	15-30 gms
Spread throughout the morning	4-8 oz sugar-containing soft drink (no caffeine)	15-30 gms
Noon	1 cup soup with noodles or rice 6 saltine crackers 1/2 cup juice	15 gms 15 gms 15 gms
Spread throughout the afternoon	4-8 oz sugar-containing soft drink (no caffeine)	15-30 gms
6:00 pm	1/2 cup regular gelatin 1 cup soup and/or 6 crackers	15 gms 15 gms 15 gms
Spread throughout the evening	4-8 oz sugar-containing soft drink (no caffeine)	15-30 gms

Preventing Diabetic Ketoacidosis (DKA)

What is DKA?

Diabetic Ketoacidosis (DKA) is a condition where ketones build up in the blood. Ketones are acids produced by the body when the body is breaking down fat for energy, due to lack of insulin.

If a person wears a pump, DKA can develop rapidly (4-8 hours) since the insulin pump uses only short acting insulin. If not treated immediately, DKA can cause coma and even death.

CAUSES of DKA

- Missing doses of insulin
- Insulin not potent
- Illness (flu), stress, or infections that cause high blood sugar and increased insulin requirements

SIGNS & SYMPTOMS of DKA

- Nausea and Vomiting
- Flu-like symptoms
- Thirst and frequent urination
- Difficulty breathing
- Fruity-smelling breath (ketones cause this)
- Rapid heart beat
- Fatigue
- High blood sugar



What Should I Do?

If you have ketones and your blood sugar is above 250/mgdl:

- Take your insulin correction bolus by syringe every 2 to 3 hours until your blood sugar reaches your target level
- Drink at least eight ounces of calorie-free liquids every 30 minutes to avoid dehydration (water, diet beverages, broth, etc).
- Contact your physician for more specific guidelines. Check your blood sugar and ketones every hour until ketones are negative.
- Call your physician immediately if your blood sugar and ketones are not decreasing, if you are unable to drink fluids, or if you are vomiting or have diarrhea.

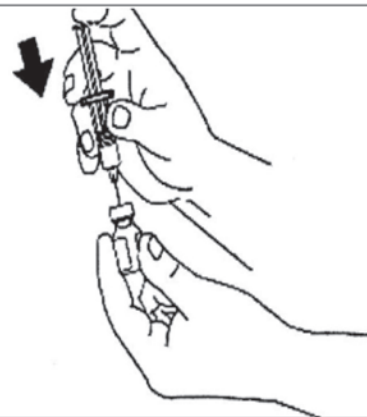
If you have ketones, but your blood sugar is less than 200 mg/dl:

- You still need extra insulin to clear the ketones.
- Drink liquids with carbohydrates now (juice, milk, regular soda) instead of sugar free beverages to protect you from getting too low. See your "Sick Day Guidelines" for examples.
- Continue taking your insulin correction bolus every 3 hours and check blood sugar and ketones until ketones are normal.
- Call your physician if you have any questions.

Special Information for Persons with Type 1 Diabetes or Slender Persons with Type 2 Diabetes requiring Insulin

Glucagon is a medication that can be given by injection when the blood sugar is so low that a person cannot swallow or is unconscious. It can be given subcutaneously with an insulin syringe. A person cannot overdose on this. The medication stimulates the liver to send glucose into the blood stream. The person should be turned on his/her side in case of vomiting. When the person regains consciousness, follow the guidelines for treating low blood glucose.

Caution: Glucagon Kit has an expiration date.



Why Be More Active??

My blood sugars are lower!
 I lowered my blood pressure!
 I lost weight!
 My insulin works better!

My cholesterol is lower!
 I have more energy!
 I can do more things!
 I just feel better!

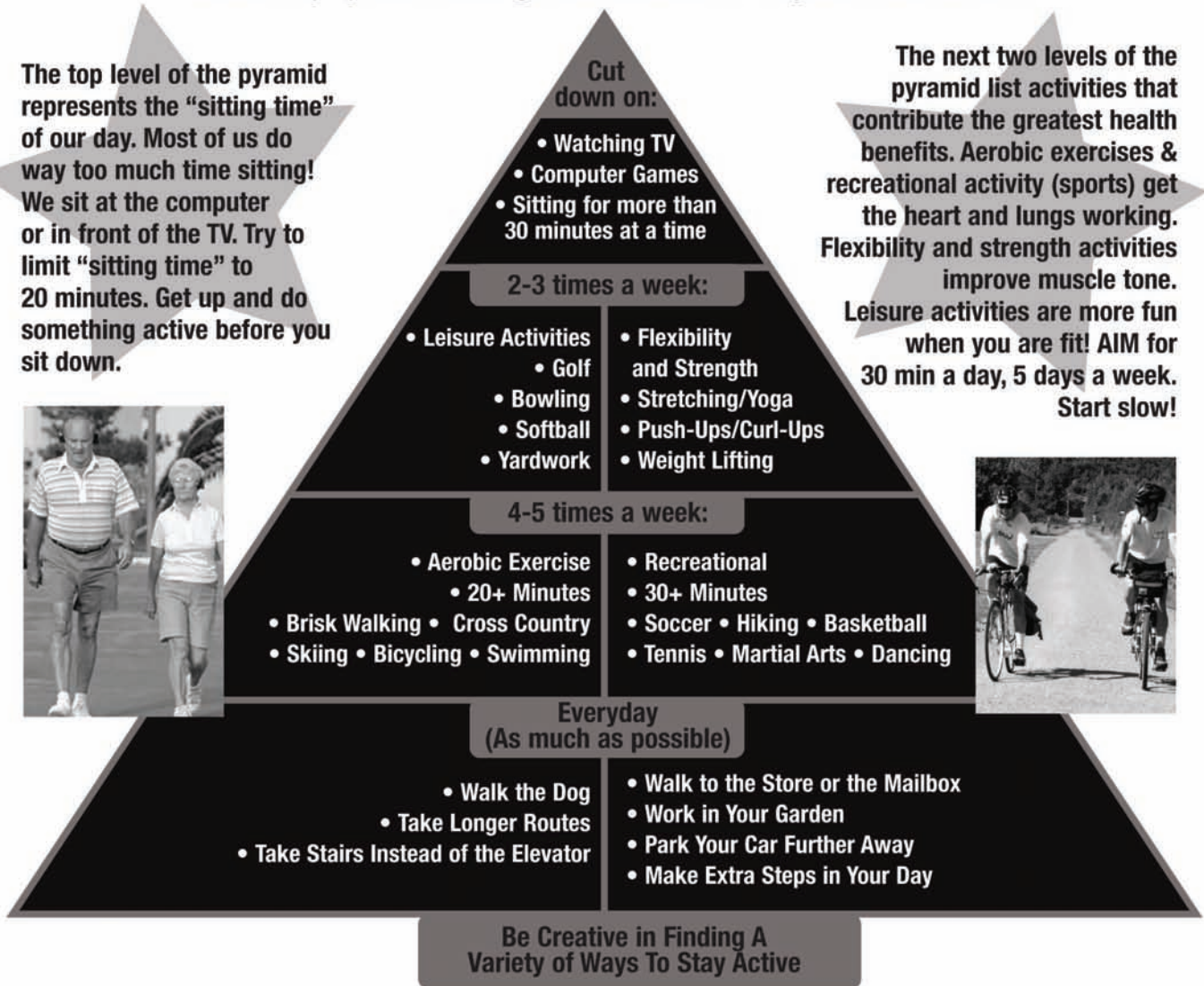
I lost a dress/pant size!
 I have less stress/anxiety!
 I have maintained my weight loss!
 I just sleep better!

**Exercise doesn't need to be hard or time consuming to be good for you!
 Thirty minutes of activity, five days a week, can help most people.**

The Activity Pyramid below gives some ideas of ways to be more active.

The top level of the pyramid represents the "sitting time" of our day. Most of us do way too much time sitting! We sit at the computer or in front of the TV. Try to limit "sitting time" to 20 minutes. Get up and do something active before you sit down.

The next two levels of the pyramid list activities that contribute the greatest health benefits. Aerobic exercises & recreational activity (sports) get the heart and lungs working. Flexibility and strength activities improve muscle tone. Leisure activities are more fun when you are fit! AIM for 30 min a day, 5 days a week. Start slow!

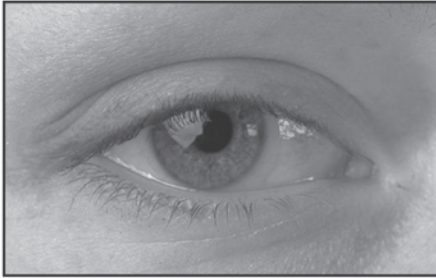


The base of the pyramid lists things we do during a typical day.

Help Yourself...

Prevent the Complications from Diabetes

Diabetes can Affect All of These Body Parts

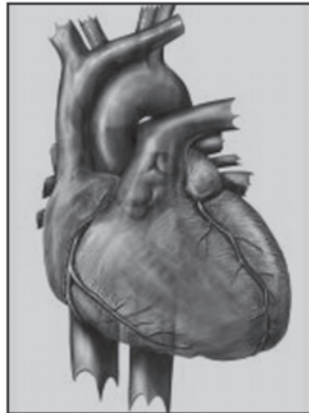


EYE

Report sudden changes in vision

Recommendations:

- Have your dilated eye exam annually, as there may be no early warning signs of damage
- Control blood sugar
- Control blood pressure
- Avoid tobacco use



HEART

Report chest pain and/or shortness of breath immediately

Recommendations:

- Control blood sugar
- Control cholesterol level and have cholesterol checked yearly
- Control blood pressure
- Avoid tobacco use
- Exercise as directed



KIDNEY

Recommendations:

- Control blood sugar
- Control blood pressure
- Some blood pressure medications are prescribed to protect the kidneys even if you do not have high blood pressure
- Avoid tobacco use
- Ask your doctor about a microalbumin screening annually for early detection of damage when it is most treatable.

FOOT

Report pain numbness and/or any wounds that do not heal within 24 hours

Recommendations:

- Examine feet daily
- Control blood sugar
- Control blood pressure
- Avoid tobacco use



FREE SMOKING CESSATION ASSISTANCE : OKLAHOMA TOBACCO HELPLINE:

TOLL-FREE 1-800-QUITNOW • 1-800-784-8669

SPECIFIC RECOMMENDATIONS

Foot Care and Diabetes

Nerve and circulatory damage from high blood sugars & high blood pressure can affect the feet or hands and is called peripheral neuropathy (PN). This can make feet less able to feel pain, heat or cold or make them more sensitive to pain, touch, heat or cold. Skin dryness or cracking increases the risk of infection. Ulcers (open sores) are more common. Even painless wounds may heal more slowly and are more likely to become infected. If an infection develops and isn't treated, removal (amputation) of the affected part may be needed. **Daily foot care CAN help prevent this severe complication.**

DO THIS EVERYDAY:

- **Check your feet, using a mirror or the help of a friend or family member**
- Check between the toes, looking for:
 - Skin color **CHANGES** (redness)
 - Ingrown or fungal toenails
 - Corns, calluses or blisters
 - Swelling of foot or ankle
 - Open sores or scratches
 - Cracks in the skin
 - Hot or cold spots
- Wash your feet daily with mild soap and dry them gently, especially between the toes.

DO THESE THINGS:

- Wear only comfortable, supportive shoes with clean socks. Allow for plenty of room in the toe box. Replace shoes every 6-9 months.
- **STOP SMOKING!**
- Have your doctor examine your feet at every visit.
- Cut your toenails straight across and use a file on the rough edges.
- Use moisturizer cream on feet and legs but not between the toes.
- **CALL** your doctor immediately if you recognize any foot problems. **DON'T WAIT!**
- If you have a history of foot problems, consider seeing a specialist (podiatrist).

DO NOT DO THESE THINGS:

- **Never wear a shoe that irritates your feet.**
- No flip flops or open sandals (Feet need protection. Shoes or slippers should have a hard surface or bottom.)
- Don't put your feet in hot water (such as hot tubs or when getting a pedicure). First, check the water temperature with your hand, elbow or thermometer.
- Don't soak your feet for extended periods of time (longer than 5-10 minutes). Soaking can actually worsen dryness and cracking and spread infection.
- **Never go barefoot**, especially if you have lost some feeling in your feet.
- Avoid high heels, narrow cowboy boots, or open toed sandals.
- Never rip off a toenail or perform "home surgery" with razor blades, pen knives, sand paper, pliers, dog clippers, or power tools.
- Avoid using heating pads, electric blankets or microwave devices as they can cause burns to feet.



Look at feet daily for open sore, cuts or color changes



Allow plenty of room for toes in your shoes.



Have your feet checked by a doctor



Cut toenails straight across.

Internet and Other Resources

General Diabetes Information:

American Diabetes Association:

6600 South Yale Avenue, Suite 1310, Tulsa, OK 74136 or call 918-492-3839 or 1-800-342-2383.

Web site: www.diabetes.org

Call 1-800-806-7801 or go to www.diabetes.org/membership to join or to inquire about Diabetes Forecast subscription.

Juvenile Diabetes Research

Foundation: 7030 South Yale Avenue, Suite 109, Tulsa, OK 74136. Call 918-481-5807 or 1-800-533-2873 for more information.

Cookbooks:

Call the **American Diabetes Association** at 1-800-232-6733 for a cookbook catalogue or to go online at <http://store.diabetes.org>

Sexual Function Resources for Men:

Impotency Information Line:

1-800-227-5517,

www.smc1@usit.net

American Foundation for Urologic Disease, Inc. (AFUD):

1-800-242-2383 or 1-800-242-2384, www.afud.org

Impotence World Association Information on Impotence

Anonymous and I-Anon Chapters:

1-800-669-1603

American Cancer Society Man to Man Resources

for Prostate Patients:

1-800-227-2345

Kidney Disease Information:

National Kidney Foundation:

30 East 33 St., New York, NY 10016 or call 212-889-2210 or go online at www.kidney.org

American Association of Kidney

Patients: 100 S. Ashley Drive, Suite 280, Tampa, FL 33602 or call 1-800-749-2257 or go online at www.aakp.org

Neuropathy Information:

The Neuropathy Association :

60 E. 42nd St., New York, NY 10165. Or call 1-800-247-6968 Web site: www.neuropathy.org

diabeticcooking.com

fbnr.com (favorite name brand recipes)

foodsmart@diabetes.org

dlife.com (10,000 recipes)

d life TV Show every Sunday on CNBC, 6pm CST .

Sexual Function Resources for Men or Women:

Books:

Sex and Diabetes

by Janice Rozsler, RD and Donna Rice, RN

Erection Devices for Men:

Augusta Medical Systems:

1-877-827-8382,

www.augustams.com

ErecAid: 1-800-344-9688,

www.endocare.com

Post-T-Vac: 1-800-627-7434

MUSE: 1-888-367-6873,

www.vivus.com

VED: 1-800-531-3333

Vision Information:

Medicare: Coverage of annual glaucoma screening and medical nutrition therapy.

Call 1-800-MEDICARE (1-800-663-4227)

Visual Services for the Blind:

3010 S. Harvard, Suite 210, Tulsa, OK 74114. Call 918-742-8989 Fax 918-747-5348 or 1-800-829-3255.

National Federation of the Blind:

Call 1-410-659-9314, online at www.nfb.org

Older Blind Program:

Services and help for the blind/low vision. Call 918-742-8989.

Sexual Function Resources for Women:

Books:

For Women Only – A Revolutionary Guide to Reclaiming Your Sex Life, by Berman & Berman (paperback 2001)

Internet Resources:

- www.womenssexualhealth.com, click on "Treatment and Therapy" tab at very top of screen
- www.4woman.gov/fag/urinary.htm
- www.niddk.nih.gov/health/urolog/uibcw/exerc/exerc.htm
- <http://obhyn.uihc.uiowa.edu/patinfo/urogyn/kegel.htm>

