MANAGING YOUR DIABETES

DEFINING DIABETES

Diabetes is a serious condition that occurs when the body does not make enough insulin and/or cannot use insulin well enough to keep the glucose (sugar) in your blood at normal levels. There are three main types of diabetes.

- Type 1 - the body does not make insulin, people need to take insulin every day.

- Type 2 - the body does not use insulin well, people often need to take pills and/or insulin. Type 2 is the most common form of diabetes.

- Gestational Diabetes – occurs when a woman is pregnant, then it goes away but, it raises her risk of getting type 2 Diabetes for the rest of her life.

WHAT CAUSES DIABETES?

Type 1 diabetes - Normally the body's immune system protects the body from infection but in diabetes type 1 it mistakenly attacks it's own cells. Over several years it destroys the cells which produce insulin (Beta cells) in the pancreas. Symptoms of the disease usually develop over a short period of time.

Type 2 diabetes - Caused by a combination of factors, one of these is called insulin resistance. This a condition in which the body's muscle, fat, and liver cells do not use the insulin produced by the body effectively. Other factors are heredity, obesity, and inactivity.

Gestational - Scientists believe gestational diabetes is caused by the hormonal and other changes that occur during pregnancy.

WHERE DOES GLUCOSE COME FROM?

When we eat foods which contain carbohydrates, the body breaks these down into glucose. Glucose is a sugar and it is the body's gasoline.

Foods that contain Carbohydrate are:

Breads, Cereals, Pastries, Pancakes, Rice, Pasta, Tortillas, Beans, Crackers Fruits, Vegetables and Dairy Foods

FOODS THAT CONTAIN CARBOHYDRATES

Starchy vegetables such as corn, potatoes, winter squash, pinto beans, yams

Other foods that will be converted to glucose in the body are all kinds of sugars, candies, honey, syrups, sweetened drinks such as soda, tea, and juices.

ANOTHER SOURCE OF GLUCOSE

The liver both stores and manufactures glucose depending upon the body's need. The need to store or release glucose is signaled by body hormones. When you're not eating – especially overnight or between meals, the body has to make its own sugar. In type 2 diabetics, who suffer from insulin resistance the liver often has a tendency to produce sugar when not really needed.

blood sugar goes down

liver releases glucose

glucose level goes up

INSULIN AND GLUCOSE

Once the body digests carbohydrate foods or the liver produces glucose, the glucose enters the bloodstream (blood glucose). This raise in blood glucose level prompts the pancreas to produce insulin. Insulin also enters the blood stream and helps the glucose enter body tissues where it is used for energy. If insulin is not present or is not being used effectively by the body, the glucose cannot enter the tissues and it remains in the blood causing abnormal glucose levels. Think of it this way:

Insulin = nozzle

Glucose = gasoline

Body tissues = car

TARGET BLOOD GLUCOSE LEVELS

Everyone's blood has some glucose in it. Blood glucose goes up after eating but 1 or 2 hours later it should return to the normal range .

Blood glucose targets for people without Diabetes are:

- Before meals or fasting 70 to 100
- 2 hours after the start of a meal below 140

Blood glucose targets for people with Diabetes are:

- Before meals or fasting 70 to 130
- 1 to 2 hours after the start of a meal below 180

TWO WAYS TO MEASURE BLOOD GLUCOSE

The A1C is a lab test that measures your average blood glucose level over the last 2 to 3 months.
It shows whether your blood glucose stayed close to your target range most of the time or was too high or too low.

The self test you do yourself using a glucometer. It tells you what your glucose level is at that precise moment. It is done 2 to 3 times a day for better control.

TOO HIGH OR TOO LOW

Too high = hyperglycemia , means you don't have enough insulin in your body. It can happen if you miss taking your diabetes medicines, eat too much, or don't get enough exercise. If you're very thirsty and tired, have blurry vision, and have to go to the bathroom often, your blood glucose may be too high. Very high blood glucose may also make you feel sick to your stomach.

Too low = hypoglycemia, low blood glucose can be caused by taking too much diabetes medicine, missing a meal, delaying a meal, exercising more than usual, or drinking alcoholic beverages. Low blood glucose can make you feel weak, confused, irritable, hungry, or tired. You may sweat a lot or get a headache. You may feel shaky.

HIGH BLOOD SUGAR DAMAGES THE BODY

When your blood sugar is not controlled, too much sugar stays in your blood for a long time. High blood sugar may not make you feel sick, but high blood sugar can lead to serious problems over time.

It can cause:

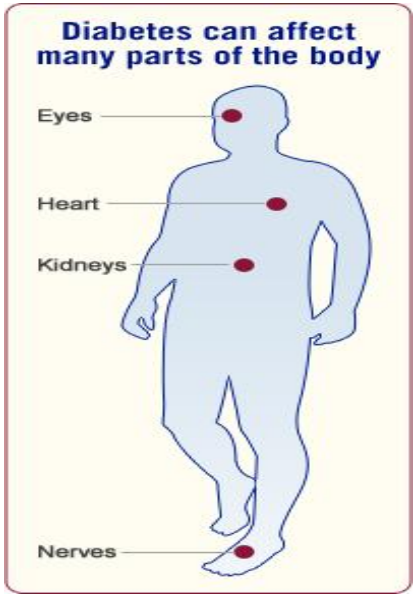
Kidney disease

Blindness

Nerve damage

Heart disease

Foot problems



SIGNS OF DIABETES

- being very thirsty
- urinating often
- feeling very hungry or tired
- losing weight without trying
- having sores that heal slowly
- having dry, itchy skin
- losing the feeling in your feet or having tingling in your feet
- having blurry eyesight

PLANNING MEALS FOR DIABETICS

Eating a variety of healthy foods, and eating at least 3 meals per day with snacks as needed along with exercising regularly and taking your prescribed medications, can help you feel better and stay healthier. Work with your doctor and dietitian to create a meal plan that meets these goals:

- ❑ works with your schedule
- ❑ keeps your weight on track
- ❑ keeps your blood glucose under control
- ❑ improves your blood pressure, and cholesterol numbers.

CARBOHYDRATE COUNTING

Carbohydrate counting, is a meal planning technique for managing your blood glucose levels. By keeping track of how many grams of carbohydrate you eat and setting a limit for your maximum amount to eat, can help to keep your blood glucose levels in your target range. Finding the right amount of carbohydrate depends on many things including how active you are and what, if any, medicines you take. You and your health care team can figure out the right amount for you.

HOW MUCH CARBOHYDRATE IN FOODS?

About 15 grams of carbohydrate in:

1 small piece of fresh fruit

½ cup of unsweetened canned or frozen fruit

1 slice of bread

1 six inch tortilla (corn or flour)

½ cup of oatmeal

1/3 cup of pasta or rice (brown or white)

¾ cup unsweetened dry cereal

4-6 crackers

1 small baked potato

1 cup of milk (low fat or skim)

1 small piece of cornbread

1 biscuit , 1mini bagel or ¼ of a large one

½ cup orange juice

½ small banana

½ English muffin, hamburger or hot dog bun

½ cup of beans or starchy vegetable such as corn, potato or acorn squash

2/3 cup of yogurt (plain or sweetened with sugar substitute)

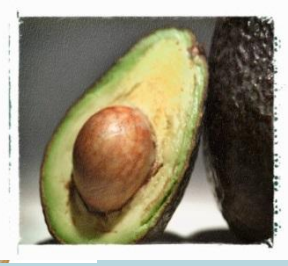
For a more detailed list see attached Carbohydrate Food List.

HOW MUCH CARBOHYDRATE PER DAY?

Most people start with 3 or 4 carb servings (45 to 60 g) at each meal and 1 or 2 carb servings (15 to 30g) for snacks. Your dietitian can help provide the amounts that would be best for you.

Protein and Fat

With carbohydrate counting, it is easy to forget about the protein and fat in meals. Always include a source of protein and fat to balance out your meal. Foods that are considered protein are meat, poultry, eggs, nuts, cheese, fish, shellfish, fats are bacon, butter, sour cream, cream cheese, avocado, oils.



USING FOOD LABELS

Carbohydrate counting is easier when food labels are available. Look at the serving size. All the information on the label is about this serving of food. Look at the total grams of carbohydrate in the serving (includes sugar, starch and fiber) and decide how much of the food you can eat. If you will be eating a larger serving, then you will need to double or triple the information on the label.

SAMPLE MENUS

BREAKFAST	Carb Grams
1/2 cup orange juice	15
2 slices (2 oz.) whole-wheat toast	30
1 soft-cooked egg	0 (eggs have no carbs)
2 tsp. Margarine	0 (fats have no carbs)
12 oz. coffee	0
½ cup low fat milk	6
1 pkg. Sweetener	3

Total grams carb: 57

LUNCH AND SNACK

2 slices (2 oz.) rye bread_____30

2 oz. sliced turkey _____0

2 lettuce leaves _____<1

1 tsp. mayonnaise _____0 (fats have no carbs)

1 small bag (3/4 oz.) pretzels _____15

1 small (4 oz.) apple _____ 15

12oz. diet cola soda _____0

Total grams carb:_____60

MID-AFTERNOON SNACK

16oz. diet iced tea _____0

1/2 c. frozen yogurt_____15

Total grams carb:_____15

SUPPER/DINNER

1c. tossed salad greens, cucumber slice _____5

1 Tbsp. salad dressing_____0 (fats have no carbs)

3oz. baked chicken breast _____0 (poultry has no carbs)

1/2 c. mashed potato _____15

1/2 c. sliced carrots_____5

1 small (1 oz.) dinner roll _____15

1 tsp margarine _____0 (fats have no carbs)

1 small fresh pear_____15

12 oz. diet caffeine-free cola soda _____0

Total grams carb:_____50

MEAL PLANNING USING EXCHANGE LISTS

In the exchange system, foods are grouped based on their carbohydrates, proteins and fat content.

The groups are starches, fruits, vegetables, milk, meat, sweets, fats and free foods. Each food has a portion attached to it, you can exchange or trade foods within a group because they're similar in nutrient content and the manner in which they affect your blood sugar.

Your dietitian may recommend a certain number of daily exchanges from each food group based on your individual needs. Together you'll decide the best way to spread the exchanges throughout the day. This can help to keep your blood sugar level within your target range.

See attached Food Exchange lists.

HOW DOES FIBER AFFECT BLOOD GLUCOSE LEVELS?

Fiber is a type of carbohydrate (just like sugars and starches) but it is not digested by the human body. Because it is not broken down by the body, the fiber in an apple or a slice of whole grain bread does not raise blood glucose levels.

So, fiber is a good thing for people with diabetes. The average person should eat between 20-35 grams of fiber each day. People with diabetes who consume enough fiber a day usually can control their blood glucose better.

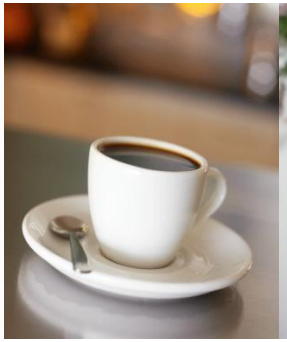
Foods high in fiber are fruits, vegetables and whole grains.

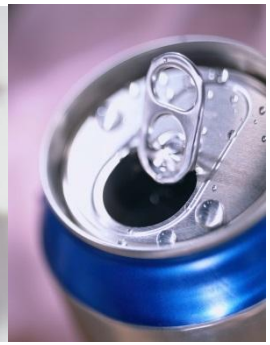
WHAT TO DRINK

Food often takes center stage when it comes to diabetes. But don't forget that the beverages you drink can also have an effect on your weight and blood glucose!

Recommended drinks are: Water, Unsweetened teas, Coffee, Diet soda, Low fat milk and 100% juice with no sugar added. Because these last two contain carbs make sure that you count them in your meal plan.

All of these drinks provide minimal calories and carbohydrate.





WHAT TO AVOID

Avoid sugary drinks like regular soda, fruit punch, fruit drinks, energy drinks, and sweet tea. These will raise blood glucose and can provide several hundred calories in just one serving!

- One 12-ounce can of regular soda = 150 calories and 40 grams of carbohydrate.
- One cup of fruit punch and other sugary fruit drinks = 100 calories (or more) and 30 grams of carbohydrate.

ALCOHOL AND DIABETES

The American Diabetes Association recommends that you ask yourself three basic questions before drinking alcohol:

- ❑ Is your diabetes under control?
- ❑ Check with your healthcare provider. Do you have health problems that alcohol can make worse, such as diabetic nerve damage or high blood pressure?
- ❑ Do you know how alcohol can affect you and your diabetes?

  For people on certain medications that stimulate the pancreas to produce more insulin, drinking alcohol can cause a dangerous low blood sugar because your liver has to work to remove the alcohol from your blood instead of its main job to regulate your blood sugar.