Cholesterol and Diabetes
Understanding the Importance of Good Control, Part II

What is cholesterol? It is as soft, waxy substance made by the liver. It is also found in animal products that we consume like meat and milk. Usually cholesterol is divided into two major components in the blood - LDL and HDL cholesterol. LDL cholesterol stands for low-density lipoprotein and is known as “bad cholesterol.” It carries cholesterol and fat from the liver to deposit them in body tissues. HDL cholesterol stands for high-density lipoprotein or “good cholesterol.” It transports cholesterol and fat out of the body. You want your LDL level to be low and your HDL level to be high. If your LDL level gets too high, it puts you at greater risk of a heart attack.

Besides your HDL and LDL levels, you also need to know your non-HDL cholesterol level. Non-HDL cholesterol is not new, but it’s become more important in the treatment of high cholesterol in diabetes.

What is non-HDL cholesterol? It is the cholesterol that remains when you subtract your HDL cholesterol level from the total amount cholesterol in your blood. It shows how much LDL and VLDL (very low-density lipoprotein) is in your body. The best time to measure non-HDL cholesterol is after you have eaten a meal. If you have diabetes, non-HDL cholesterol shows bad cholesterol levels better than LDL cholesterol alone, because LDL cholesterol can be altered by high blood sugar.

High levels of non-HDL cholesterol increase risk of cardiovascular disease, even if your LDL cholesterol and triglycerides are normal. Researchers suggest that people with diabetes and coronary heart disease keep their LDL cholesterol less than 100 and their non-HDL cholesterol less than 130.
How can you do that? A healthy diet and exercise play a large role, but you may also need a medicine called a statin. Statins limit how much cholesterol your body makes and help the liver remove the “bad” cholesterol (LDL) from your blood. A recent study showed that people with diabetes who took a statin had fewer heart attacks or strokes.

So what can you do? Ask your healthcare provider to measure your non-HDL cholesterol. Then if your level is too high, work with your medical team to change your eating and activity habits and medicine to get your LDL and non-HDL cholesterol into a safer range.

Glucose Variability: What It Is, and Who Should Be Concerned?

Glucose variability is the term that describes how much blood glucose levels change throughout the day. Frequent swings from a low blood glucose level to a high blood glucose level can increase your risk for diabetic complications. Large changes in blood glucose can occur:

• if insulin is not adjusted correctly for exercise or any increased activity, and/or
• meals are not regular or well-balanced.

Large changes in blood glucose levels can happen with both Type 1 and Type 2 diabetes. Everyone is different, so talk to your doctor about the blood glucose range that is right for you. No matter which type of diabetes you have, monitoring your glucose variability is essential to your health.

A1C levels do not reflect your glucose variability. Therefore, it is important to monitor both your daily blood glucose values and your A1C. If your A1C stays below 7%, and your daily changes in blood glucose are minimal, your risk for diabetic complications is lower.

So, how can you keep your blood glucose levels more constant? Here are some general guidelines:

• Eat similar amounts of carbohydrate at breakfast, lunch and dinner.
• Avoid eating large meals.
• Work with a registered dietitian to design a meal plan that includes the right amount of carbohydrate and fiber at the right times. Ask the dietitian
about carbohydrate counting and how different types of carbohydrates may affect you.

- Eat small snacks between meals if your blood glucose tends to get low.
- Try a bedtime snack if your blood glucose levels fluctuate during the night.
- If you use insulin, talk to your doctor about how to make sure it is controlling your blood glucose after meals and during the night. Continuous glucose monitoring with a special device is sometimes used to find this out.
- Adjust your insulin if you are going to exercise or if you are more active than usual. Check your blood glucose before and after exercising to make sure your levels are not changing too much.
- If you do not use insulin and are on maximum doses of diabetes pills, talk to your doctor about adding insulin to help you maintain a more constant blood glucose level.
- Ask your doctor or diabetes educator about how often to monitor your blood glucose. People with Type 1 diabetes usually monitor more often than those with Type 2.
- Discuss with your health care provider other ways to keep your blood glucose levels more even.

Don’t let your blood glucose run wild! Keeping your blood glucose more consistent throughout the day may help you to feel better now and in the future.

Which Diet is best for Weight Loss?
*Deciphering the Latest Diet News*

On July 17, 2008 in the *New England Journal of Medicine*, Israeli researchers released their latest findings on diet and weight loss. This study looked at the safety and effectiveness of the low-carbohydrate, Mediterranean, and low-fat diets. Safety was a concern because low-carbohydrate diets were believed to compromise heart health and kidney function.

This study was conducted over two years. The participants were closely followed for weight loss, diet adherence, and diet tolerance. They were randomly assigned to one of the three diets and met regularly in group classes with dietitians. Lab work was done at the beginning and every six months.
during the study. Participants were also weighed once a month and had their blood pressure taken every three months.

Participants on the low-carbohydrate diet had no calorie restriction. They ate less than 20 grams of carbohydrate per day during the first two months of the diet, and then could increase to no more than 120 grams per day for the rest of the study. They were told to choose foods low in total fat and trans-fats.

Participants on the Mediterranean diet were asked to limit their calories to 1500 calories per day for women and 1800 calories per day for men. This diet was rich in fruits and vegetables but limited the amount of red meat. No more than 35% of their calories could come from fat and most of the fat was to come from olive oil or nuts. They were also told to consume fish on a regular basis, red wine if desired and moderate amounts of whole grains.

The rest of the participants were put on a low-fat diet. This diet followed the guidelines of the American Heart Association. Again calories were limited to 1500 for women and 1800 for men. Less than with 30% of calories came from fat and less than 10% from saturated fat. Dietary cholesterol was kept under 300 milligrams per day. Participants were told to consume low-fat grains, vegetables, fruits and legumes while limiting added fats, sweets, and high-fat snacks.

After two years, the groups who lost the most weight and maintained it best were the participants consuming the low carbohydrate and Mediterranean diets. All participants decreased their blood pressures and blood lipid levels. However, people on the low fat diet found their diet easiest to continue over the two year period, while more people quit the low carbohydrate diet.

The Mediterranean diet worked best for those with diabetes. It decreased fasting blood glucose levels and increased insulin sensitivity. The researchers think the improved insulin sensitivity may be due to the mono-unsaturated fat from the olive oil.

This study supports the recommendation for dietitians and other health care providers to individualize meal plans for those who want to lose weight. No one plan is perfect for everyone, and if one plan fails, another method may be more successful.
Defeat Diabetes Day
Athens Regional Medical Center
1199 Prince Avenue
Athens, GA
Saturday, March 14, 2009
8:00 am-12:30 pm

A free community event for people with type 1 or type 2 diabetes, their families or anyone interested in learning more about diabetes self-management. The program consists of cooking demonstrations, vendor exhibits, health screens and educational workshops. Defeat Diabetes Day will be held on the campus of Athens Regional Medical Center in Athens, GA in the Medical Services Building (parking is free for this event). To register and/or request a brochure, please call 706-475-5617.

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New Orleans Red Beans

1 lb. dry red beans 3 tablespoons chopped garlic
2 quarts water 3 tablespoons chopped parsley
1 ½ cups chopped onion 2 teaspoons dried thyme, crushed
1 cup chopped celery 1 teaspoon salt
4 bay leaves 1 teaspoon black pepper
1 cup chopped sweet green pepper

1. Pick through beans to remove bad beans; rinse thoroughly. In a 5-quart pot, combine beans, water, onion, celery, and bay leaves. Bring to boiling; reduce heat. Cover and cook over low heat for about 1 ½ hours or until beans are tender. Stir and mash beans against side of pan.

2. Add green pepper, garlic, parsley, thyme, salt, and black pepper. Cook about 30 minutes, uncovered, over low heat until creamy. Remove bay leaves.


Nutrient Analysis, per serving (without rice):
171 calories, 32 g. carbohydrates, 10 g. protein, <1 g. fat, Cholesterol 0 mg., 7 g. fiber, Sodium 285 mg.
Dear Friend,

Diabetes Life Lines is a bi-monthly publication sent to you by your local county Extension agent.

It is written by Food and Nutrition Specialists at the University of Georgia, College of Family and Consumer Sciences. This newsletter brings you the latest information on diabetes, nutrition, the diabetic exchange system, recipes, and important events.

If you would like more information, please contact your local county Extension office.

Yours truly,

County Extension Agent

Connie Crawley, Principal Writer

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Scott Angle, Dean and Director