

Do you need to save some money or improve your health? This Health Guide can help you do both at the same time.

Heart disease Research presented at the American Heart Association Meeting in November 2008 found arteries of overweight 10-year-old children were like those of 45-year-old adults.[8] These children are well on their way to a heart attack in their 30's or 40's. The American Academy of Pediatrics now recommends cholesterol screening for overweight children beginning at two years of age, and starting statin medications at eight years of age in those with high cholesterol.[9]

Heart disease kills almost 50% of Americans, and that number is predicted to increase. Fortunately, most heart disease can be avoided with proper lifestyle and may even be reversed with intensive lifestyle treatment. What is commonly called 'heart disease' is the result of a lack of oxygen getting to the heart muscle. ("ischemic heart disease") The most common cause is the presence of blockages in the arteries that supply blood to the heart muscle. They are called 'coronary' arteries because they sit on top of the heart like a crown. (coronary artery disease, or "CAD") Atherosclerotic lesions (injuries) in the walls of the arteries cause these blockages. Atherosclerosis is a disease that affects all of the arteries to some extent. It is also the most common cause of stroke, or "brain attack."

Lesions form as cholesterol is deposited in the walls of the arteries. The immune system is activated, causing inflammation, but is unable to remove the cholesterol and repair the injury. In time a hard cap forms over the site of the chronic injury, or sore. This process causes the wall to thicken and protrude inside the artery, impeding blood flow through the artery with a blockage, or "stenosis."

Physical symptoms usually do not develop until the blockage is 70% or more. The larger the blockage, the smaller the passage inside the artery, and the easier it is for a blood clot to plug it up completely. If the blockage is 90% or more many doctors will recommend placing a stent to open it back up. (A stent is a small, collapsible tube that is inserted into the artery and then expanded to push and hold the walls apart.) If many arteries are blocked, or if the blockages are very large, doctors may recommend bypass surgery. (Coronary Artery Bypass Graft, or "CABG") This surgery sews a vein taken from the leg into the coronary artery system so blood can flow around the blockages to supply the heart muscle downstream. But only about 30% or less of heart attacks occur at these large blockages—smaller, younger lesions cause most heart attacks. These young lesions cannot be seen on an angiogram because they do not have a hard, impermeable cap. Stents do not protect against these lesions.

Lifestyle changes not only prevent heart disease, but reverse it.

In fact, many stents plug up within 12 months unless the patient makes lifestyle changes, especially in what they eat. Many coronary bypasses also plug up in a few years without proper lifestyle changes.[10] Bypass surgeries often use a mechanical pump to keep the blood flowing to the rest of the body while the heart is being worked on. Over half of all patients put on the pump experience a large drop in brain function.[11] Five years after surgery, without proper lifestyle changes, brain function may be decreased more than heart function is increased.

Many stents plug up in a few months without proper dietary change.

Keeping cholesterol levels below 150-160 mg/dl is best, especially when heart disease is already present. LDL-cholesterol should be under 90. These levels prevent progression and may even reverse disease. Some foods are very high in cholesterol, such as egg yolk, liver, and brain, but plants contain no cholesterol at all. Certain foods cause the body to produce cholesterol, such as free fats. (free fats include cooking oils & grease) Trans fats and saturated fats are especially harmful, but not all fats raise cholesterol levels. Omega-3 fats tend to be beneficial. Fats eaten "as grown," such as raw tree nuts, have actually been found to reduce cholesterol.[12] Fiber removes cholesterol from the body, but is only found in plants. We need to eat plenty of fresh fruits and vegetables with every meal. A simple plan is to eat mostly plant foods "as-grown" and avoid processed foods.

Lifestyle changes can reduce blood cholesterol greatly, so it is very important not to ignore them.[13] Aerobic exercise is very important to prevent and reverse heart disease. Resistance exercise, such as lifting weights, is very beneficial. An ideal exercise program should include both types for best results. Gradually work up to 45 minutes of moderate walking and 15-20 minutes of resistance exercise every day.

Most heart disease can not only be prevented with proper lifestyle, but also reversed. A **heart-healthy lifestyle** should include the following:

- Keep total cholesterol under 160 mg/dl, LDL under 90
- Avoid cholesterol intake (plants have no cholesterol, most animal foods are high in cholesterol—eat plants)
- Eat plenty of fiber-rich foods to remove cholesterol from the body and moderate blood sugar (unrefined plant foods are high in fiber, most animal foods have no fiber)
- Get 30-45 minutes of moderate aerobic exercise (e.g. walking, swimming) and 15-20 minutes of resistance exercise (e.g. weights, elastic bands) every day
- Maintain lean body weight and trim waist (eat high-fiber, low-calorie, unprocessed foods; have a solid breakfast, a good lunch and a small supper; avoid evening meals)
- Stop smoking and avoid alcohol intake (grape juice provides the benefit of wine without the risk)



This guide is compiled from a variety of authoritative sources for educational purposes by the Rocky Mount Lifestyle Health Center, a non-profit, physician-led lifestyle health education community service. It is our gift to help you live a healthier, happier, more productive life. Other health guides are available for many diseases. Call 483-7775 for more information. www.lifestylehealthcenter.org

John Kelly, MD, MPH, Medical Director

Lifestyle Health Guide No. 1

Diabetes The Centers for Disease Control and Prevention (CDC) reports that every third child born after the year 2000 will die with type 2 diabetes.[1] That number climbs to every second Black or Hispanic child. Diabetes and obesity are a modern plague sweeping the globe as developing countries adopt a more western lifestyle. In many Pacific cultures where diabetes was almost unheard of 50 years ago, one-third to one-half of the population is now diabetic. Almost all cases of type 2 diabetes are preventable with simple lifestyle changes.[2]

Sugar isn't the cause of diabetes

Diabetes is a condition where there is too much sugar in the blood. (fasting glucose >126 mg/dl) When blood sugar is too high it can injure a variety of organs, including the eyes, kidneys and blood vessels. It also causes pain and numbness in the limbs as it injures nerve cells.

Sugar in the blood is used by body cells to make energy to run on. Insulin is a hormone produced by the pancreas that causes sugar to move from the blood into cells. When this does not happen, sugar builds up in the blood and the person develops diabetes.

There are two types of diabetes, type 1 and type 2. Only about 5% of diabetics have type 1 diabetes. It is caused when the pancreas does not produce enough insulin to move sugar into cells. It often begins in late childhood and seems to be related to an infectious process and progressive injury to the pancreas. In some cases it has been reversed or delayed by stopping all dairy foods, if caught early enough.

Type 2 diabetes is the most common form—over 95% of all cases. It is caused when the body develops resistance to the effect of the insulin produced by the pancreas. As resistance increases, the pancreas produces more insulin. If the resistance gets high enough the pancreas may "wear out" and produce less insulin—type 2 diabetes then becomes very much like type 1 diabetes. As insulin resistance develops, insulin levels rise before blood sugar does, so type 2 diabetes can be detected earlier by testing insulin levels than by testing glucose levels.

Insulin resistance is caused by a variety of changes that occur when we consistently eat more calories than we use. Instead of being discarded, as are some nutrients, excess calories are stored as fat in the body. As this fat builds up, it increases appetite and causes inflammation. The normal functioning of the "sugar gates" into body cells is impaired, causing resistance to the effects of insulin.

As insulin resistance increases, the pancreas produces more insulin, increasing appetite and increasing insulin resistance in a vicious positive-feedback cycle. Fortunately this can be reversed with proper lifestyle changes that eliminate the excess calories. Foods high in fats and calories such as processed meats, refined cereals and snack foods, promote insulin resistance. Lack of exercise and excess weight also promote insulin resistance. Losing weight reduces insulin resistance. Such changes can reduce blood sugar even more effectively than medication.[2]

Excess calories lead to diabetes... fat is actually worse than sugar.

The glycemic index is a measure of how fast a particular food raises the blood sugar compared to eating pure glucose. The higher the glycemic index, the quicker the food raises blood sugar levels—the lower the index, the slower it affects blood sugar. It is best to eat foods with a low glycemic index. Processing of foods generally raises their glycemic index, so it is best to eat less refined foods, such as processed meats and baked goods.

Sometimes we hear that "carbohydrates are bad" but this is not completely true. Refined, processed carbohydrates should be avoided, but unrefined carbohydrates are healthy. Some can actually lower the blood sugar, such as sweet leaf. (also called "stevia")

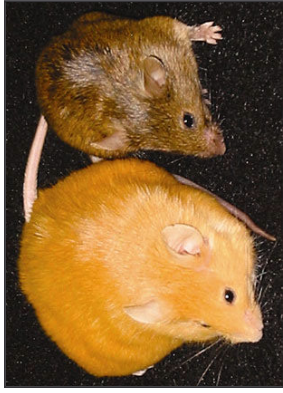
A simple way to lower blood sugar for the entire day is to eat ½ cup of beans with breakfast. Another simple thing is to include some high-fiber protein with each meal, such as nuts or beans. A simple rule of thumb is to eat mostly plant foods "as grown" and avoid most refined, processed foods. (Sound familiar? That's right, what is good for the heart is also good for the pancreas.)

Ever wondered whether it was something in your genes, or what's in your jeans? The answer may surprise you...

Lifestyle and genes The GEMINAL study followed 30 men with prostate cancer who elected not to receive surgery, radiation or chemotherapy.[3] Instead, they chose to participate in a comprehensive lifestyle treatment program with a low-fat diet, regular exercise, and stress management. Their cholesterol dropped, their blood sugars improved, and they lost weight. These are the changes typically seen with such lifestyle interventions. What made this study special was what happened to their genes. Careful measurements taken before and after treatment revealed that many **genes known to promote cancer were turned down or "off," while many genes known to fight cancer were turned "on" or up.**

Although lifestyle changes cannot alter the genetic code itself, they can alter the expression of that code in very beneficial ways. Amazing as this sounds, science has known for decades that not all genes in each cell are expressed by the cell—that is how some cells become muscle, some become bone, and some blood. Only recently has science learned that most cells can readily alter their gene expression, and that diet has such a powerful effect on gene expression. A whole new science called nutrigenomics has developed around this finding.[4]

Agouti mice have been genetically engineered with genes causing obesity, heart disease and diabetes in order to study human disease. Researchers developed a special diet designed to "turn off" gene expression. It worked even better than they imagined. Not only did the diet improve the health of the adult mice, it completely altered the health of babies born to those mice.[5] Their pups did not even seem to have any of the special genes so carefully engineered into their mothers—they did not look like their mothers. DNA testing revealed the genes were still there, but had been "switched off" by the special diet eaten by their mothers while they were in the womb. The reverse effect has been found in babies born to mothers who were fed a high-fat, refined diet. This diet created an unhealthy appetite in the child that predisposed them to heart disease and other chronic conditions.[6]



Agouti mouse and her pup

These and other experiments show that simple lifestyle factors such as diet, exercise and attitude, turn our genes "on" and "off" and thus exert powerful effects on health and disease. A whole new field of medicine has developed called Lifestyle Medicine. It uses therapeutic lifestyle changes to alter gene expression and stop, or even reverse, diseases such as heart disease, diabetes and obesity. (www.lifestylemedicine.org)

The **Coronary Health Improvement Project** (CHIP) is an award-winning 30-day lifestyle improvement program with over 300 chapters in North America and 50,000 graduates worldwide. Research shows the CHIP program is effective in treating chronic diseases including heart disease, diabetes, high blood pressure and obesity. This is why the CHIP program was chosen as the primary treatment regimen by the Rocky Mount Lifestyle Health Center. (see front page address panel for information)

A large Roanoke clinic conducted a study of the CHIP program to treat a group of diabetic patients. In just four weeks their fasting blood sugars dropped by over 25% (43 mg/dl). Moreover, their cholesterol levels and triglycerides dropped as well, reducing their risk of heart disease. The investigators wrote, "We whole-heartedly recommend the CHIP program as an effective way to educate and motivate participants to lower their risk for heart disease. The improvements in risk profiles from the CHIP program are well documented in published studies."

(www.CHIPHealth.com/scientific.html)

Mama's diet turned 'off' her bad genes in the womb; her children didn't even look like her...

There are presently three chapters in the area (Rocky Mount, Roanoke and Martinsville) with over 80 successful graduates. A new chapter is soon to open in the Smith Mountain Lake area.

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What we eat can make us sick, but the good news is that it can also make us well. Try these ideas for better health.

Breakfast is the most important meal of the day—you don't want to miss it! Studies show that skipping breakfast is not associated with lower body weight, but actually with higher weight.[7] Eating a solid breakfast of whole grains, fresh ripe fruit, unsalted nuts, along with a serving of beans for those with diabetes or high cholesterol, is the best way to prepare for the day. Who would begin a cross-country drive without first filling up the gas tank? A good breakfast sticks with you and prevents the mid-morning "letdown." Having a good breakfast also helps avoid empty-calorie snacking.

Breakfast can be quick and easy with just a little preparation beforehand. Whole-grain cereal started in a crock-pot or slow cooker at night is ready to eat in the morning. Fresh fruit can be washed and ready to chop up. Beans can also be cooked overnight or cooked ahead of time and be warmed at breakfast. Whole-grain bread or muffins can be baked beforehand and warmed in the toaster oven. A few raw or lightly roasted unsalted nuts tops it off. Enjoy! So, eat breakfast like a king, lunch like a queen, and supper like a pauper. That's right! Calories eaten later in the day are less likely to be used up that day than calories eaten earlier in the day. Eating a light supper—or none at all—is one of the best ways to control body weight. And controlling body weight can help control blood sugar, cholesterol and blood pressure.

Breakfast! It does a body good.

"Let your food be your medicine, and your medicine be your food."
Hippocrates

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Tasty Recipes from CHIP Chef Sally

Sunflower Loaf

Blend the following (except the rice) until creamy:

- 2 tsp. onion granules or powder
- 2 T. yeast flakes
- ¼ tsp. garlic granules or powder
- 2 T. olive oil (opt.)
- 4 T. soy sauce (Braggs)
- 1½ cup cold water
- 1 cup raw sunflower seeds
- 1 tsp. Italian seas.
- 4 cups cooked brown rice – ½ tsp. sage do not blend

Mix the blended mixture with 4 cups of cooked brown rice.

Then add one more cup of cold water to your blender to rinse it out and stir this into the mixture also.

To make this thin so it can be cut into size and shape for sandwiches, pour it about ½-inch deep onto a non-stick cookie sheet which has sides all around. May need to spray lightly with PAM first. Can be put into a deeper dish and served as a loaf with a gravy. (See recipe below.)

Bake at 350 degrees until the bottom has formed a nice brown crust...usually about 30 minutes. Keeps well refrigerated for a week. Makes great sandwiches.

Good Gravy

- ½ cup washed raw cashews
- ½ tsp. lemon juice
- 1½ tsp. soy sauce (Braggs)
- 4½ tsp. cornstarch
- 2 cups water
- ½ tsp. dried basil
- 1½ tsp. onion powder
- ½ tsp. Herbamare (seasoned salt)
- ½ tsp. garlic powder
- 1 pinch of rosemary

Blend all ingredients until smooth and cook over medium high heat until thickened, stirring constantly. It will thicken further as it cools.

Creole over Rice

- 1 large onion, diced
- 1 bay leaf
- 1 29 oz. can tomato sauce
- ½ cup peanut butter
- 2 15-oz. cans cooked garbanzos (chick peas)
- 1 tsp. salt (may need less if beans, peanut butter and tomato sauce are salted)
- 6 cups cooked brown rice

Sauté onions in the juice from the garbanzos. Add garbanzos, tomato sauce, salt and bay leaf. Simmer together for 20 minutes. Add peanut butter and simmer for additional 5 minutes. Serve over bed of hot cooked brown rice. Serves 6-8 adults. (Also great as a leftover.)

Brown Rice

- 4 cups water
- 2 cups brown rice

Put rice in water and bring to boil, then turn down to low heat and cook for 40-45 minutes until water is gone.