



# Oklahoma Heart Institute

volume 3 • number 1 • winter 2007

The **Heart**  
Healthy Primer  
**SECRETS TO A LONG  
AND HEALTHY LIFE**

Christopher Westfall



Stories  
FROM THE Heart.

“They saved my life.”

At 62, Broken Arrow native Nick Aston was spending his retirement traveling the Pacific Northwest and Florida in his motor home. • It was on a visit home last February that he awoke with severe pressure in his chest. • He drove himself to Hillcrest Medical Center where a team of cardiologists was waiting to treat him. • Testing revealed he had three blocked arteries. Within hours a balloon angioplasty was performed and a stent inserted. • A few days later, Nick was released to Hillcrest’s outpatient cardiac rehab program. • Today Nick is feeling better than ever and is once again ready to hit the road.

*The  
difference  
is our doctors.*



 Hillcrest

**OKLAHOMA HEART INSTITUTE AT UTICA**  
 1265 S. Utica Avenue  
 Suite 300  
 Tulsa, OK 74104  
 Phone: 918.592.0999  
 Fax: 918.592.1021

**OKLAHOMA HEART INSTITUTE AT SOUTHPOINTE**  
 9228 S. Mingo  
 Suite 200  
 Tulsa, OK 74133  
 Phone: 918.592.0999  
 Fax: 918.878.2499

**THE DOCTORS OF OKLAHOMA HEART INSTITUTE**  
 Wayne N. Leimbach, Jr., MD  
 Robert C. Sonnenschein, MD  
 Robert E. Lynch, MD  
 James J. Nemecek, MD  
 John G. Ivanoff, MD  
 Gregory D. Johnsen, MD  
 Alan M. Kaneshige, MD  
 Ernest Pickering, DO  
 Edward T. Martin, MD  
 Roger D. Des Prez, MD  
 Christian S. Hanson, DO  
 Rebecca L. Smith, MD  
 Tobie L. Bresloff, MD  
 David A. Sandler, MD  
 Raj H. Chandwaney, MD  
 D. Erik Aspenson, MD  
 Frank J. Gaffney, MD  
 Michael J. Fogli, MD  
 Eric G. Auerbach, MD  
 Kelly Flesner-Gurley, MD  
 Kambeez Berenji, MD



**Oklahoma  
 Heart  
 Institute**

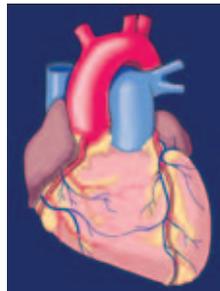
The *Oklahoma Heart Institute* magazine is mailed directly to referring physicians and other referring health care professionals in the Tulsa area and is also available in our patient waiting areas.

Cover painting by Tulsan Christopher Westfall

**4 The Basics of Eating a Heart Healthy Diet**



**9 Developing Healthy Eating Habits**



**19 High Blood Pressure A Risk Too Great to Ignore**

**22 Renal Artery Stenosis A Curable Cause of Hypertension**

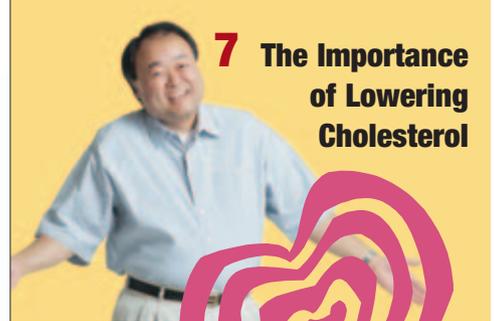


**24 Get the Picture CT Scans of the Heart**

**26 Pilates A new way to look at exercise**



**29 Pacemaker and Defibrillator Technology**



**7 The Importance of Lowering Cholesterol**

**11 Being Heart Smart With Diabetes**



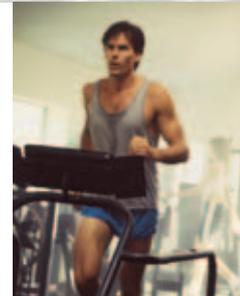
**13 Herbal Teas Growing and Brewing Your Own**

**20 A Shaper Cardiac Image**



**23 A Stress Test Do You Need One?**

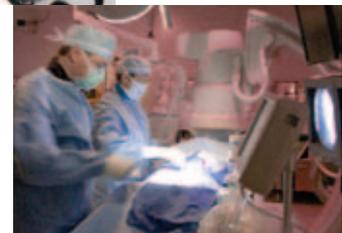
**25 Cardiac Rehabilitation A Return to Good Health**



**28 Heart Failure in Adults A Major and Growing Problem**



**30 Nobody Does It Better**



# The Basics of Eating a Heart Healthy Diet

**A** healthy diet doesn't just mean eating less. It means eating smart. The good news is that eating a healthy diet really does pay off. Heart disease and diabetes are preventable, and a healthy diet can increase the quality and length of your life. While there is no "best" diet that applies to everybody, there are some basic facts that are important to know.

## **SALT:**

Salt is listed as sodium on food labels. The reason we care about the amount of salt in the diet is that salt intake is related to blood pressure. High salt intake raises blood pressure in people with hypertension. High salt intake will also cause fluid retention and can even lead to heart failure in people

**High fat diets with large amounts of saturated fats may help with weight loss, but they increase the risk of having a heart attack.**



with a weakened heart. It is generally recommended that you eat less than 2500mg of sodium a day. High salt-containing foods include potato chips, popcorn, pickles, olives, cured meats (like ham), canned vegetables and many soups.



### FACE THE FATS

Fats contain about three times as many calories as sugar. Eating too much fat makes you fat. You do need some fat in your diet, but it's important to eat the right kind of fat.

**Saturated fats** are considered the bad fats. This is because they not only make you fat, but they cause your body to make large amounts of cholesterol. High blood cholesterol levels increase your risk of heart attacks and strokes. Eating 3 1/2 ounces of steak, which has a high saturated fat content, raises blood cholesterol as much as eating 13 pounds of fish, which contains the good fats (unsaturated fat).

**Unsaturated fats** are considered the good fats. They are still high in calories, but they don't dramatically raise cholesterol levels like the saturated fats. Some unsaturated fats can have a protective effect in regards to heart disease. Canola oil, sunflower oil, flaxseed oil, and olive oil are considered good fats. Good fat food sources include fish, avocados and walnuts. Good fats not only protect your heart, but they also keep you from feeling hungry soon after eating. This is why high fat diets are popular. They seem to suppress appetite. However, it is important to remember that the



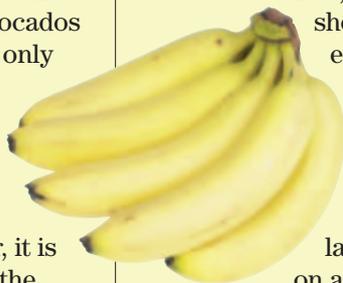
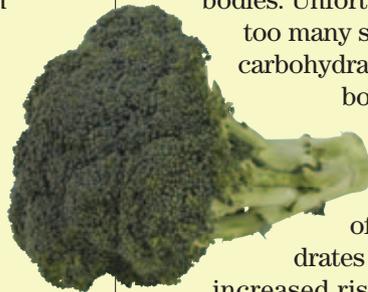
high fat diets need to contain high amounts of **unsaturated** fats and not high amounts of **saturated** fats. High fat diets with large amounts of saturated fats may help with weight loss, but they increase the risk of having a heart attack. In contrast, people who eat high carbohydrate/low fat diets often get hungry soon after eating. This can lead to increased caloric intake, making successful weight loss difficult.

### CARBOHYDRATES

Carbohydrates are sugars and starches and can come from grains, cereals and fruit. All carbohydrates are broken down in the body to make simple sugar (glucose).

Glucose is the principal fuel of our bodies. Unfortunately, we eat too many simple or refined carbohydrates, which our body quickly converts to simple sugar. Eating large amounts of these carbohydrates leads to an increased risk of diabetes, high triglycerides and the metabolic syndrome - all risk factors for heart disease. People with diabetes must pay particular attention to carbohydrates since carbohydrates dramatically raise blood sugar in diabetics. The solution is to eat complex carbohydrates such as whole grain food and legumes (peas, beans, lentils). For non-diabetics, fruits and vegetables are a good source of carbohydrates since they also provide other important nutrients.

A healthy diet should have less than 30% of calories coming from fats, and the fats should be unsaturated fats. The amount of fat in a food product can be determined by reading the Nutrition Fact labels now available on all packaged foods.



Nutrition Facts			
Serving Size 1/2 cup (114 g)			
Servings Per Container 4			
Amount Per Serving			
Calories 90		Calories From Fat 30	
% Daily Value*			
<b>Total Fat</b>	3 g		<b>5%</b>
Saturated Fat 0 g			<b>0%</b>
<b>Cholesterol</b>	0 mg		<b>0%</b>
<b>Sodium</b>	300 mg		<b>13%</b>
<b>Total Carbohydrate</b>	13 g		<b>4%</b>
Dietary Fiber 3 g			<b>12%</b>
Sugars 3 g			
<b>Protein</b>	3 g		
Vitamin A	80%	Vitamin C	60%
Calcium	4%	Iron	4%
*Percent Daily Values are based on a 2,000-calorie diet. Your daily values may be higher or lower depending on your calorie needs:			
		Calories	2,000      2,500
Total Fat	Less than	65 g	80 g
Sat. Fat	Less than	20 g	25 g
Cholesterol	Less than	300 mg	300 mg
Sodium	Less than	2,400 mg	2,400 mg
Total Carbohydrate		300 g	375 g
Dietary Fiber		25 g	30 g
Calories per gram:			
Fat	9	Carbohydrate	4
		Protein	4

The first thing to look at is the number of servings in the package. Often, people assume that a package is one serving size. In fact, the number of servings per package is often two or three. Eating multiple servings leads to excess calories and obesity.

The next thing to look at on the food label is the number of calories per serving. Next to this are the calories from fat. Dividing the calories per serving by the fat calories per serving gives you the percent of fat calories. For example, if the number of calories per serving was 240 calories and the fat calories were 60, then the food has 25% fat calories. The goal of a heart healthy diet is to have less than 30% of daily calories coming from fat.

The next thing you should look at is the type of fat in the product. Saturated fats should be limited because they raise cholesterol; trans-fats should be limited because they may increase the risk of cancers. Fats should be primarily unsaturated fats.

Sodium is then listed, and the amount of sodium (salt) per day should be less than 2500mg. In addition, food labels also indicate other

**A healthy diet should have less than 30% of calories coming from fats, and the fats should be unsaturated fats**

important nutrients that should be maximized. These include vitamin A, vitamin C, calcium, and iron. Vitamin D is also a good vitamin to have in your diet.

It is important to realize that health claims made on food packages by the manufacturers are often misleading. This is because there is not a standard definition as to what is healthy. Therefore, "lite" does not necessarily mean that the product is low in fat or calories. It often means that the product has a lower amount of fat or calories than some other product, which has been arbitrarily chosen as the standard by the food industry. For example, "lite" mayonnaise is still a high fat food. Where regular mayonnaise is 100% fat, "lite" mayonnaise is greater than 80% fat. In order to obtain health information, read the Nutrition Fact label, not just the wording on the label.

As you become more familiar with Nutrition Fact labeling, you will find that shopping becomes much easier. The good news is that the initial extra effort does pay off in improving quality of life. It is possible to eat a healthy diet that is not only satisfying, but also delicious.



*(Wayne Leimbach is a subspecialist in interventional cardiology, including cardiac catheterization, coronary angioplasty and*

*related interventional procedures such as stents, atherectomy, laser, intravascular ultrasound imaging and direct PTCA for acute myocardial infarction.)*

With your support,

Every 7 seconds

*the life of someone is improved by a Medtronic product or therapy.*

*Medtronic is the world's leading medical technology company, providing lifelong solutions for people with chronic disease.*

[enquiryap@medtronic.com](mailto:enquiryap@medtronic.com)  
[www.medtronic.com](http://www.medtronic.com)



**Medtronic**  
*When Life Depends on Medical Technology*



# The Importance of Lowering Cholesterol

## How Low Can You Go?

**T**he reason you should care about cholesterol is that high cholesterol levels are a major risk factor for heart attacks and strokes — the number 1 cause of death in the United States.

So, what exactly is cholesterol?

It's a waxy substance found in foods like meats and dairy products. It is also produced in our bodies and is necessary for us to function normally. Cholesterol is used to make hormones and is used in cell walls and membranes. Excess cholesterol levels build up and cause narrowing of blood vessels (Figure 1).

When the blood vessels become narrowed enough, blood flow becomes restricted to the heart or the brain, which produces symptoms. If a blockage (plaque) ruptures, a clot will form on top of the narrowing, and this will actually cause a heart attack or stroke.

But, if you lower your cholesterol, your risk for heart attack and stroke drops dramatically. In fact, we now know that very aggressive lowering of cholesterol levels can even cause regression of blockages in the blood vessels to the heart and brain.

Current guidelines state that total cholesterol levels should be less than 200mg/dl. However, we now know from several recent studies that even lower levels of total cholesterol are better. In evaluating cholesterol levels you need to understand that there are two types of cholesterol: the HDL cholesterol is considered good cholesterol.

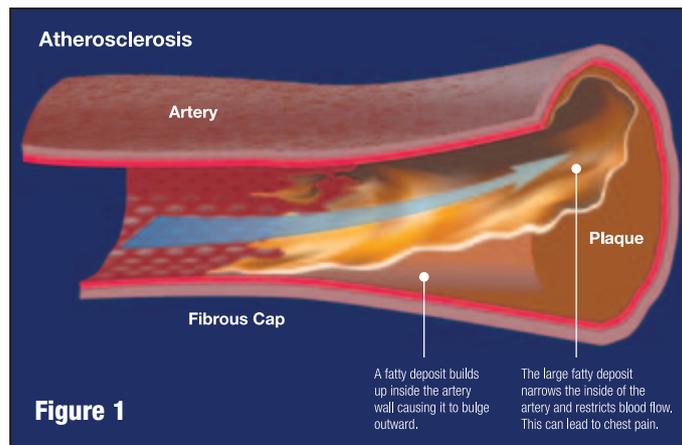


Figure 1

HDL cholesterol levels reflect the body's ability to remove cholesterol from the body. LDL cholesterol is considered the bad cholesterol. LDL cholesterol is the type of cholesterol that gets under the lining of the blood vessels and leads to heart attacks and strokes. Triglycerides are another type of fatty substance. Triglycerides also contain LDL cholesterol. Markedly elevated triglyceride levels also increase the risk of heart attacks.

Diet has a significant effect on cholesterol levels. Eating foods high in cholesterol will raise blood cholesterol levels. These foods include red meat, egg yolks, and organ meats, such as liver. In addition, eating saturated fats cause the body to increase production of cholesterol. Eating 3 ounces of cheddar cheese raises the cholesterol levels in the blood as much as eating

21 pounds of fish!

Although the fish may be high in fat, it is unsaturated fat that does not raise cholesterol levels. The significance of saturated fats is that they raise cholesterol levels by causing the body to produce cholesterol. Unsaturated fats do not stimulate the body to make cholesterol.

Foods high in saturated fats include beef products, the skin of chicken and turkey, and milk products,

such as cheeses. In addition, coconut oil and palm oil are both high in saturated fats.

Good sources of unsaturated fats include almonds and walnuts. Fish high in fat, such as salmon and tuna, not only contain good fats that do not raise cholesterol levels, but they may have heart protective effects.

Cooking oils that are considered healthy include canola oil, safflower oil, and flaxseed oil. In addition, olive oils have been shown to be beneficial.

People unable to effectively lower their cholesterol levels with dietary changes now have several very effective medications available. The most commonly used medicine for the treatment of high cholesterol are the statins. The statins help block the production of cholesterol by the body.

Some of the statin medicines currently available include Lipitor (atorvastatin), Crestor (rosuvastatin), Zocor (simvastatin), Pravachol (pravastatin), Mevacor (lovastatin) and Lescol (fluvastatin). In addition, there are medications that block the absorption of cholesterol. These include medicines such as Zetia (ezetamide), which blocks absorption of cholesterol in the intestines. Bile acid binders such as cholestyramine and colestipol also

triglyceride levels.

All adults should have their cholesterol levels checked. If elevated, changes in the diet must be made to lower cholesterol. If diet alone doesn't lower cholesterol to adequate levels, they should start medication therapy.

Guidelines suggest that for low risk people, LDL cholesterol should be less than 160 mg/dl. However, ideally, LDL cholesterol should be kept less than 130. For people with multiple risk fac-

less than 150mg/dl. Triglyceride levels over 500mg/dl are considered very high levels and significantly increase the risk of heart attacks.

Many studies have demonstrated that lowering cholesterol levels reduces heart attacks and strokes by at least 30%. Newer studies suggest that it may be possible to prevent as many as 70-80% of heart attacks with aggressive treatment of risk factors. In addition, very aggressive lowering of cholesterol levels can cause regression of blockages. Thus, the benefit of knowing and treating one's cholesterol level is worth the effort. Prevention still remains the best therapy for heart attacks and strokes.

Total Cholesterol Level	Risk
Less than 200 mg/dL	Desirable
200-239 mg/dL	Increased
240 mg/dL and above	High

Triglycerides

HDL Cholesterol  
good

LDL Cholesterol  
bad

**Many studies have demonstrated that lowering cholesterol levels reduces heart attacks and strokes by at least 30%. Newer studies suggest that it may be possible to prevent as many as 70-80% of heart attacks with aggressive treatment of risk factors.**

help block the absorption of cholesterol. Niacin is a B vitamin that lowers bad cholesterol and raises good cholesterol. Its dose is limited by the side effect of flushing. Fibracids (gemfibrozil) and fenofibrates (Tricor) and niacin all help lower triglyceride levels and raise good cholesterol. The omega 3 fatty acid fish oils also help lower

tors for heart disease, LDL cholesterol should be kept less than 100mg/dl. If a person already has evidence of heart disease, peripheral vascular disease or has diabetes, LDL cholesterol should optimally be kept less than 70. Triglycerides should be measured when a patient has been fasting. Fasting triglyceride levels should be

*(Wayne Leimbach is a subspecialist in interventional cardiology, including cardiac catheterization, coronary angioplasty and related interventional procedures such as stents, atherectomy, laser, intravascular ultrasound imaging and direct PTCA for acute myocardial infarction.)*



By Stacy K. Dempsey

# Developing Healthy Eating Habits

As a veteran of the fitness industry, I am certain that if you asked 100 physicians, personal fitness trainers, nutritionists/dietitians, or bodybuilding professionals for the best prescription for eating, you'd get 100 different answers. Although the perfect eating plan is different for every person, nutrition is not as complicated as many make it. My personal belief is that if we define nutrition as complex, then we have an excuse to remain a society in which 64 percent of the population is considered obese.

When beginning a new nutrition regiment, I encourage clients to determine realistic parameters in which he or she can live, reach personal goals, and make tempting food the exception, not the rule. This thought process allows a person to look at his or her eating and fitness habits in a personal way and eliminates the idea of living a life of deprivation and eating boring foods. A balance of living life (going to parties, eating pizza, and consuming alcoholic beverages), and living right (exercising regularly and eating healthy) does exist

and having both can make for a very successful life.

What is clean eating? The best description would be eating those foods closest to their original state with little or no processing, additives, or preservatives. The following are examples of foods regarded as clean within their respective groups:

**Clean Proteins:** Egg whites, boneless/skinless chicken breast, tuna steak, and turkey breast.

**Clean Carbohydrates:** Complex — oatmeal, brown rice, sweet potatoes, russet potatoes, and

legumes/lentils; Simple — fruits and some vegetables.

**Good Fats:** Avocado, olives, olive oil, nuts, seeds, and natural peanut butter.

What can you do with all of the food choices out there? First, you must claim responsibility for your choices. In order to get leaner, lose weight, and perform better, you don't have to starve yourself or eat only oatmeal, egg whites, and tuna. However, you can't wonder why you are over your ideal weight when you've eaten upsized fast food meals, pizza, consumed 12



beers with three bags of potato chips, and a box of Twinkies — all in one week. Eating better requires planning, preparation, measuring food intake, and charging yourself with making conscious nutrition decisions.

So, what should be eaten and when? The following outlines a general prescription for better nutrition habits:

How many calories are needed? Begin by determining your ideal body weight with this formula. Females should give themselves 100 pounds for the first five feet of height, plus five pounds for each additional inch. Thus, the ideal weight for a five-foot-seven-inch woman would be 135 pounds. Males should give themselves 110 pounds for the first five feet of height, and add five pounds for each additional inch. Thus, a six-foot-three-inch tall man should weigh about 185 pounds.

Next, to figure your daily caloric requirement, multiply your ideal weight by 15. This figure is for a relatively sedentary adult of either sex. More active adults need to multiply by 20. For active adolescents, multiply by 30.

How often should one eat? A good goal is to let no more than four hours pass without taking in calories. Many people are confused if they are told to eat six meals a day. I often explain it to clients as taking in 200 to 400 calories every two to four hours, letting no more than four hours pass. This allows your blood sugar levels to remain stable, so you don't experience a starving feeling, which tends to trigger poor eating choices. Your body will perform better on all levels — physiologically and psychologically.

How should the intake of calories be broken down per designated eating time? Both balance and moderation are important. Our

bodies need good, clean, complex carbohydrates, lean proteins, good fats, and simple carbs.

I usually have clients begin with a 40-30-30 plan. With this, 40 percent of calories are from carbs, 30 percent from proteins, and 30 percent from fats. Depending on the person's goals, the percentages might be altered. A person whose caloric intake should equal about 2,800 calories a day would divide the totals as follows: 1,120 calories of carbohydrates, 840 calories of proteins, and 840 calories of fat. Then, those totals could be broken down in each small meal or calorie consumption time.

The way people relate to food can help or hinder efforts to achieve good health and reasonable body weight, so identify your motives when you eat. Keep a daily food journal to help reveal a pattern of eating. Food diaries shed light on types of foods being eaten, quantities, and their nutritional value. Also, they can help you understand your eating habits and triggers for those habits. If you find yourself eating out of boredom, loneliness, or depression, have a plan of “removal” from the moment by taking a walk or calling a friend. Removing yourself within the first minute of the urge to eat unnecessarily may help you establish new habits and keep you from taking in extra calories.

Water is also an important part of weight management. On the average, a person should drink eight eight-ounce glasses of water every day. Overweight people should take in one additional glass for every 25 pounds of excess weight. This amount should also be increased if you exercise at high intensities or if the weather is hot and dry.

If you are in the process of beginning a fitness or nutrition program, seek out professional help, such as a personal fitness trainer or a clinical dietician/nutrition specialist. And do your homework by finding out about your trainer's or nutrition counselor's education and experience.



## Water is an important catalyst for weight management. Here are some facts about water and weight management:

- The body will not function properly without enough water and can't metabolize stored fat efficiently.
- To get rid of excess water, you must drink more water and avoid increased salt intake.
- Retained water shows up as excess weight.
- Drinking water is essential to weight management.



# Being Heart Smart With Diabetes

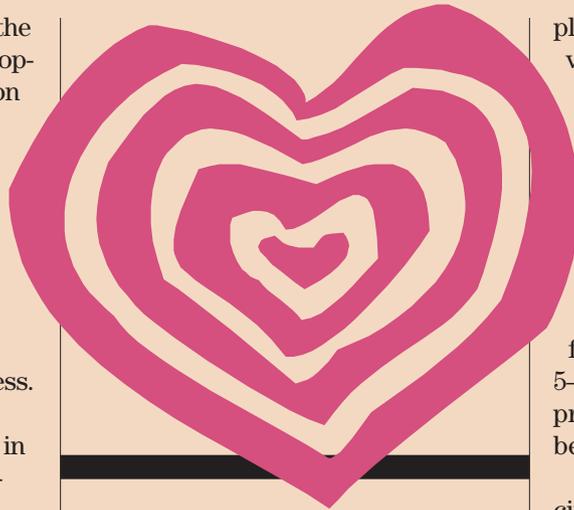
**T**he exact cause of diabetes is still unknown. But what we do know is that genetics and environmental influences, such as being overweight and lack of exercise, are often factors.

Diabetes is a disease in which the body either doesn't produce or properly use insulin. It affects 21 million Americans and, amazingly, it is estimated that nearly one-third of these people are unaware they have the disease. About 41 million people in the United States are thought to have pre-diabetes.

This is a disease that leads to heart disease, vascular disease, stroke, kidney failure, and blindness. Diabetics are at greater risk for developing buildup of cholesterol in the lining of their arteries (atherosclerosis) than the general population. Also, cardiovascular disease is the leading cause of death among diabetics, and adults with diabetes are 2 - 4 times more likely to have heart attacks or strokes.

More than 90% of Americans diagnosed with diabetes have type 2. This form of diabetes results from the body's resistance to the action of insulin. For a while, the pancreas compensates by making more insulin, but eventually the ability to create insulin is exhausted, and can no longer be made at all.

Unfortunately, the prevalence of type 2 diabetes is expected to skyrocket as our population ages and more and more Americans become overweight. On a positive note, peo-



**Cardiovascular disease is the leading cause of death among diabetics, and adults with diabetes are 2 - 4 times more likely to have heart attacks or strokes.**

ple with pre-diabetes can help prevent progression to type 2 diabetes by making changes in their diet and increasing their level of physical activity. Blood glucose may even return to normal levels. While some medications may delay development of diabetes, diet and exercise work better. Moderate physical activity for 30 minutes a day, along with a 5-10% reduction in body weight, produces a 58% reduction in diabetes.

There are also many new medicines that have been developed to keep blood sugar from being high without causing constant high insulin levels.

Metformin has been available since the 1990s. Primarily, it makes the blood sugar better by decreasing the liver's production of sugar. It is great for those who have high fasting blood sugars. It also does increase the use of sugar by the cells of the body.

Glitazones (pioglitazone, rosiglitazone) were first approved in 1999. These make the cells more sensitive to the effects of insulin, so smaller amounts of insulin are needed to do the same work. They also have been shown to have many other helpful effects on the lipids (cholesterol and

triglycerides), blood pressure, and inflammation. All of these make them ideal to decrease the risk of heart disease, stroke and similar complications. The DREAM study showed that pre-diabetics were less likely to develop overt diabetes with use of glitzaones.

A newer agent, which was approved in 2005, is Byetta™. This is a chemical that was originally found in Gila monster saliva. It affects the body just like a naturally occurring protein called GLP-1, but Byetta lasts for up to 12 hours where GLP-1 is broken down in 1-2 minutes. GLP-1 causes insulin to be released from the pancreas only when the blood sugar is high (over 120). Insulin then shuts off when sugar is normal. In addition, it decreases glucagon release from the liver. Glucagon works against insulin and is part of why some people have high fasting blood sugars in the morning. Byetta has been extremely helpful in patients with diabetes mellitus who are overweight. It keeps food in the stomach longer after eating, thus decreasing the tendency to overeat or snack after eating. In addition, it increases satiety, so patients are not as interested in food. Many patients have a much easier time losing weight while taking Byetta.

There are even more agents that increase the body's own GLP-1 lev-

**While almost 21 million Americans have diabetes, it is estimated that nearly one-third of these people are not aware they have the disease.**

els by inhibiting its breakdown. These are the DPP-4 inhibitors that were approved in October of 2006. Galvus works on the same system and is expected to be approved in February of 2007. These do not raise GLP-1 as much as Byetta, but seem to avoid possible side effects. We do not know yet how much effect they will have on appetite and satiety, but at least they should not cause any weight increase.

One more agent is before the FDA waiting for approval. It has already been approved in Europe under the name of Accomplia. This works by inhibiting the endo-cannabinoid system, which makes

us less hungry when it is shut off. Studies have shown that people at risk for heart disease who take Accomplia have decreases in their cholesterol and triglycerides, decreased weight, and diabetics may improve their blood sugar control. Only time will tell if, and when, this will be approved for use in the United States.

For those whose bodies do not make enough insulin, there are new agents and new ways to give them. A new faster, shorter acting insulin, Apidra, is especially good for those who may have sugars that go too low. A new 24-hour insulin, Levimir, is given once a day, as Lantus is, with the potential to cause less weight gain and fewer low sugars.

It is very exciting that there are new agents for diabetes that work in a much more physiologic way to control blood sugar. Many of these require the pancreas to still be able to make some insulin. For that reason, it makes sense to start therapy earlier, rather than waiting until the pancreas is "on its last leg."

Aggressive management of blood sugars in diabetics, along with treating their other risk factors, reduces the risks of blindness, kidney failure, heart attacks and strokes. By keeping blood glucose, blood pressure, and cholesterol levels as close to normal as possible, people with diabetes can live long, healthy lives.

Diabetes Medications		
Type of Drug	Generic Name	Brand Name
Biguanide	metformin	Glucophage or Glucophage XR
Glitazone	pioglitazone	Actos, Actos plus met, or DuetAct
Glitazone	rosiglitazone	Avandia, Avandamet, or Avandaryl
Incretin Mimetic	exenatide	Byetta
DPP-4 Inhibitor	sitagliptin	Januvia
	* vildagliptin	* Galvus
Endocannabinoid System Blocker	* rimonabant	* Accomplia

\* Not yet FDA approved



*(Tobie Bresloff is a specialist in Endocrinology, Metabolism and Hypertension, with expertise in diabetes, lipids, hypertension and thyroid diseases.)*

# Herbal Teas

## Growing and Brewing Your Own

Once I began blending and testing herb teas to sell under my Garden Party label, I knew what I didn't want. An herb tea should never be flat and flavorless. Whether it's fruity or spicy, soothing or lively, simple or sophisticated, it needs taste and personality.

I found my homegrown mint, lemon balm, and chamomile were more flavorful than the herbal ingredients I could buy. I also learned that many of the old-fashioned beverage flavorers, such as rose petals and toasted sunflower hulls, are still delightful additions. And for simple pleasures, few things equal the fragrance and flavor of a few fresh leaves of lemon verbena steeped in boiling water.

Here are my picks for the most flavorful and widely adapted "tea" plants for home gardens, along with tips for harvesting and my favorite recipes. All of these plants grow well throughout the United States.

They are hardy perennials (up to -20°F) that do well in sun or part shade, except where noted.

■ **Bee Balm** (*Monarda didyma*), a member of the mint family, is native to the Eastern U.S. and Canada.

Here in the drier West, I pamper it, making sure it's in water-retentive soil. Both the brightly-colored flowers and the leaves, with their complex flavors of citrus and spice, are used for tea.



■ **Catnip** (*Nepeta cataria*) is a two- to three-foot-tall mint family member. The fuzzy, scalloped leaves have a lemon-mint flavor. If you have cats, you know they roll in it. My solution: Grow a surplus and dry the leaves on top of the refrigerator where the cats can't reach them. One caution: Pregnant women should avoid drinking catnip tea.

■ **Chamomile** bears small, daisy-like flowers that have long been used in Europe for tea. German chamomile (*Matricaria recutita*) is a two-foot annual. Roman or English chamomile (*Chamaemelum nobile*) is a lush green perennial ground cover bearing small, yellow, button-like flowers. Although many references designate German chamomile as the sweeter type preferred for tea, I harvest the mature flowers of both chamomiles for a light, apple-scented tea.

■ **Fennel** (*Foeniculum vulgare*) is a three- to five-foot perennial often cultivated as an annual. In cold climates, you can succession-plant through the early spring and summer, and it will often self-sow. Here in the desert, I plant in the fall.

Fennel likes full sun. Both the feathery leaves and the seeds are used for licorice-flavored teas.

■ **Sunflower Seed Hulls**, roasted and ground, were used by Native Americans and pioneers as a coffee substitute. I run a rolling pin over the seeds to crack them, then remove the kernels for baking and snacks. I place the hulls in a dry cast-iron frying pan and stir over medium-high heat for a few minutes until they're blackened. It's a smoky operation, but the aroma is toasty and inviting. The hulls add a hearty flavor to teas, as well as darken them.

### HARVESTING

Aromatic oils are most concentrated when herb plants are in bud, so that's a good time to harvest, although you can certainly take cuttings here and there during the growing season. Cut back the entire plant by two-thirds. In my region, I get about three cuttings before letting the plants go.

The plants listed here can all be used fresh for tea, or they can be dried first. To dry them, I spread the stems on trays in a warm, airy place and turn them twice a day. When they're dry (four to eight days), I gently strip off the leaves, buds, or flowerheads and store them in closed containers.

I cut stalk fennel and coriander when the seeds are barely mature, but before they shatter, and invert them in paper sacks. In a few weeks, when the seeds have dropped to the bottom and dried, I funnel them into storage containers.

### BLENDING AND BREWING

In "merry olde England," a tea with one ingredient was called a simple. Start by sampling some sim-

ples and get familiar with the various teas. That way, you'll know if you're one of a very small percentage of people that may experience a reaction to one of these ingredients.

Once you discover the art of blending, however, you'll probably prefer the made-to-order tastes and

subtle accents you can create. But just as mixing contrasting colors can make a muddy mess, mixing unrelated flavors can be unsatisfying. The trick is to choose one flavor or family of flavors to carry your message. Then, for accent, add small amounts of other herbs or bits

of dried fruit or citrus peel, toasted almonds or walnuts, or whole spices. Use about three parts of your dominant ingredient(s) to one part of accent items. Crumble the leaves if necessary to mix evenly, but not enough to go through your strainer or tea ball.

**PROVIDING EXCITING DINING FOR TULSANS.**



*Private dining and meeting rooms available.*



1324 S. Main  
Tulsa, OK 74105  
Restaurant 918.582.1964  
Catering 918.382.6022

3509 S. Peoria, Suite 120  
Tulsa, OK 74105  
918.746.4900  
Catering 918.382.6022

www.thechalkboard-tulsa.com  
www.garlicrose-tulsa.com

*The Chalkboard is open 7 days a week Breakfast, Lunch & Dinner.*

*Garlic Rose Lunch Tues.-Sat., Dinner Mon.-Sat.*

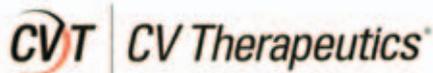


**Superior Linen Service**

*"A Complete Linen Service, for Every Business Profession"*

**Health Care / Hospitality**  
**800-456-5031**

www.superlinen.com



**Lincoln C. Maxwell**  
Cardiovascular  
Account Specialist

lincoln.maxwell@cvt.com

**CV Therapeutics, Inc.**  
3172 Porter Drive  
Palo Alto, CA 94304  
VM 877.CVT.7171 x 7833  
Cell 918.688.2894  
Fax 918.250.6473

*Petal Pushers*

*where art and flowers  
come together in the finest  
of floral service*



1660 E. 71st St. Suite H  
Tulsa, OK 74136-5191  
Fax: (918) 494-9022  
petalpusherstulsa@sbcglobal.net

**(918) 494-0999**

**Steve Stoll**

steve\_stoll@ajg.com



**Gallagher Benefit Services, Inc.**

A Subsidiary of Arthur J. Gallagher & Co.

1307 S. Boulder, Suite 300  
P.O. Box 3142  
Tulsa, OK 74101-3142  
918.764.7158  
Fax 918.599.7036

*This magazine serves as a  
major communication source  
for Oklahoma Heart Institute.*

**If you would like to become a  
co-sponsor call Laura Norris at**

**1.800.561.4686**

**or email: lnorris@pcipublishing.com**



Oklahoma INSURANCE  
for  
OKLAHOMA Physicians

www.plico-ok.com

Main: (405) 286-6800 Fax: (405) 286-6900 P.O. Box 1838 Oklahoma City, OK 73101



**PATIENT SERVICE CENTERS in**

**OKLAHOMA**

**KANSAS**

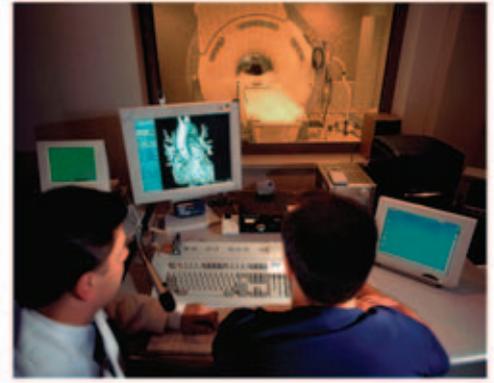
- TULSA • BARTLESVILLE • OWASSO
- PONCA CITY • SAPULPA • CLAREMORE
- STILLWATER • OKLAHOMA CITY

- INDEPENDENCE • PITTSBURG

TELEPHONE: **918.744.2500**

TOLL FREE: **800.722.8077**

www.rmlonline.com



**OKLAHOMA HEART INSTITUTE  
AT UTICA**

1265 S. Utica Avenue  
Suite 300  
Tulsa, OK 74104  
Phone: 918.592.0999  
Fax: 918.592.1021

**OKLAHOMA HEART INSTITUTE  
AT SOUTHPONTE**

9228 S. Mingo  
Suite 200  
Tulsa, OK 74133  
Phone: 918.592.0999  
Fax: 918.878.2499

**SERVICES OF OKLAHOMA  
HEART INSTITUTE**

**Noninvasive Cardiology**

- Nuclear Cardiology
- Echocardiography & Doppler Studies
- Nuclear and Echocardiographic Exercise & Pharmacological Stress Testing
- Transesophageal Echocardiography
- Arterial Venous Peripheral Vascular Imaging & Doppler Studies
- Peripheral Arterial Ultrasound Studies & Duplex Imaging
- Cardiovascular Magnetic Resonance Imaging
- External Counterpulsation (ECP) Therapy
- Transcranial Doppler

**Invasive Cardiology**

- Cardiac Catheterization
- Coronary Angioplasty
- Atherectomy
- Rotablator Atherectomy
- Thrombolytic Therapy
- Coronary Stents
- Carotid Stenting
- Intravascular Ultrasound
- Myocardial Biopsy
- Pericardiocentesis
- Intravascular Radiation Therapy
- Peripheral Angioplasty
- Peripheral Stents
- Percutaneous PFO Closures
- Percutaneous ASD Closures

**Electrophysiology**

- Electrophysiology Studies
- Ablation Therapy
- Pacemaker Implantation
- Pacemaker and Lead Extraction
- Pacemaker Programming
- Pacemaker Monitoring & Clinic
- Implantable Cardioverter Defibrillator (ICD) Placement
- ICD Replacement
- ICD and Hardware Removal
- ICD Programming
- ICD Monitoring and Clinic
- Holter Monitoring and Interpretation
- 30 Day Cardiac Event Monitors
- Implantation and Interpretation of Long-term Heart Monitors
- Signal Averaged EKG's and Interpretation
- Head Up Tilt Testing and Interpretation

- Direct Current Cardioversion
- Antiarrhythmic Drug Loading and Monitoring

**Metabolic Disorders**

- Endocrinology
- Diabetes
- Hypertension
- Hyperlipidemia
- Thyroid
- Other Metabolic Disorders

**Specialty Clinics**

- Hypertension Clinic
- Adolescent & Adult Congenital Heart Clinic
- Lipid & Wellness Clinic
- Heart Failure Clinic
- Dysrhythmia & Pacer Clinic
- Same Day Appointment Clinic



Oklahoma Heart Institute

# THE **DOCTORS** OF OKLAHOMA HEART INSTITUTE

## **Wayne N. Leimbach, Jr., MD, FACC, FSCAI, FCCP, FAHA**

Dr. Leimbach is a subspecialist in interventional cardiology, including cardiac catheterization, coronary angioplasty and related interventional procedures such as stents, atherectomy, laser, intravascular ultrasound imaging and direct PTCA for acute myocardial infarction. He is Chief

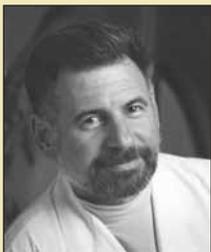


of Cardiology at Hillcrest Medical Center, where he is also Director of the Cardiac and Interventional Laboratories at Hillcrest Medical Center. Dr. Leimbach is Co-Director of the Lipid and Wellness Clinic at Oklahoma Heart Institute. He is Director of the James D. Harvey Center for Cardiovascular Research at Hillcrest Medical Center, as well as Director of the Oklahoma Heart Research and Education Foundation. He also serves as Clinical Associate Professor of Medicine at the University of Oklahoma College of Medicine – Tulsa. Dr. Leimbach completed a Clinical Cardiology Fellowship and a Research Fellowship at the University of Iowa Hospitals and Clinics. He also completed his Internal Medicine Internship and Residency programs at Iowa, where he was selected Chief Resident in Medicine. He received his medical degree from Northwestern University in Chicago and his Bachelor of Science degree from the University of Michigan.

*Board certified in Internal Medicine, Cardiovascular Disease and Interventional Cardiology*

## **Robert C. Sonnenschein, MD, FACC, ASE, RVT**

Dr. Sonnenschein specializes in echocardiography and noninvasive peripheral vascular imaging. He is Director of Peripheral Vascular Ultrasound Imaging at Hillcrest Medical Center and Oklahoma Heart Institute and serves as Clinical Associate Professor of Medicine at the University of



Oklahoma College of Medicine – Tulsa. He completed his Cardiology Fellowship at the State University of New York Upstate Medical Center in Syracuse, where he also completed his Internal Medicine Internship and Residency programs. Dr. Sonnenschein received his medical degree from Rush Medical College in Chicago and his

Bachelor of Arts degree from the University of Pennsylvania.

*Board certified in Internal Medicine, Cardiovascular Disease and Adult Echocardiography  
Registered Vascular Technologist*

## **Robert E. Lynch, MD, FACC**

Dr. Lynch is a specialist trained in noninvasive and invasive cardiology. He is former Chief of Cardiology at Hillcrest Medical Center, where he also has served as Chief of Medicine and President of the medical staff. Dr. Lynch is Co-Director of the Lipid and Wellness Clinic at Oklahoma Heart Institute and Director



of the Executive Health Program. He is also a Clinical Assistant Professor at the University of Oklahoma College of Medicine – Tulsa. He completed his Cardiology Fellowship, as well as his Internal Medicine Internship and Residency, at the University of Oklahoma Health Sciences Center. Dr. Lynch received his medical degree from the University of Oklahoma School of Medicine and his Bachelor of Science degree from the University of Tulsa. Before establishing his practice in Tulsa, he served as Chief of Medicine at the U.S. Army Hospital, Bangkok, Thailand.

*Board certified in Internal Medicine and Cardiovascular Disease*

## **James J. Nemec, MD, FACC**

Dr. Nemec is a subspecialist in echocardiography, stress echocardiography and nuclear cardiology. He serves as Director of Nuclear Cardiology for Oklahoma Heart Institute. Dr. Nemec has served as Assistant Professor of Internal Medicine, Division of Cardiology, at Creighton University



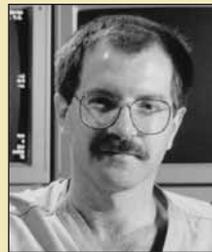
and as Assistant Professor, Department of Radiology, also at Creighton University. He completed his Clinical Cardiology Fellowship at the Cleveland Clinic Foundation and his Internal Medicine Internship and Residency at Creighton University. Dr. Nemec also completed a year of training in pathology at the University of Missouri, Columbia, MO. He received his medical degree from Creighton University, where he also received his Bachelor of Arts degree.

*Board certified in Internal Medicine and Cardiovascular Disease*

## **John G. Ivanoff, MD, FACC, FSCAI**

Dr. Ivanoff specializes in interventional cardiology, including cardiac catheterization, coronary angioplasty and related interventional procedures such as stents, atherectomy and direct PTCA for acute myocardial infarction. He is Director of the Catheterization Laboratories at SouthCrest Hospital. Dr. Ivanoff serves as

Clinical Associate Professor of Medicine at the University of Oklahoma College of Medicine –



Tulsa. He has also served as Assistant Professor of Medicine at the Medical College of Pennsylvania, as well as Associate Director of the Coronary Care Unit and Assistant Professor of Medicine at

Hahnemann University Hospital, where he also completed his Cardiology Fellowship. He completed his Internal Medicine Internship and Residency at the Medical College of Pennsylvania, where he served as Chief Resident. Dr. Ivanoff also received his medical degree from the Medical College of Pennsylvania. He completed his Masters degree in biochemistry at Columbia University and received his Bachelor of Arts degree from the University of Pennsylvania.

*Board certified in Internal Medicine, Cardiovascular Disease and Interventional Cardiology*

## **Gregory D. Johnsen, MD, FACC, FSCAI**

Dr. Johnsen is an interventional cardiologist with expertise in cardiac catheterization,



angioplasty and related interventional procedures, such as stents and atherectomy. He is Director of Cardiac Rehabilitation at Hillcrest Medical Center and Director of the Hillcrest Exercise and Lifestyle

Programs. He completed his Clinical Cardiology Fellowship at the University of Oklahoma – Oklahoma City, where he then finished an extra year of dedicated training in interventional cardiology. He completed his Internal Medicine Internship and Residency training at the University of Oklahoma – Oklahoma City, where he also received his medical degree. Dr. Johnsen received his Bachelor of Science degree from Oklahoma State University.

*Board certified in Internal Medicine, Cardiovascular Disease and Interventional Cardiology*

## **Alan M. Kaneshige, MD, FACC, ASE**

Dr. Kaneshige is a noninvasive cardiologist with expertise in adult echocardiography,



stress echocardiography and transesophageal echocardiography. He is past Chief of Cardiology at Hillcrest Medical Center. Dr. Kaneshige is also the Director of the Adolescent and Adult Congenital

Heart Clinic at Oklahoma Heart Institute and Director of the Congestive Heart



Failure C.A.R.E. Center at Hillcrest Medical Center. Dr. Kaneshige completed his Internal Medicine Internship and Residency at Creighton University School of Medicine, where he also received his medical degree. He received a Bachelor of Science in chemistry at Creighton University. Dr. Kaneshige completed his Clinical Cardiology Fellowship at Creighton, where he also served as Chief Cardiology Fellow for two years. He completed an additional Cardiac Ultrasound Fellowship at the Mayo Clinic in Rochester, MN. Dr. Kaneshige served as Assistant Professor of Medicine at Creighton University School of Medicine, where he was Director of the Noninvasive Cardiovascular Imaging and Hemodynamic Laboratory.

*Board certified in Internal Medicine, Cardiovascular Disease and Adult and Transesophageal Echocardiography*

**Ernest Pickering, DO, FACOI**

Dr. Pickering is a cardiology specialist trained in noninvasive and invasive cardiology with subspecialty expertise in cardiac catheterization and angioplasty. He is Chief of Cardiology at SouthCrest Hospital and past Chief of Cardiology at Tulsa Regional Medical Center. He completed



a Cardiovascular Disease Fellowship at Baylor College of Medicine in Houston, TX. Dr. Pickering's Internal Medicine Residency was completed at Oklahoma Osteopathic Hospital in Tulsa. He received his medical degree from Philadelphia College of Osteopathic Medicine and his Bachelor of Science degree from Shelton College, Ringwood, NJ.

*Board certified in Internal Medicine and Cardiovascular Disease*

**Edward T. Martin, MS, MD, FACC, FACP, FAHA**

Dr. Martin is a noninvasive cardiologist with subspecialty expertise in non-invasive imaging. He is Director of Cardiovascular Magnetic Resonance Imaging at Oklahoma Heart Institute, SouthCrest Hospital and Hillcrest Medical Center. Dr. Martin is also Director of Nuclear Cardiology at



SouthCrest Hospital. In addition, he is a Clinical Associate Professor of Medicine at the University of Oklahoma College of Medicine – Tulsa. Dr. Martin has specialty training in Nuclear Medicine, as well as additional training dedicated to Cardiovascular Magnetic Resonance Imaging. He completed his Cardiology

Fellowship at the University of Alabama. Dr. Martin's Internal Medicine Internship and Residency training were performed at Temple University Hospital in Philadelphia. He received his medical degree from the Medical College of Ohio. Dr. Martin completed his Master of Science degree in mechanical engineering at the University of Cincinnati and his Bachelor of Science degree in physics at Xavier University. Dr. Martin is a founding member of the Society of Cardiovascular Magnetic Resonance and is an editorial board member of the Journal of Cardiovascular Magnetic Resonance.

*Board certified in Internal Medicine and Cardiovascular Disease*

**Roger D. Des Prez, MD, FACC**

Dr. Des Prez is a noninvasive cardiologist with subspecialty expertise in echocardiography, nuclear cardiology and transesophageal echocardiography. He is Director of Echocardiography and Peripheral Vascular Ultrasound Imaging at SouthCrest Hospital.

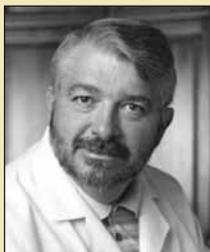


Dr. Des Prez received his medical degree and Bachelor of Arts degree from Vanderbilt University. He completed his Residency in Internal Medicine and Pediatrics at University Hospital of Cleveland. Dr. Des Prez practiced for six years as an internist with the Indian Health Services in Gallup, NM. He returned to Vanderbilt University as a member of the Internal Medicine Faculty, at which time he also completed his cardiology training. In addition to noninvasive cardiology, Dr. Des Prez is interested in outcomes research and computers in medicine.

*Board certified in Internal Medicine, Cardiovascular Disease, Adult and Transesophageal Echocardiography, Critical Care and Pediatrics*

**Christian S. Hanson, DO, FACE**

Dr. Hanson is a specialist in Endocrinology, Metabolism and Hypertension at Oklahoma Heart Institute with expertise in diabetes, lipids and hypertension. He also serves as Clinical Associate Professor of Medicine in the College of Osteopathic Medicine – Oklahoma State



University. He completed a Fellowship in Endocrinology, Metabolism and Hypertension at the University of Oklahoma in Oklahoma City. Dr. Hanson's Internal Medicine Residency and Rotating Internship were completed at Tulsa Regional Medical Center. He received his

medical degree from Oklahoma State University and his Bachelor of Science degree from Northeastern Oklahoma State University in Tahlequah.

*Board certified in Internal Medicine, Endocrinology and Metabolic Diseases*

**Rebecca L. Smith, MD**

Dr. Smith is a noninvasive cardiologist with subspecialty expertise in transesophageal echocardiography, intra-operative echocardiography, stress and pharmacological echocardiography and contrast echocardiography. She completed an Advanced Cardiac Imaging Fellowship at



the Cleveland Clinic Foundation and her Cardiology Fellowship at the University of New Mexico Health Sciences Center, Albuquerque, NM. Dr. Smith's Internal Medicine Internship and Residency training were performed at the University of Arizona Health Sciences Center in Tucson. She received her medical degree from the Medical College of Ohio. Dr. Smith completed her Bachelor of Science degree at Cleveland State University.

*Board certified in Internal Medicine*

**Tobie L. Bresloff, MD**

Dr. Bresloff is a specialist in Endocrinology, Metabolism and Hypertension, with expertise in diabetes, lipids, hypertension and thyroid diseases. She also serves as Assistant Professor in Clinical Medicine at the University of Oklahoma College of Medicine - Tulsa. She completed an NIH



Fellowship in Endocrinology and Metabolism at Vanderbilt University in Nashville, TN. Dr. Bresloff's Internal Medicine Internship and Residency were completed at Sinai Hospital of Detroit, Detroit, MI. She received her medical degree from Wayne State University School of Medicine in Detroit and her Master of Science and Bachelor of Science degrees at the University of Michigan, Ann Arbor, MI.

**David A. Sandler, MD, FACC**

Dr. Sandler is a cardiologist with subspecialty expertise in electrophysiology. He completed his Cardiac Electrophysiology Fellowship and his Cardiovascular Medicine Fellowship at New York University Medical Center, New York, NY.



Dr. Sandler's Internal Medicine Internship and Residency were performed at Mount Sinai Medical Center, New York, NY. He earned his medical degree from Georgetown University School of Medicine in Washington, DC. Dr. Sandler received his Bachelor of Arts degree at the University of Pennsylvania in Philadelphia.

*Board certified in Internal Medicine, Cardiovascular Disease and Cardiac Electrophysiology*

**Raj H. Chandwaney, MD, FACC, FSCAI**

Dr. Chandwaney is an interventional cardiologist with expertise in cardiac catheterization, coronary angioplasty and related interventional procedures such as coronary stents, atherectomy, intravascular ultrasound and peripheral vascular interventional procedures. He



completed his Clinical Cardiology Fellowship at Northwestern University Medical School in Chicago, IL., where he also completed an Interventional Cardiology Fellowship. Dr. Chandwaney's Internal Medicine Internship and Residency were performed at Baylor College of Medicine in Houston, TX. He received his medical degree from the University of Illinois at Chicago. Dr. Chandwaney completed his Master of Science degree at the University of Illinois at Urbana-Champaign, where he also received his Bachelor of Science degree.

*Board certified in Internal Medicine, Cardiovascular Disease and Interventional Cardiology*

**D. Erik Aspenson, MD, FACE, FACP**

Dr. Aspenson is a subspecialist in Endocrinology, Metabolism and



Hypertension at Oklahoma Heart Institute, with expertise in diabetes, lipids, hypertension and thyroid diseases. He completed a fellowship in Endocrinology at Wilford Hall Medical

Center, Lackland AFB, Texas. Dr. Aspenson's Internal Medicine Internship and Residency were completed at David Grant Medical Center, Travis AFB, California where he served as Chief Resident. He received his medical degree from the University of Oklahoma and his Bachelor of Science degree at Oklahoma State University.

*Board certified in Internal Medicine, Endocrinology and Metabolic Diseases*

**Frank J. Gaffney, MD, FACC**

Dr. Gaffney is an invasive and noninvasive cardiologist with subspecialty expertise in transesophageal echocardiography. He completed his Cardiovascular Medicine Fellowship at Scott & White Memorial Hospital in Temple, Texas. Dr. Gaffney completed his Internal Medicine



Internship and Residency at Brooke Army Medical Center in San Antonio. He then remained on staff at Scott & White Memorial Hospital for several years, before entering his Fellowship in Cardiovascular Medicine. Dr. Gaffney earned his medical degree from New York Medical College, Valhalla, New York, and he received his Bachelor of Arts degree at Hofstra University in Hempstead, New York.

*Board certified in Internal Medicine and Cardiovascular Disease*

**Michael J. Fogli, MD**

Dr. Fogli is a subspecialist in magnetic resonance imaging, nuclear cardiology, echocardiography, stress echocardiography and transesophageal echocardiography. He completed a fellowship in Advanced Cardiac Imaging at the University of Texas, Southwestern Medical Center in Dallas, TX.



His Cardiology fellowship was also performed there, as were his Internal Medicine Internship and Residency. Dr. Fogli earned his medical degree at the University of California, San Francisco School of Medicine and his Bachelor of Arts degree at the University of California, Berkeley.

*Board Certified in Internal Medicine and Cardiovascular Disease*

**Eric G. Auerbach, MD, FACC**

Dr. Auerbach is a subspecialist in magnetic resonance imaging, nuclear cardiology, echocardiography, stress echocardiography and transesophageal echocardiography. He completed his Cardiovascular Magnetic Resonance Imaging fellowship at Oklahoma Heart



Institute, Tulsa, OK. His Cardiology fellowship was performed at the University of Miami/Jackson Memorial Hospital in Miami, FL. Dr. Auerbach's Internal Medicine Internship and residency were also completed

at the University of Miami/Jackson Memorial Hospital in Miami. Prior to that, he performed a Surgery Internship at New York Hospital/ Cornell Medical Center, New York, NY. Dr. Auerbach earned his medical degree at the University of Miami School of Medicine, Miami, Florida and his Bachelor of Arts degree at Princeton University, Princeton, New Jersey.

*Board Certified in Internal Medicine and Cardiovascular Disease*

**Kelly Flesner-Gurley, MD**

Dr. Flesner-Gurley is a subspecialist in Endocrinology, Metabolism and



Hypertension at Oklahoma Heart Institute, with expertise in diabetes, lipids, hypertension and thyroid diseases. Prior to joining Oklahoma Heart, she was at St. John Medical Center in Tulsa. She completed

her fellowship in Endocrinology at the University of Texas at Galveston. Her Internal Medicine Internship and Residency were completed at the University of Texas in Houston, where she also received her medical degree. She earned her Bachelor of Science degree at Texas A&M University in College Station, TX.

*Board certified in Internal Medicine, Endocrinology and Metabolic Diseases*

**Kambeeze Berenji, MD**

Dr. Berenji specializes in interventional cardiology including cardiac catheterization, coronary angioplasty and related interventional procedures such as coronary stents, atherectomy, intravascular ultrasound and peripheral vascular interventional procedures. He completed an



Interventional Cardiology Fellowship at St. Vincent Hospital/ Indiana Heart Center in Indianapolis, Indiana, where he then completed additional training dedicated to peripheral vascular intervention. Dr. Berenji performed his Clinical Cardiology Fellowship at the University of Texas Southwestern Medical Center in Dallas, Texas and at the University of Iowa Hospital and Clinics in Iowa City, Iowa. He received his medical degree from Tehran University of Medical Sciences and then completed his Internal Medicine Internship and Residency at Wayne State University/ Detroit Medical Center in Detroit, Michigan.

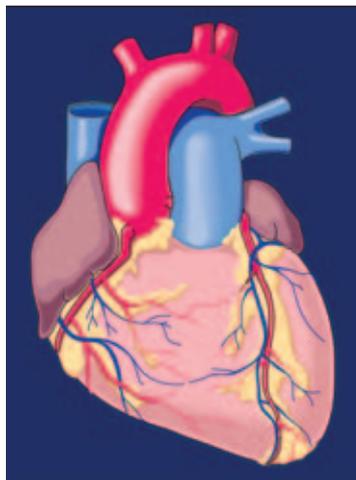
*Board certified in Internal Medicine and Cardiovascular Disease*

# High Blood Pressure

## A Risk Too Great to Ignore

**O**ne in four adults in the United States has high blood pressure. Even if your blood pressure is normal at age 50, you have a 90% risk of developing hypertension (high blood pressure) sometime during your lifetime.

A blood pressure reading uses two numbers to represent the pressure in the blood vessels during the two phases of the heart-beat. The systolic reading (top number) corresponds to the blood pressure when the heart contracts. The diastolic pressure (bottom number) corresponds to the pressure in the blood vessels when the heart relaxes.



High blood pressure is a systolic pressure of 140 mm Hg or higher or a diastolic blood pressure of 90 mm Hg or higher. A resting blood pressure of 140/90 mm Hg that persists over time is high blood pressure (hypertension). For people with diabetes or kidney disease, high blood pressure starts at 130/80 mm Hg.

Hypertension is a major risk factor for cardiovascular disease. Compared to the people with normal blood pressure, if you have hypertension you are three times more likely to develop coronary heart disease, six times more likely to develop heart failure, and seven

times more likely to have a stroke.

More than two-thirds of patients experiencing their first heart attack and three-quarters of those with a first stroke have high blood pressure. For people with hypertension, about one in six will die because of complications caused by high blood pressure.

Hypertension is a contributing factor to many medical problems, including heart attacks,

stroke, heart failure, kidney failure, coronary artery disease, and blindness.

There is good reason hypertension is called the “Stealth Killer”. Most people with hypertension have no symptoms. When symptoms do occur, they include headaches, nosebleeds, fatigue, flushed face, shortness of breath, blurred vision, and abnormalities in heart rhythm.

When the cause of hypertension is mostly unknown, it is referred to as essential hypertension. In some cases, high blood pressure is caused by another problem, such as kidney disease, hormonal abnormalities, narrowing of the aorta

### Blood Pressure for Adults Age 18 and Older

Category	systolic	diastolic
Normal	<120	<80
Prehypertension	120-139	80-89
Stage 1 hypertension	140-159	90-99
Stage 2 hypertension	≥160	≥100

Source: JNC VII National Institutes of Health; National Heart, Lung and Blood Institute.

### Blood Pressure for Diabetics

Normal	130	85
--------	-----	----

(coarctation) or pregnancy.

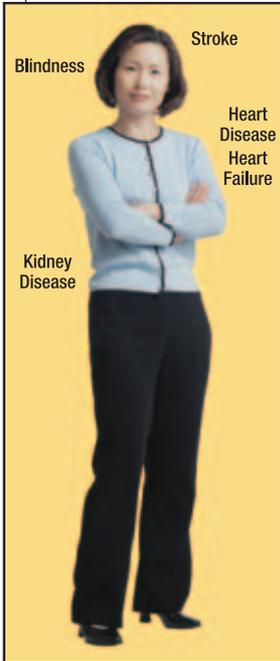
Lifestyle changes that may help lower blood pressures include weight loss, smoking cessation, exercise, and eating a low sodium diet.

If you are unable to lower blood pressure to normal levels with lifestyle modification, there are now multiple effective medications available. Studies have now shown that normalizing blood pressure can significantly reduce the risk of heart attack or stroke within just five years of treatment. Every adult

should know his or her blood pressure. Optimal blood pressures are less than 120/80 mm Hg.

**It is much better to visit the doctor to treat your risk factors than to see the doctor for a heart attack or stroke.**

With aggressive treatment, you don't have to die of a heart attack or stroke. It is much better to visit the doctor to treat the risk factors, such as high blood pressure, than to see the doctor for a heart attack or stroke.



# A SHARPER CARDIAC IMAGE CARDIOVASCULAR MAGNETIC RESONANCE IMAGING

Almost everyone has heard of magnetic resonance imaging (MRI). Many people associate the imaging technique with brain, bone, joint, and back or cancer problems. Indeed, it is common to hear that an injured athlete is undergoing an MRI to rule out ligament damage. However, few people realize that, over the last 15-20 years, MRI has undergone significant hardware and software changes that now allow it to be used to find problems in the heart and blood vessels. This discipline is called cardiovascular magnetic resonance imaging (CMR), and it provides very detailed and accurate images of the heart and blood vessels without the use of contrast media that may damage the kidneys. Images are also obtained without harmful radiation that is used with other imaging modalities.

Cardiovascular MRI is an accurate and reproducible imaging procedure that allows the identification of structural problems in the heart muscle and heart valves.

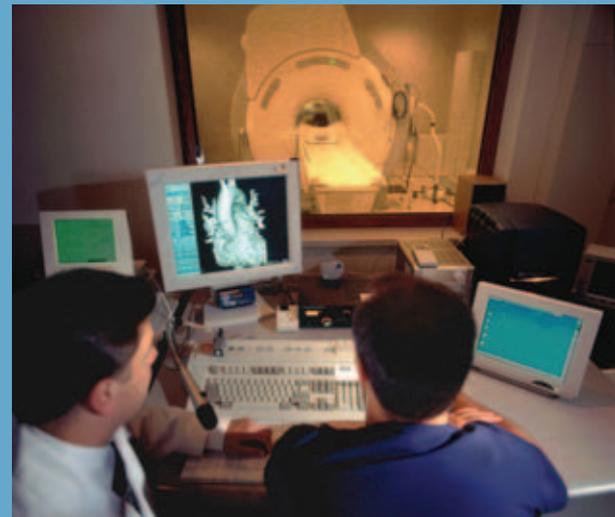
It is also useful in diagnosing congenital heart defects. These defects occur at birth and can sometimes cause significant impairment. CMR can aid the physician in helping to decide if heart or vascular surgery is needed and also aid in the correct timing of that surgery. More importantly, CMR may help in the decision to pursue a non-surgical option. The cardiovascular MR technique can also diagnose blockages in blood vessels throughout the entire body accurately, quickly and non-invasively, thus eliminating the risks of blood vessel damage, kidney impairment or strokes, which can occur with other more invasive procedures.

The CMR procedure is easily tolerated by patients. Study times can range from 15 minutes for simple exams, to over an hour for complicated studies. Patients must lie very still during the exam, but can come out of the scanner

if a break is needed. Breath-holding for brief periods is required in the majority of cases. Earphones are also provided for listening to music and hearing instructions from the technologist.

This imaging procedure may not be right for the severely claustrophobic or in those people who have certain types of implanted devices. Ask your doctor if this procedure is right for you.

Oklahoma Heart Institute's MRI Center has an international reputation and not only evaluates patients from the Tulsa area and surrounding states, but also from other countries. All interpreting cardiologists are certified at the highest attainable level of competence, and the center is accredited by the



Intersocietal Commission for the Accreditation of Magnetic Resonance Laboratories. The MRI Center specializes in cardiovascular MR, but also performs all types of general MRI studies. In addition to routine clinical studies, the MRI Center is also involved in multiple research trials, including a current study that allows patients with pacemakers to undergo MRI.

*(Edward Martin is a noninvasive cardiologist with subspecialty expertise in non-invasive imaging. Dr. Martin has specialty training in Nuclear Medicine, as well as additional training dedicated to Cardiovascular Magnetic Resonance Imaging.)*

# WHEN IT COMES TO HEALTH LAW, YOU WANT A SPECIALIST.



Barry Smith, Teresa Burkett, Bill Kellough, Senator Brian Crain

WE'VE HANDLED IT ALL. FROM LARGE HEALTHCARE SYSTEMS TO HOSPITALS, LONG-TERM CARE FACILITIES AND INDIVIDUAL PROFESSIONALS, OUR CLIENTS KNOW BOONE, SMITH'S HEALTH LAW GROUP HAS SPECIALIZED EXPERTISE TO HANDLE ANY HEALTH LAW ISSUE.

THE REASON? OUR HEALTHCARE ATTORNEYS HAVE ALSO BEEN GENERAL COUNSEL AND PRINCIPAL COUNSEL FOR TWO OF THE LARGEST HEALTHCARE SYSTEMS IN THE STATE. ONE OF US IS A REGISTERED NURSE. ANOTHER IS A LIAISON TO HEALTHCARE LEGISLATION AT THE OKLAHOMA STATE LEVEL. AND, ALL OF THIS IS BACKED UP BY A SET OF COMMERCIAL LAWYERS WITH EXTENSIVE TRANSACTIONAL & LITIGATION EXPERIENCE IN FEDERAL AND STATE COURTS.

NO OTHER LAW FIRM IN THE STATE HAS THIS KIND OF UNPARALLELED HEALTH LAW TEAM. PERIOD.

CALL US FOR MORE INFORMATION. **918.587.0000** OR VISIT OUR WEBSITE AT **WWW.BOONESMITH.COM**  
500 ONEOK PLAZA / 100 W. 5TH ST., TULSA, OK 74103



## HEALTH LAW GROUP

BOONE, SMITH, DAVIS, HURST & DICKMAN

**SPECIALTY AREAS:** Peer Review and Credentialing • ERISA and Employee Benefit Plans • Health Information and HIPAA Compliance • Labor & Employment Law • Business Transactions • Academic Medical Centers



### Commercial/Medical Electronics, Inc.

1519 South Lewis Ave., Tulsa, OK 74102  
(918) 749-6151 FAX: (918) 749-3023

*Serving the medical community of Oklahoma since 1976, CME is a full service biomedical equipment service and supply center.*

#### COMPLETE SUPPORT! SALES AND SERVICE!

Factory trained, certified biomedical technicians on staff to help you 24 hours a day...every day!

#### MEDICAL EQUIPMENT - Cardiac Specialist

*Opening a new clinic? Enlarging an existing clinic? Hospital expansions? Updated old style equipment?*

**Bankruptcies/Lease Repos/Closings/Factory Overstocks!**

Visit our WEBSITE:

C  
M  
E  
-  
U  
S  
A  
.  
C  
O  
M

*This magazine serves as a major communication source for Oklahoma Heart Institute.*

If you would like to become a co-sponsor call Laura Norris at **1.800.561.4686** or email: [lnorris@pcipublishing.com](mailto:lnorris@pcipublishing.com)

# Renal Artery Stenosis

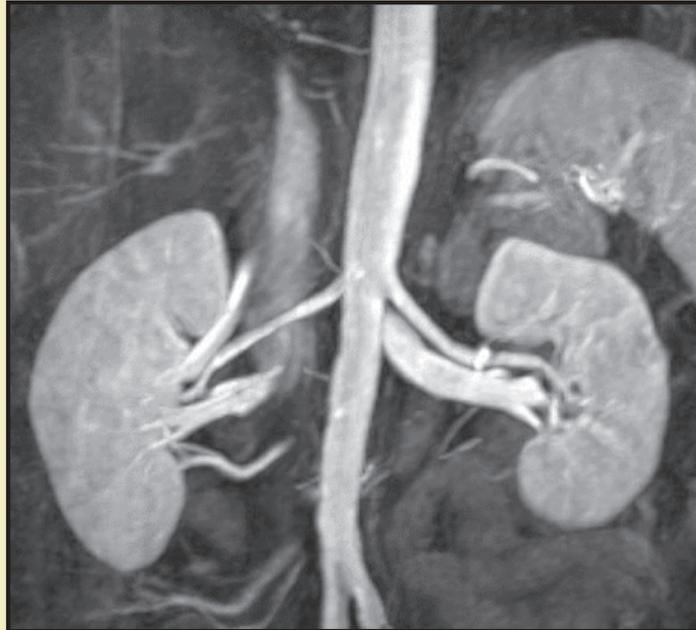
## *A Curable Cause of Hypertension*

### THE LINK BETWEEN RAS AND HYPERTENSION

Hypertension (elevated blood pressure) is a very common medical problem. But did you know that in about five percent of patients, it is secondary to something called Renal Artery Stenosis (RAS)? RAS is a narrowing of the blood vessels to the kidneys. If it can be diagnosed, hypertension can be improved or even cured.

Kidneys have an important regulatory role for the adjustment of blood pressure in controlling body water and sodium. They also secrete a hormone called renin that can increase blood pressure.

In renal artery stenosis,



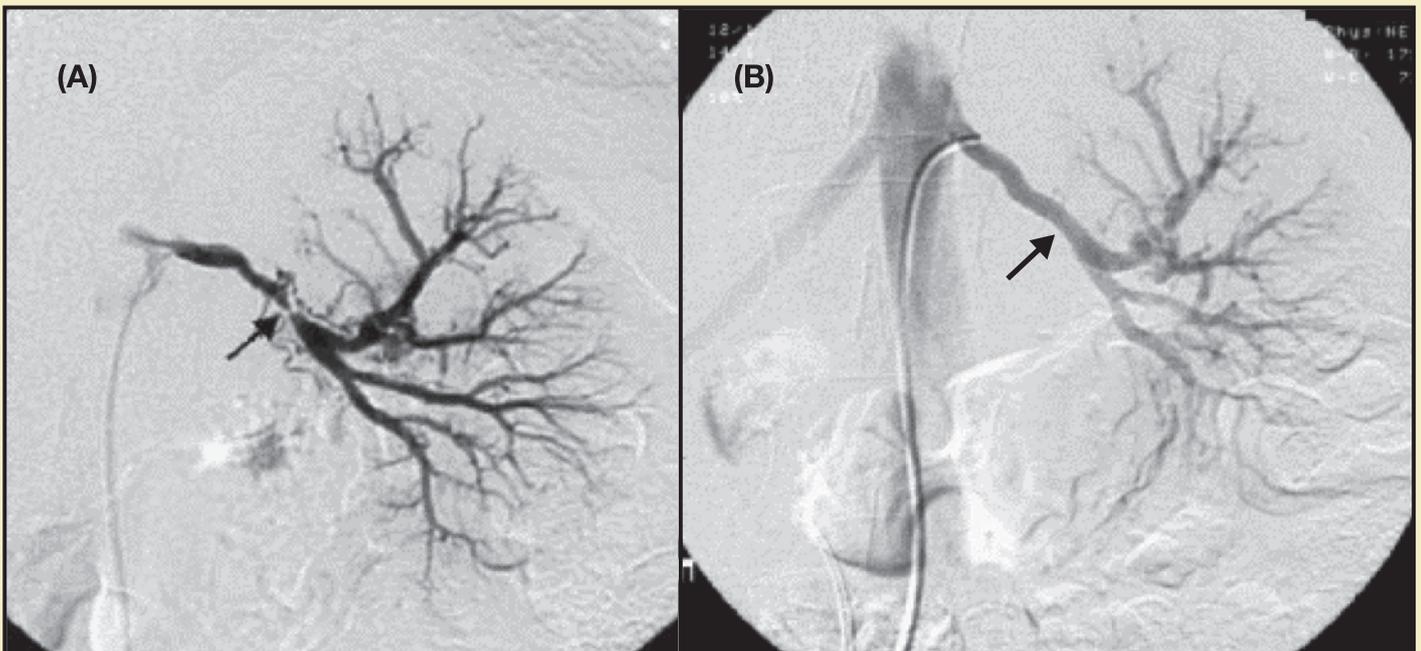
**Figure 1.** MRI view of kidneys and normal renal arteries.

kidney blood supply is decreased; in response, the kidneys increase the secretion of renin to compensate for their decreased blood supply. This increased secretion of renin increases overall blood pressure and eventually causes hypertension.

### RENAL ARTERY STENOSIS: WHAT IS IT?

Each kidney is usually supplied with one renal artery; although some people have multiple vessels (Fig-1).

The most common cause of renal artery stenosis is atherosclerosis (Fig-2), the thickening and hardening of the arterial walls because of cholesterol build up. In fact, in patients with evidence of



**Figure 2.** A: Angiogram of left renal artery stenosis. B: Angiogram after successful balloon angioplasty.

# A STRESS TEST DO YOU NEED ONE?

atherosclerosis in the heart blood vessels, also known as coronary disease, there is up to a 35% risk of having RAS. Smoking, diabetes and elevated cholesterol are risk factors for atherosclerosis.

RAS can be present without any symptoms other than hypertension. When RAS affects both kidneys, it can cause renal failure. Renal artery stenosis can also worsen the symptoms of patients with angina or heart failure.

Renal artery stenosis can be diagnosed by ultrasound, CT scan, MRI or angiography (Fig- 1 & 2). In most patients, treatment of symptomatic RAS can be achieved without surgery. Instead, angioplasty and stenting are used to open the stenosis (Fig-2).

## TREATABLE WITH SCREENING

Renal artery stenosis is one of the treatable causes of hypertension and renal failure. Anyone whose hypertension is difficult to control should consider screening for RAS. Screening should also be done in patients with hypertension and evidence of significant coronary disease or peripheral vascular diseases.



*(Kambeez Berenji specializes in interventional cardiology including cardiac catheterization, coronary angioplasty and related interventional procedures such as coronary stents, atherectomy, intravascular ultrasound and peripheral vascular interventional procedures.)*

You hear a lot about people getting stress tests, but just who really needs one? Since one-quarter to one-third of heart attacks occur without prior symptoms, most adults over 40 should consider having a stress test.

Certainly anyone with symptoms of blocked heart arteries should also be evaluated – chest pressure, breathlessness, burning in the neck, jaw, or back, either at rest or following physical activity. Sometimes, even discomfort that feels like heartburn can be due to blocked arteries.

In some cases, people without any symptoms at all should be considered for a cardiac stress test. For example, you should consider one if you have risk factors such as diabetes, high blood pressure, smoking, high cholesterol levels, or a family history of heart disease.

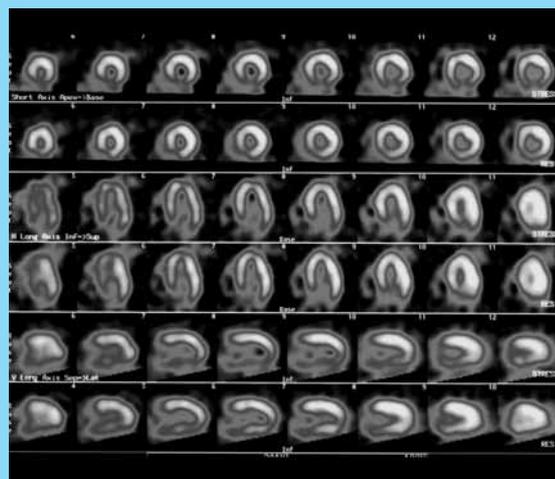
Apart from its advantages in detecting blocked heart arteries, cardiac stress testing can offer very useful information about your cardiac health. Evidence shows that people who are able to perform at high exercise levels on a stress test are much less likely to experience a heart attack in subsequent years, regardless of underlying blockage. This can be reassuring and give you peace of mind that all is well.

There are several types of stress tests. The nuclear and echocardiogram directed stress tests are more sensitive and specific for detecting the presence of blockages. The standard EKG guided treadmill stress test is more readily available.

The treadmill stress test procedure is simple. When you arrive at the doctor's office, a standard electrocardiogram is first performed, and heart rate and blood pressure are monitored. Then, while you're attached to the electrocardiogram machine, you start walking on the treadmill at a slow speed with a mild incline. As the test progresses, every three minutes the treadmill gets faster and steep-

er, and blood pressure and the electrocardiogram tracing is monitored throughout the study. The test concludes when you become fatigued or if a significant abnormality is detected on the electrocardiogram.

Only a consultation with your doctor will help determine if a stress test is right



for you. Any medical test result should be interpreted and acted on depending on the unique situation of that person, as no test is always perfect.

Why wait? Ask your doctor if now's the time for you to hit the treadmill and get that stress test sooner rather than later.



*(Michael J. Fogli is a subspecialist in magnetic resonance imaging, nuclear cardiology, echocardiography, stress echocardiography and transesophageal echocardiography.)*

# Get the Picture CT Scans of

When doctors look inside your heart these days, they use many high-tech, sophisticated imaging techniques to see exactly what's going on.

CT (Computed Tomography) scanners are cylindrical machines that produce three-dimensional x-rays. Recent technological improvements have led to dramatically improved and detailed CT scans of the heart and the coronaries, the blood vessels that supply the heart.

There are two types of CT scans of the heart: a CT calcium scan, and a CT angiogram (CTA). The CT calcium scan (Figure 1) is simpler, and less precise. It counts the calcium deposits in the coronary arteries. The higher the calcium count, the more likely it is that there is significant coronary artery disease, raising the potential of angina or heart attack

Figure 1

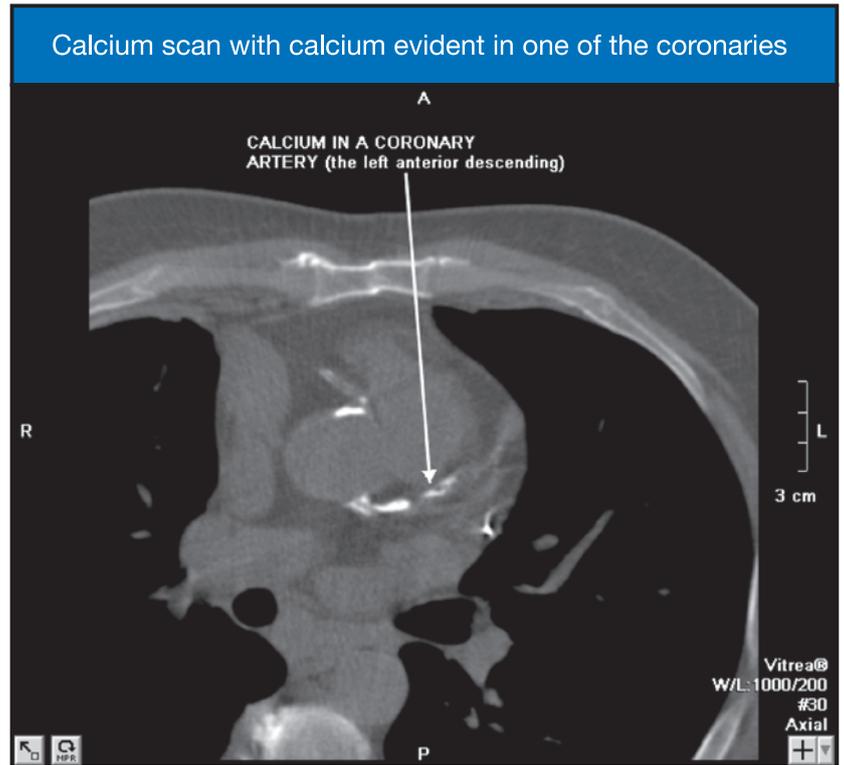
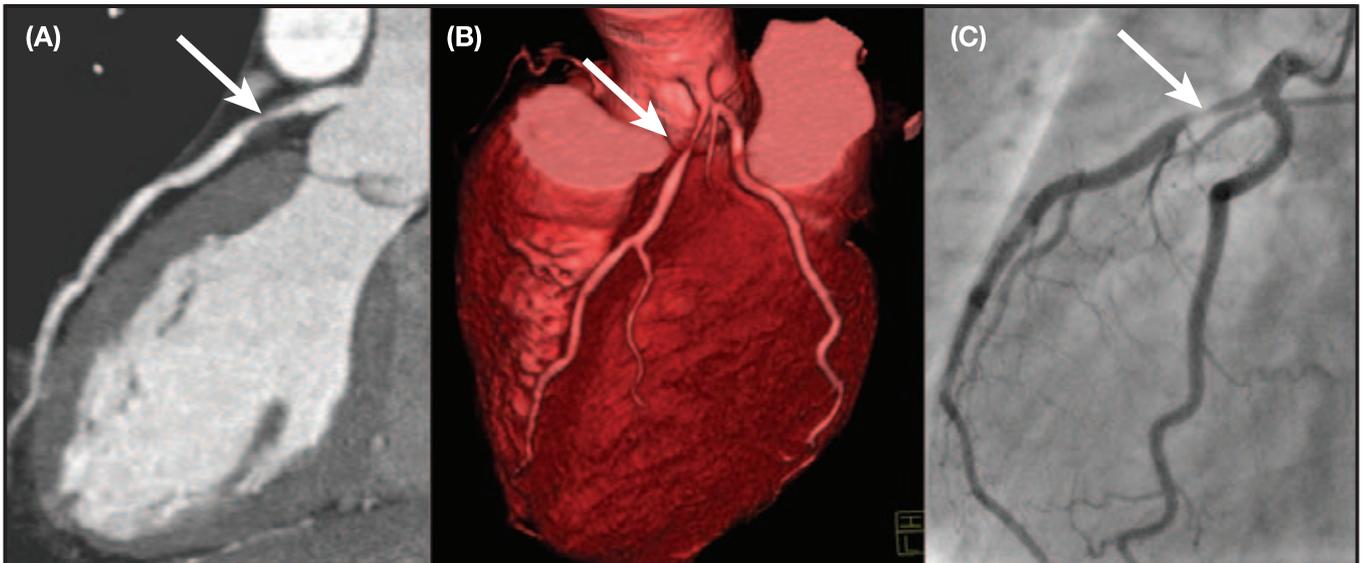


Figure 2



**Figure 2.** (A) and (B) are CTA images of the left anterior descending coronary with a severe stenosis (arrows). (C) is an invasive angiogram – the traditional heart catheterization – image of the same vessel. Images are all remarkably similar.

# the Heart

in the future. This scan is most useful for a person who does not have chest pain, but who is concerned about the risk of having a heart attack. Calcium scans are not detailed cardiac pictures, and are not a good choice for a patient with symptoms.

Recently, faster CT scanners have been developed which take multiple image slices of the heart – the best can take 64 slices – and reassemble these slices into high-quality, non-invasive images of the coronaries (figure 2). Oprah Winfrey and Matt Lauer both had these CTA scans done on national television. The precise role of CTA is being debated. In many cases, however, CTA will be able to replace invasive cardiac catheterization to diagnose or rule out coronary disease in patients with chest pain or other symptoms. CTA is an accurate, non-invasive test that identifies patients at risk of a heart attack.



*(Roger D. Des Prez is a noninvasive cardiologist with subspecialty expertise in echocardiography, nuclear cardiology and transesophageal echocardiography.)*

# CARDIAC REHABILITATION

## A RETURN TO GOOD HEALTH

When you or someone you love has a heart attack, cardiac rehabilitation is extremely important in the recovery process to get back in the swing of things. Coronary heart disease is the leading cause of death for both men and women in the United States, but it is also a major cause of physical disability. Cardiac rehabilitation helps patients resume active, productive lives. Importantly, it also helps prevent future cardiac events.

Basically, cardiac rehabilitation is a medically supervised program designed to help heart patients recover quickly and improve their physical and mental health. Who doesn't want to return to the life of good health they once enjoyed?

Cardiac rehabilitation strives to return the patient to the best possible health and to reduce the risk of recurrent cardiac illness. This requires a multidisciplinary approach. Cardiac rehab programs include the following:

- Counseling, so the patient can understand and manage the disease process
- Beginning an exercise program
- Helping the patient modify risk factors, such as high blood pressure, smoking, high blood cholesterol, physical inactivity, obesity and diabetes
- Providing vocational guidance to help the patient return to work
- Informing the patient about physical limitations
- Providing emotional support

Fifty years ago, patients who survived a heart attack were confined to bed rest for two months or longer and then urged to limit physical activity. In the early 1960s, cardiac researchers realized that this was

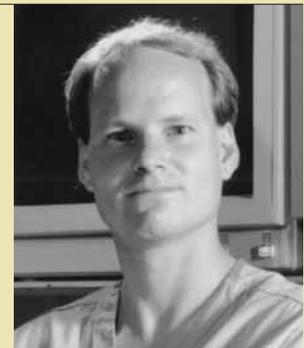
the wrong approach. They realized that cardiac patients who became active early had much better recoveries than patients who stayed in bed for extended periods. Comprehensive rehab programs eventually grew to include four phases.

Medicare has approved cardiac rehab for patients who have had a heart attack, coronary artery bypass graft surgery, coronary stent or balloon procedure, heart valve surgery, heart transplant or have stable angina.

A 20% reduction in overall mortality and a 26% reduction in cardiac mortality demonstrate the tremendous benefits from cardiac rehabilitation.

Cardiac rehab is also safe. The occurrence of cardiac events during supervised exercise is rare, ranging from 1 per 50,000 to 1 per 120,000 patient-hours of exercise.

For patients who want to return to their best possible functional status and reduce their risk of a recurrent heart attack, cardiac rehab is a crucial component.



*(Gregory Johnsen is an interventional cardiologist with expertise in cardiac catheterization, angioplasty and related interventional procedures, such as stents and atherectomy.)*



A new way to  
look at exercise

# PILATES

**If an hour of aerobics leaves you feeling more tired than refreshed, it may be time to discover something new in fitness — Pilates.**

The Pilates (pronounced pul-LAH-tees) method of body conditioning is an exercise system using specially designed equipment to improve flexibility, strength, circulation, and muscle mass without building bulk. The method involves a series of slow, controlled movements, most done while lying down, that bring together the mind and body, an experience that some liken to yoga.

“The emphasis is on the quality

of the movement as opposed to the quantity of the movement,” says Amy Matton, owner of Body Work in Westport, Connecticut, and a certified pilates method instructor. “A few quality movements done properly are better than more done sloppily.”

## **Not Just Another Passing Fad**

While pilates may be gaining in popularity, it’s not a fad that will come and go. The method has been around for 70 years. It was started by a German immigrant who wanted to build up his own body, and it was later embraced by the dance community.

Dancers have used the pilates method for years because it concentrates on the “powerhouse” area of the body — the abdomen, lower back — and builds a strong back while toning muscles.

Celebrities such as Candice Bergen and Glenn Close, as well as professional athletes, including Kristi Yamaguchi and the San Francisco 49ers, have also implemented the technique.

## **The Mind/Body Connection**

The key to pilates is using spring-resistant machines, such as the Universal Reformer, Cadillac, Spine Corrector Barrel, Chair, Tower, and Trapeze Table. Certified instructors help people learn how to breathe properly and concentrate on their muscles while doing exercises that target different areas of the body.

“You’re focusing on using several different muscle groups at one time, which requires a lot of thought,” Matton explains. “But in life, you rarely use one muscle group at a time. Because it

requires more thought, some people think it has a meditative quality. You really have to focus and work hard to execute the exercise properly.”

Matton says pilates exercises can be done by anyone, from couch potatoes to pregnant women, to people in rehabilitation programs to active sports enthusiasts.

“Some people are very athletic and find pilates helps them with their sport or activity,” she says. “Other people are post-partum and are looking to get back into shape or stay in shape.”

Pilates has been credited with eliminating or helping heal back-



aches, slumped shoulders, potbellies, and torn ligaments.

The Pilates Studio in New York City certifies instructors after 600 hours of classroom time and hands-on experience. Matton's instructors are all pilates-certified.

Because the pilates method is becoming so popular (“Every pilates teacher I know is struggling to keep up with the amount of people who want to take classes,”

**People are looking for something that is effective and can make them strong and give them an appearance they're looking for but that's also a little more serene.**

Matton says), several facilities are teaching pilates without the equipment and sometimes without certified instructors.

### **A Trained, Knowledgeable Source**

The Westport YMCA offers a “mat class” in pilates that is taught by a pilates-certified instructor.

“It's a different type of class without the equipment,” explains Suzy Gregory, Director of Group Exercise at the YMCA.

“The exercises are designed to use the body's weight and gravity to tone the body. It is a wonderful method of training the body to be strong and supple.”

The Westport YMCA has offered a well-attended pilates method class for several years. “People are intrigued by it because movie stars use it and it's becoming popular everywhere,” says Gregory. “It's a good complement to the way people are thinking these days because it's not pounding your body to death.”

Matton agrees. “In the '80s, peo-

ple did a lot of aerobics and high-impact stuff. But ultimately bodies took some wear and tear. People are looking for something that is effective and can make them strong and give them an appearance they're looking for, but that's also a little more serene and leaves you feeling invigorated and not wiped out.”

### **Join the Pilates Movement**

Matton gives new clients a one-on-one session, then offers them mat classes for pilates floor work and small-group classes (one to



four people with an instructor) to use the equipment. Unlike many fitness centers, Body Work does not play music in the background.

“I often hear people say how they develop an increased awareness of their body, how they're walking, standing, and moving,” Matton says. “We've gotten more sedentary, spending more time behind desks all day and getting out of touch with our bodies.”

# Heart Failure in Adults A Major and

Cardiovascular disease is the number one cause of death in the modern world. Modern medicines, interventions, devices, and advanced surgical techniques allow patients to live longer and richer lives. As the population ages, more patients will experience a clinical syndrome called heart failure. It is the most common diagnosis in hospitalized patients over age 65.

causes for impaired pumping: coronary artery disease, heart attack, severe leaking or blocked heart valves, high blood pressure, infectious agents (viruses), and toxins (including certain drugs and medicines).

There are some patients who have heart failure symptoms and a normal ejection fraction. These patients have heart failure from the inability

ized each year with heart failure as a primary diagnosis.

The diagnosis of heart failure is made with a detailed history and physical examination. Patients with heart failure can present with a wide variety of symptoms that include shortness of breath (with or without exertion), reduction in exercise capacity, orthopnea (laying down with head elevated in order to breathe), paroxysmal nocturnal dyspnea (waking at night or from sleep to sit up and breathe), and edema (swelling). Identifying the etiology of the heart failure condition is important for treatment plans. Identifying risk factors such as hypertension, diabetes mellitus, high cholesterol levels, physical inactivity, obesity, tobacco use, excessive alcohol use, and excessive salt intake can aid in determining those patients at risk for developing heart failure. Directing treatment towards these risk factors may decrease heart failure incidence.

Treatment of patients with heart failure starts with nonmedical measures. Lifestyle changes include weight loss, exercise, smoking cessation, and sodium (salt) restriction. Cessation from excessive alcohol is important.

Until recently, doctors thought when the heart was damaged, it could not recover. Today, by using a combination of medicines, many patients can have significant improvement in heart functions. Some patients waiting for heart transplantation have recovered enough function with medical therapy to no longer need the transplant.

Occasionally, when medicines and lifestyle changes are not enough, surgical intervention is necessary. Implantable devices called defibrillators improve survival from sudden death, common in patients with



Heart failure is a condition where the heart is unable to keep up with the demands of the body. Symptoms of heart failure include shortness of breath, diminished exercise capacity, swelling of the legs and abdomen, and weight gain due to fluid retention. In heart failure, the heart pumps less forcefully and fully than normal (systolic heart failure). A normal heart will pump out approximately 55 to 65% of the blood that fills it with each heartbeat (a number known as an ejection fraction). Hearts that pump less than 40% of the blood are said to have impaired pumping ability (left ventricular systolic dysfunction). There are many

of the heart to relax as it fills with blood (diastolic heart failure) due to increased heart muscle stiffness. Diastolic heart failure (stiff heart) is often due to high blood pressure.

Heart failure is a major and growing problem. An estimated 5 million people in the United States have clinical heart failure. Approximately 20 million people have risk factors for heart failure or have asymptomatic damaged hearts. About 550,000 new patients are diagnosed with systolic heart failure each year. Heart failure patients will have 12 to 15 million office visits to physicians and account for 6.5 million hospital days. There are 1 million patients hospital-

## Growing Problem

advanced heart failure. Coronary artery bypass surgery and valve replacement/repair can improve cardiac function. Coronary revascularization with angioplasty and stenting can also be utilized. In some cases, surgery to modify the shape of the left ventricle from a round shape to a cone-shape will help with cardiac efficiency and improve heart failure symptoms. For a limited number of patients with end-stage heart failure, heart transplantation is the best therapy.

Heart failure has high death rates, frequent hospitalizations, potentially poor quality of life, and complex treatment regimens, as well as strict lifestyle changes. Knowledge about heart failure is important, so that patients with risk factors can be identified and appropriate treatments started. If patients at risk are followed and treated early, progression of heart failure can be stopped, reversed, or perhaps prevented altogether.



(Alan Kaneshige is a noninvasive cardiologist with expertise in adult echocardiography, stress echocardiography and transesophageal echocardiography.)

# Pacemaker and Defibrillator Technology

## Restoring Life's Normal Rhythms

In August of 1953, Dr. Paul Zoll created the first pacemaker to restore a heartbeat to a dying patient. The "pacemaker" consisted of an external stimulator connected to a needle placed through the skin into the heart. Although it only worked briefly, the field of cardiac rhythm management was born.

Dramatic progress has been made over the past half century in the development of cardiac pacemakers and, more recently, implantable cardioverter-defibrillators (ICDs). Today, over 300,000 pacemakers and 100,000 ICDs are implanted in the United States annually by electrophysiologists, cardiologists who specialize in cardiac rhythm disorders.

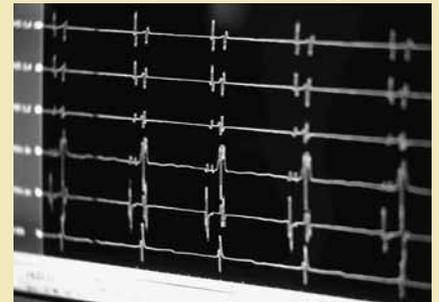
What's the difference in pacemakers and ICDs? *Pacemakers* are implantable devices, which are able to prevent the heart from beating too slowly. Symptoms can include passing out (the medical term is *syncope*) or simply fatigue. Some patients (like Dr. Zoll's patient described in the introduction) lack any significant heartbeat, and the pacemaker becomes a life-saving device. For others, however, the heartbeat is too slow to maintain enough oxygen to the body – leading to fatigue. In these patients, implantation of a pacemaker is performed solely to improve the quality of life. The impulses of the pacemaker are perceived as normal heartbeats, and the patient is completely unaware of when the pacemaker is active.

Implantable cardioverter-defibrillators serve a quite different purpose. When a patient suffers *Sudden Cardiac Death* (SCD), usually the cause is an ineffective, very rapid rhythm or a quivering of the heart. Understanding how to prevent this problem is a major health care issue since approximately 500,000 people die annually from SCD! The only way to terminate these rhythms is delivery of a large jolt of energy to the heart to reset the rhythm. For this reason, there has been increasing public awareness on improving access to *Automatic External Defibrillators* (AEDs).

People who are at increased risk, however, cannot rely on a nearby AED (not to men-

tion a Good Samaritan to operate it promptly and effectively!). Therefore, patients at elevated risk of SCD are implanted with ICDs. Typically, patients who receive ICDs are those who have suffered a large heart attack and/or suffer from congestive heart failure. Another group of patients at high risk are those who have inherited a genetic predisposition for development of lethal arrhythmias. These are people with a strong history of sudden death in young family members.

Implantation of pacemakers and ICDs involves placement of a lead (essentially an insulated wire) into a vein under the clavicle (collarbone) which is directed into the heart under X-ray guidance. The lead is then attached to the pacemaker or ICD generator



(essentially the computer) which is placed under the skin. In some instances, the implanting physician may choose to implant two or three leads, depending on the underlying heart condition. The entire procedure usually lasts under one hour.

As you can see, we have come a long way since Dr. Zoll's initial landmark attempt at restoring the rhythm of life. Today's implantable cardiac devices dramatically improve symptoms in many patients, as well as prolong their survival.



(David Sandler is a cardiologist with subspecialty expertise in electrophysiology.)

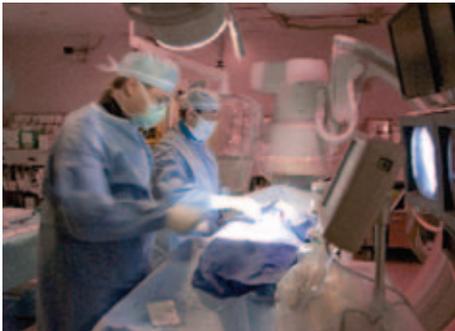
# Nobody Does It Better

## Oklahoma Heart Institute

Nobody knows Oklahomans hearts better than Oklahoma Heart Institute. Our patients are living proof. And no one in Tulsa has better success rates. When it's your heart on the line, isn't that what you want?

The 21 doctors at Oklahoma Heart are subspecialists in all areas of cardiology and endocrinology. That makes them uniquely qualified to care for any kind of heart problem. And that's what they have been doing successfully for over 16 years.

They also know how to prevent heart attacks, strokes and chronic heart disease. These are the #1 killers in America. But with careful, detailed evaluations and screenings, the doctors at Oklahoma Heart can actually



prevent these life-threatening problems. They tailor prevention programs to each patient, treating the factors that cause heart attack and stroke and related metabolic diseases.

Be it cholesterol, blood pressure, diabetes, smoking cessation, or customized exercise programs, patients at Oklahoma Heart Institute learn from the experts how to actually prevent cardiovascular problems before they occur – in themselves and their families.

With the only Division of Endocrinology incorporated into a Tulsa cardiology practice, Oklahoma Heart is unique in offering patients a team approach to heart attack prevention. Four endocrinologists' expertise in the treatment of diabetes and other metabolic diseases, in combination with Oklahoma Heart's cardiovascular

subspecialization, can slow the progress of cardiovascular disease in many patients, and, in some cases, prevent it altogether.

If, however, someone does encounter a heart problem, Oklahoma Heart diagnoses it quickly and with precision. They offer state-of-the-art Diagnostic Imaging Services performed at both the Utica and South Pointe offices and throughout northeast Oklahoma.

So, whether it's a nuclear stress test, cardiac MRI or ultrasound imaging that's needed to pinpoint a diagnosis, testing is easy for patients to access in a convenient setting. The Cardiovascular MRI and Nuclear labs at Oklahoma Heart are the only certified labs in the state, ensuring patients get the best technology available. In fact, their Cardiovascular MRI imaging is the most accurate cardiac assessment available – and with no radiation. Studies are also compared to each other at Oklahoma Heart, so any change in cardiac status is noted. That shows the physicians if the patient is being treated effectively, and, if follow-up studies show blockages in the arteries are progressing, therapy can be intensified. Once a diagnosis has been made, if there is a problem, treatment is handled by the Oklahoma Heart subspecialist in that area.

If an interventional procedure is called for, with the latest advances in technology and years of specialized training and experience, the interventional cardiologists at Oklahoma Heart Institute can treat blockages in the blood vessels to the heart. By using balloon and stent technologies, they prevent the need for heart surgery. Blockages can usually be treated in the hospital with only a one day hospital stay, and patients can return to work within a couple of days.

Within 90 minutes most heart attack patients have their heart attacks interrupted in the cath lab, frequently with little damage to the heart muscle. The interventional cardiologists at Oklahoma Heart Institute

were the first in Oklahoma to close holes in the heart in adult patients (ASDs and PFOs) percutaneously, without open heart surgery.

For patients with peripheral vascular disease, some so severe they are unable to walk, Oklahoma Heart Institute interventionalists offer the newest and best techniques to restore them to a normal life.

And for those with a rhythm problem, patients' hearts rest easier know-

**Within 90 minutes most heart attack patients have their heart attacks interrupted in the cath lab, frequently with little damage to the heart muscle.**

ing that Oklahoma Heart Institute pioneered many of the rhythm procedures being performed in Oklahoma. These include activity-sensing pacemakers, implantable cardiac defibrillators and bi-ventricular pacemakers.

In short, Oklahoma Heart Institute provides complete cardiology care, from prevention and diagnosis through treatment. Their patients are learning every day that it's really true – today, you don't have to die of heart disease.

*(Elaine Burkhardt is a writer, editor and publisher at Newsgroup Communications, a Tulsa-based advertising/public relations/publishing firm.)*

What's in a name?

everything.

17 cardiologists.  
4 endocrinologists.  
50,000 patients.  
98% success rates.  
*Quality Counts.*

**The Doctors of Oklahoma Heart Institute**

Wayne N. Leimbach, Jr., MD  
Robert C. Sonnenschein, MD  
Robert E. Lynch, MD  
James J. Nemecek, MD  
John G. Ivanoff, MD

Gregory D. Johnsen, MD  
Alan M. Kaneshige, MD  
Ernest Pickering, DO  
Edward T. Martin, MD  
Roger D. Des Prez, MD

Christian S. Hanson, DO  
Rebecca L. Smith, MD  
Tobie L. Bresloff, MD  
David A. Sandler, MD  
Raj H. Chandwane, MD

D. Erik Aspenson, MD  
Frank J. Gaffney, MD  
Michael J. Fogli, MD  
Eric G. Auerbach, MD  
Kelly Flesner-Gurley, MD  
Kambee Berenji, MD

918.592.0999/1265 South Utica Ave/9228 South Mingo/www.oklahomaheart.com

Oklahoma Heart Institute





## Heart disease doesn't fight fair. We can help you fight back.

The next time you think a heart attack is something that happens to other people, here are a couple of facts to consider.

Heart disease is still the #1 killer of American adults. And more women die each year from heart disease than from all three leading cancers combined.

The good news is, we have more resources than ever to help you fight back. With a unique blend of industry-leading technology and old-fashioned TLC, we can help you with both the prevention and treatment of this deadly disease.

To find out more about cardiac care at SouthCrest, call us or log on to our Web site today.

