

Knowing Changes EverythingSM

Heart & Soul

Summer '09

Useful Information from the Cardiovascular Program at Upstate University Hospital

Welcome!

Dr. Villarreal and I are pleased to announce the opening of the new Cardiopulmonary Surgery and Cardiology units. They are located in the East Tower addition of University Hospital of Syracuse. The new units strengthen our commitment to our community ensuring the best possible outcomes for both patients and their families.

This issue of Heart & Soul will focus on the increasing population of the Congestive Heart Failure patient. We will highlight current medical and surgical treatments, diet, exercise and drug therapy. We look forward to increasing the awareness and understanding of this condition.

To your health,

Dr. Gregory Fink
Chief of Cardiopulmonary Surgery

Daniel Villarreal, MD
Chief of Cardiology

Website: <http://www.upstate.edu/heart>

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UNIVERSITY HOSPITAL

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Treating Heart Failure

Luna Bhatta, MD, FACC



The heart is a pump, which ejects blood filled with nutrition to different parts of the body. When the heart cannot pump effectively, the body goes through a sequence of changes leading to the condition we call heart failure. Heart failure is a very common and growing public health problem in the United States. Approximately five million patients in this country have heart failure. It is a syndrome, which is to say a collection of signs and symptoms that represent the end-stage of a number of cardiac diseases like coronary artery disease, valvular heart disease or even poorly controlled blood pressure.

Four Stages

After the initial diagnosis, heart failure patients are classified into four stages and classes of heart failure. The treatments differ depending on the stage. Over the last few decades, a great deal of progress has been made in the development of new medications and devices to treat heart failure. As a result, patients are living longer and feeling better. However, heart failure patients are continuously threatened by a potentially lethal rhythm disorder called ventricular* arrhythmia and are prone to a

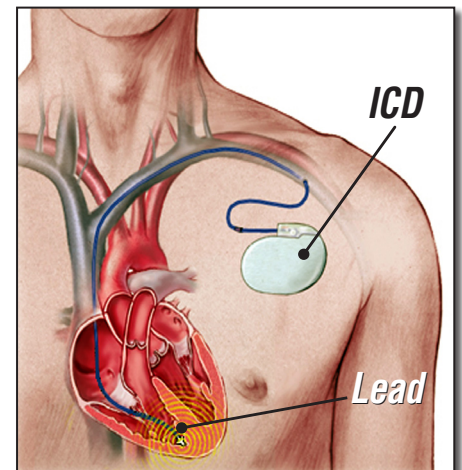
*The ventricles are two of the four chambers in the heart (the other two are called atriums or atria) that pump blood into the aorta (left ventricle) and the pulmonary or lung artery (right ventricle).

slow abnormal rhythm called bradyarrhythmia.

They are at the risk of sudden and unexpected death mostly from ventricular rhythm disorders. Unfortunately, there are currently no medicines that can effectively treat these rhythm disorders.

Implantable Defibrillators

The implantable cardioverter defibrillator can effectively detect and treat abnormal rhythm disorders. It is not the same as a pacemaker. The device is operated by a battery (pulse generator) with is connected to one or two wires (leads) placed inside the patient's heart via a big vein that runs under the collar bone.



An implantable cardioverter-defibrillator (ICD) detects a rapid heartbeat coming from the bottom of the heart.

Most of the time, the battery is implanted under the skin and soft tissues on left or right shoulder area. It is minimally invasive. The patient can be discharged after the implant on the same day after four hours of

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Heart Research at Upstate

Cardiovascular research has been conducted for many decades at Upstate Medical University. Below are two studies underway.

American Heart Assoc. Funds Study

Christian Zemlin, PhD, a Research Assistant Professor in the Department of Pharmacology, has established an independent research program under an American Heart Association grant focused on “Fiber Organization in the Myocardial Sleeves of the Pulmonary Veins and the Initiation of AF.” More simply put, the research will test mechanisms of atrial fibrillation, the most prevalent heart rhythm disturbance. The condition is often without symptoms and is not in itself generally life-threatening. However, it may result in palpitations, fainting, chest pain, or congestive heart failure. Patients with AF usually have an increased risk of stroke (up to 7 times that of the general population). Stroke risk increases during AF because blood may pool and form clots in the poorly contracting atria. The results of this study may lead to recommendations to improve the efficiency of cardiac ablation which is used to destroy the short circuit that is disturbing the rhythm.

National Institutes of Health Research Grant Award

The National Heart, Lung and Blood Institute, the second largest institute at the National Institutes of Health headquartered in Washington, DC, supports research related to the causes, prevention, diagnosis, and treatment of heart, blood vessel, lung, and blood diseases and sleep disorders. **Richard Veenstra, PhD**, Professor in Upstate’s Department of Pharmacology, recently received his fourth year of funding for his research on “Gap Junctions and Ionic Currents in Developing Heart.” This research project examines the voltage gating properties of myocardial gap junctions during cardiac action potentials and the modulation of connexin 40 gap junctions by intracellular polyamines. In short, and in English, this study will give us a better understanding how arrhythmias and slow heart function get their start.

“This research project examines how electric current flows from heart cell to heart cell through a specialized channel called a “gap junction.” These gap junctions are formed by proteins called connexins. The two main connexins in the heart differ in their ability to carry current and switch on and off with changes in cell activity. This project also examines how to better regulate the two connexins to prevent abnormal heart rhythms that are caused by damaging electrical conduction during a heart attack.”

(continued from front cover)

observation. It is a common procedure and very effective, although batteries must be replaced generally after 10 years.

Cardiac Resynchronization Therapy

About one third of the patients with heart failure have dyssynchronous (uneven) motion between the left and right side of the heart leading to ineffective pumping. This is caused by the delayed motion of one side (mostly left) compared to the other side of the heart. Despite taking their medications, patients with this condition continue to do poorly. An option can be the addition of an extra wire (lead) to the implantable

defibrillator or a pacemaker. This lead is also threaded to the left side of the heart. This lead in combination with the other one or two leads can help the heart pump in a more synchronized and effective manner.

It is not always possible to find a good vein to hold that third lead. In that case, the third lead can be placed directly on the surface of the left side of the heart with very small incisions on the chest wall. In collaboration with Dr. Charles Lutz, one of our cardiac surgeons, we have been able to place the third lead on several of our heart failure patients; in some cases using the daVinci Robot.

Heart failure is a complex problem. Proper management of patients requires collaboration between different medical and surgical specialties. We are fortunate to have a team of physicians continuously working to help our heart failure patients live longer and feel better.

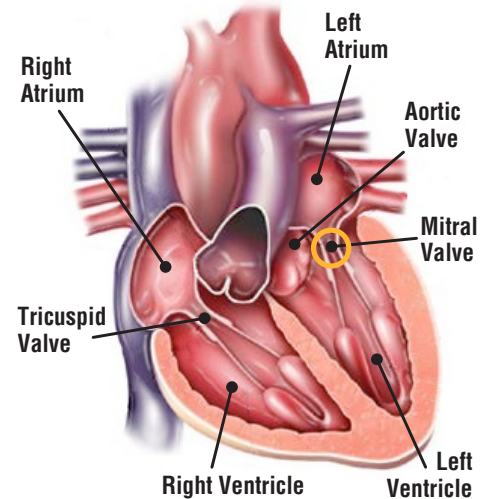
Mitral Valve Studied

Over a four-year period, Upstate cardiac surgeons studied the success rates associated with conventional (open chest) and robotic-assisted (minimally invasive) approaches to mitral valve repair. They learned that each had essentially equivalent results, although robot patients returned more quickly to full activity than their conventionally-treated peers, and had lower risks of blood transfusion and post-operative atrial fibrillation (irregular heart beat). It is important to note, however, that in three months it didn't matter which approach was taken. The Upstate study was conducted by Cardiac Surgeon Charles Lutz MD, assistant professor of surgery at Upstate Medical University, and presented at the International Society of Minimally Invasive Cardiac Surgery in June 09.

It was also reported that Upstate's mitral valve repair rate (regardless of approach) surpassed 90 percent while the national rate ranged between 50 and 70 percent, depending on the study consulted.

What is Mitral Valve?

The mitral valve is one of four valves in the heart. It lies on the left side of the heart between the left upper chamber (atrium) and lower chamber (ventricle). The valve has two flaps called leaflets that close every time the ventricle squeezes to pump blood out of the heart. If the mitral valve does not close properly, some of the blood from the ventricle is forced back up (regurgitated) into the left atrium instead of flowing out to the rest of the body. The added workload on the heart and increased blood pressure in the lungs can cause problems although many people with the condition have no symptoms. This condition is called

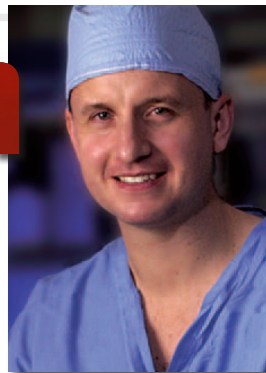


mitral valve prolapse or mitral valve regurgitation. Surgeons repair the valve by narrowing the ring around the valve and reshaping the valve leaflets. A plastic support ring is stitched around the valve to bring the leaflets closer together.

Meet the Team



Gregory Fink, MD, FACS (left)
Chief, Division of
Cardiothoracic Surgery



Charles Lutz, MD (above)
Division of Cardiothoracic Surgery



Upstate University Hospital's Valve Repair Team:
(front row)
Julia Williamson, ST
William MacGregor, ST
Shannan Card, RN
(back row)
Stephen Vaughn, CCP
Sharon Doupe, RN
Patricia Kuntz, RN
Velma Thomas, ST
Leanne DeVito, ST
Judi Markee, RN

Upstate Earns 5 Stars for Valve Surgery

5

HealthGrades Inc., a prominent, national health-care rating organization, has awarded its 5-Star designation to University Hospital's valve replacement and repair surgery program. It is the highest ranking offered by HealthGrades.

The most important ratings, however, and the ones we value the most, come from our patients.

If you or a friend have a valve or other heart condition that requires a surgical solution, Upstate's cardiac surgery team is standing by.



Exercise! Yes, you can!

Many people who have been diagnosed with heart failure believe they can no longer exercise. However, if done properly, exercise can help you feel better, make it easier for you to complete daily tasks, and may even improve your heart's function.

If you are not used to exercising, it is very important to begin slowly. Adding just 5 or 10 minutes of exercise to your day will help you move toward better health. Most people with heart failure should aim to accumulate 30 minutes of physical activity on most days. However, if you are not exercising now, it may take you a few months to reach this level. If you cannot exercise for 30 minutes continuously, you can spread several 5-10 minute blocks of activity throughout your day.

There are many different ways to exercise. The best type of exercise for you is one that you enjoy, because you will be more likely to stick with it. Exercising with a family member

or friend can also help motivate you to exercise and make it more fun. Walking is the easiest activity for most people, because it doesn't require any equipment and can be done almost anywhere. Biking and swimming are also good choices.

Muscle strengthening exercises using weights, resistance bands, or just resistance from gravity can help you improve strength and balance and reduce joint pain. Even enjoyable activities like golf, gardening, shopping, or taking your grandchildren to the zoo can be considered exercise when they involve continuous movement.

It is important to do gentle stretches or walk at an easy pace for a few minutes to warm up before and cool down after each session. You don't need expensive shoes to exercise, but you should make sure you have well-fitting, supportive

footwear to decrease the risk of injury. You should never exercise to the point of complete exhaustion. You should be able to comfortably carry on a conversation while exercising. If you are breathing so hard that it is difficult to speak, you should stop and rest.



Make sure you continue to monitor yourself as your doctor has instructed you, including taking your pulse and weighing yourself daily. Be sure to talk to your doctor before beginning a new exercise program, or if you have new symptoms while exercising, such as dizziness, feeling like your heart is racing, or becoming

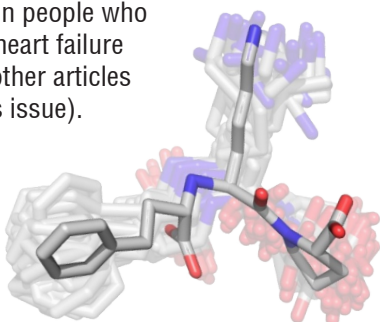
very short of breath with only light activity. A physical therapist can also help design a safe and effective exercise program for you.

The most important thing is to just start moving a little more each day, and to have fun!

By Kerry Walsh, PT, DPT

Ace Inhibitors for Managing Blood Pressure

Angiotensin-Converting Enzyme inhibitors (ACE-inhibitors) is a class of medications commonly used to treat high blood pressure. They work mainly in the kidney by preventing the formation of a hormone that increases blood pressure. In addition to blood pressure benefits, ACE-inhibitors also have been shown to protect the kidneys in patients with diabetes and chronic kidney disease, and to protect the heart in patients after a heart attack. It is also used in people who have heart failure (see other articles in this issue).



Commonly prescribed ACE-inhibitors include:

- Benazepril (Lotensin®)
- Captopril (Capoten®)
- Enalapril (Vasotec®)
- Fosinopril (Monopril®)
- Lisinopril (Zestril®)
- Moexipril (Univasc®)
- Perindopril (Aceon®)
- Quinapril (Accupril®)
- Ramipril (Altace®)
- Trandolapril (Mavik®)

ACE-inhibitors are generally well tolerated but can have potential side effects. The most common include; low blood pressure, headache, dizziness, nausea, vomiting rash, and a persistent dry cough.

Ace-inhibitors can also raise the amount of potassium in your blood. Your doctor will monitor your blood potassium levels while you are taking your medication to watch for this side effect. Another side effect, known as

angioedema, can occur rarely with ACE-inhibitors. Angioedema is an allergic condition that involves swelling of parts of your body and normally can include the face, abdomen, and the hands. It is important to let your prescriber know if you experience any side effects from any medications you are taking.

Like most medications, ACE-inhibitors work best when they are taken correctly. Most ACE-inhibitors are taken once or twice daily and should be taken consistently at the same time(s) of day. If you miss a dose, take the missed dose as soon as possible. If it is almost time to take your next dose, wait until the next dose. Do not double your dose or take extra doses.

Make sure you take your ACE-inhibitor for as long as your prescriber tells you. If you have any questions or concerns about your ACE-inhibitor therapy, please contact your prescriber or pharmacist.

Eat Less Sodium for a Healthier Heart

A primary line of defense in the treatment of heart failure is controlling dietary sodium intake to around 2,000 milligrams per day. However, between adding salt (sodium chloride) during cooking, adding salt at the table, and consuming processed foods, most Americans consume more than two times the recommended amount of sodium.

Limiting sodium may not be the easiest thing to do for someone who has always used the salt shaker or never had to limit processed foods, but it is not impossible. In fact, here are four easy steps that can help significantly decrease the amount of sodium consumed daily:

1. Remove the salt shaker from the table.

If you've always used the salt shaker, it may take a little while to become accustomed to not using it, however, eventually your taste buds will adapt and you won't even miss it.

2. Start reading labels.

Just reading the labels will help you to be aware of the amount of sodium in certain foods and help you to make better choices. It is also important to understand some of the claims that are made in regards to a product's sodium content:

Sodium Free	less than 5mg of sodium per serving
Very Low Sodium	35 mg of sodium or less in each serving
Low Sodium	140 mg of sodium or less in each serving
Reduced or Less Sodium	Contains at least 25% less sodium in each serving than the original product
Light in Sodium	Contains at least 50% less sodium in each serving than the original product
No Salt Added	No salt has been added in the preparation of the product however, it may still contain salt.

Be aware that products labeled as reduced sodium, less sodium, or light may still contain a significant amount of sodium.

3. Eat less processed foods.

Cutting down on the amount of processed foods eaten is an easy way to help decrease sodium intake. Groceries from the periphery (outer circles) of the market will be fresher, less processed, and contain less sodium – fresh fruits, vegetables, and meats will have less sodium than their processed counterparts.

4. Experiment with herbs and spices in place of salt

Using fresh or dried herbs, spices, or other flavorings instead of salt will introduce you to a whole new world of flavors. If cooking with herbs, spices, and other flavorings is new to you, use the chart below as a reference:

Food	Suggested Seasoning
Beef	Bay leaf, basil, garlic, dry mustard, marjoram, oregano, parsley, pepper, onion
Poultry	Allspice, basil, bay, dill, curry, cinnamon, fennel, garlic, ginger, mustard, lemongrass, paprika, rosemary, saffron, sage, savory, tarragon, thyme
Pork	Basil, caraway seeds, clove, nutmeg, onion, parsley, rosemary, sage, apples, pineapple, chili powder, allspice, oregano
Fish	Anise, basil, bay, chives, cayenne, celery seed, curry, dill, fennel, garlic, ginger, lemon peel, lemon juice, marjoram, mustard, onion, oregano, parsley, rosemary, sage, thyme, tarragon, savory
Lamb	Curry, garlic, rosemary, mint
Veal	Bay leaf, curry, ginger, marjoram, oregano, onion, garlic

Less sodium doesn't have to mean less flavor with this scrumptious recipe containing less 140 mg of sodium per serving.

Grilled Rosemary Chicken

- 6 medium skinless, boneless chicken breast halves (about 1 3/4 pounds total)
- 1 tsp finely shredded lime peel
- 1/2 c lime juice
- 1 tbsp chopped fresh rosemary
- 1 tbsp olive oil
- 2 tsp sugar
- 2 cloves garlic, minced
- 1/4 tsp salt
- 1/8 tsp ground black pepper

Directions

1. Place chicken breast halves between two pieces of plastic wrap. Using the flat side of a meat mallet, lightly pound to an even 1/2-inch thickness. Place in a large resealable plastic bag set in a shallow dish.

2. For marinade, in a small bowl, stir together lime peel, lime juice, rosemary, oil, sugar, garlic, and salt. Pour over chicken. Seal bag; turn to coat chicken. Marinate in the refrigerator for 1 to 4 hours, turning bag occasionally.

3. Remove chicken from marinade, discarding marinade. Season chicken with pepper. For a charcoal grill, place chicken on the grill rack of an uncovered grill directly over medium coals. Grill uncovered for 10 to 12 minutes or until tender and no longer pink (170° F), turning once halfway through grilling. (For a gas grill, preheat grill. Reduce heat to medium. Place chicken on grill rack over heat. Cover and grill as above.)





New Heart Center OK'd for University Hospital

University Hospital has been given the go ahead by the state of New York to construct its new Heart and Vascular Center. Construction is expected to begin in Fall 09. The Center will house cardiology, electrophysiology, echocardiography, nuclear stress testing, EKG, a vascular lab and advanced imaging and catheterization services in a single location. Current heart and vascular services are spread among several hospital floors and two buildings off the hospital campus.

Occupying more than 18,000 square feet on the sixth floor of the hospital, the project will feature an aesthetically pleasing space and room for patient/family education as well as room to accommodate growth of the service, staff and practitioners.

University Hospital Heart Volunteers

Heart patients and their family members are full of questions and concerns. Many are overwhelmed and don't get to ask the questions that are most on their mind. How do we know this? From former heart patients! So, in 1982 a few dedicated heart patients, with the encouragement of University Hospital staff and physicians, launched a program called HEART VOLUNTEERS.

Unlike most volunteer positions at University Hospital, a prerequisite for service is that a candidate must be a heart patient. Currently there are 10 heart volunteers at University Hospital: Joan Scholl (Service Leader), Joe Cunningham, Carmen Spadaro, Belva Vlassapoulis, Morris Groskin, Tim Sturick, Herb Isaacs, Mary Andriello, Marcia Hannett and John Henderson. Ginny Haynes, a volunteer since the program started recently retired from volunteer service and was named an "Emeritus Volunteer," a special designation reserved for those who have made a unique contribution to the volunteer program.

*"Hopefully a heart volunteer made your journey easier and you'll consider 'paying it forward' by volunteering to help other heart patients."
Joan Scholl,
Service Leader,
Heart Volunteers*

Patients reading this article are encouraged, when the time is right, to consider volunteer service. For more information, kindly submit an application (www.upstate.edu/volunteers) and Rhonda Butler, volunteer manager, will contact you. If you have questions you may contact Rhonda directly at 464-6144.



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