



Sharing Mayo Clinic

Information and news for friends of Mayo Clinic | Winter 2012

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Singing praise after new esophageal cancer treatment

"I thank God for giving me the opportunity to go to Mayo Clinic. I received first-rate treatment, which contributed to the new chance at life that I have today."

– Jorge Rivera

Esophageal cancer took Jorge Rivera, 47, by surprise. An auto loan manager and a father of three, he had a full life and a passion for performing sacred music with his family.

Rivera, of San Juan, Puerto Rico, had "the usual" heartburn symptoms from what he describes as a typical Puerto Rican diet. But a routine endoscopy showed precancerous cells in the esophagus. Cancer cells were found in the sphincter (valve between esophagus and stomach) and in the stomach.

Suddenly, Rivera needed to make decisions about major surgery and cancer treatment.

Esophageal cancer is typically treated with an esophagectomy. Surgeons remove a portion of the esophagus and then reconstruct it using part of another organ, usually the stomach or large intestine. Surgery can be performed as an open procedure, with three large incisions, or laparoscopically, where surgical tools are inserted through tiny incisions. The traditional surgery is a high-risk procedure. Long-term side effects can include difficulty swallowing, frequent nausea and heartburn.

Benigno Varela, M.D., Rivera's oncologist in Puerto Rico, suggested a visit to Mayo Clinic in Jacksonville, Fla., where surgeons perform a new, minimally invasive surgery endoscopically — through a long, narrow lighted tube passed through the throat.

Within a month of the initial endoscopy, Rivera was under the care of Mayo Clinic specialists who confirmed his diagnosis. "We assessed the esophagus both through an endoscope and with an ultrasound endoscope, which uses sonar or ultrasound to measure the depth of the cancer," says

Michael Wallace, M.D., a Mayo Clinic gastroenterologist. "Mr. Rivera had an early cancer of the esophagus."

Rivera was a candidate for endoscopic removal of the cancer, without removal of the remaining esophagus, a procedure called endoscopic mucosal resection (EMR). Surgeons use a high-definition camera to make sure they have removed all of the cancer cells, and then a pathologist confirms results. Rivera's pathology report showed an aggressive cancer. "Even if we removed all the cancer, those cancer cells are at high risk of spreading to other organs and lymph nodes," says Dr. Wallace.



Jorge Rivera enjoys playing music with his father, Jorge Sr., weekly at Maria, Madre de mi Señor church in Guaynabo, Puerto Rico.

Rivera's doctors recommended complete removal of the esophagus. "Fortunately, the surgical procedure that we now offer, even for more aggressive cancer, is still a minimally invasive procedure that's done through small laparoscopic ports," says C. Daniel Smith, M.D., director of surgery at Mayo Clinic's Florida campus and a specialist in minimally invasive esophagectomy.

In April 2010, surgeons removed Rivera's esophagus and part of his stomach through small incisions in the abdomen and behind the collarbone. The surgery was done through small laparoscopic devices that allowed the surgeons to remove diseased tissue and reconstruct the esophagus and stomach without opening the chest.

Rivera was released from the hospital in one week and began eating solid foods a month after the surgery. His chemotherapy and radiation plan were administered in Puerto Rico, in close coordination with his Mayo Clinic physicians.

A year later, Rivera was cancer free, eating well and playing music.

"I persevered in wanting to sing again, and thank God I am fully recovered," Rivera says. He looked to his father, Jorge Sr., as a model of living life to its fullest no matter what happens. A construction accident decades ago left Jorge Sr. unable to walk. Today, father and son, along with other family members, play weekly at Maria, Madre de mi Señor church in Guaynabo, Puerto Rico. Rivera plays guitar and sings. His father plays Puerto Rican cuatro, a 10-string instrument.

"I thank God for giving me the opportunity to go to Mayo Clinic," says Rivera. "I received first-rate treatment, which contributed to the new chance at life that I have today." SMC

Virtual support for cancer survivors

In 2008, Herbert Wolfsen, M.D., Mayo Clinic gastroenterologist, and his colleagues, were looking for new ways to keep in touch with their esophageal cancer patients. Dr. Wolfsen's daughter, Christianne, a Mayo research assistant, suggested an online chat group using Facebook.

The Facebook community quickly became a forum where patients offered help and support to each other and their families. "Our patients and their families are focused and devoted to educating others about their experience with the diagnosis and treatment of this cancer," says Dr. Wolfsen. The Facebook group site is private and is accessed by Mayo Clinic invitation only.

Mayo Clinic offers many ways to connect via social media, including a channel on YouTube and a public Facebook community. Last year, Mayo Clinic launched an online social network to connect its global community of patients. Find all the links at sharing.mayoclinic.org.



Ricky Rinehart leads the way

Cancer survivor bikes the desert to deliver donation

To celebrate his "first birthday" after treatment for esophageal cancer, Ricky Rinehart, 54, rode his bike to Mayo Clinic — 213 miles across the desert from his home in Yuma to Phoenix, Ariz. Thirteen friends, family and co-workers joined him for the two-day ride last October. They delivered more than \$10,000 in donations for cancer research.

Rinehart's cancer was discovered in June 2010 during a routine physical. Mayo Clinic doctors performed a minimally invasive esophagectomy to remove the cancer. The procedure was developed by Mayo Clinic physicians and uses instruments passed down the throat as well as small incisions in the chest and abdomen. Surgeons in Arizona recently performed the 100th procedure using this technique.

"The type of surgery I had, they couldn't have even done it 10 years ago," Rinehart says. "They are able to do it because of research, development and the people who have been able to come up with new techniques to battle cancer."

Rinehart says it was great how community members chipped in to support cancer research. "It takes money to continue research, and it needs to continue," says Rinehart. He plans to make the desert bike trek annually to promote cancer research and the importance of regular checkups.

Seeing the light helps parkinsonism patient walk

It began with a headache in 2007. That was followed by weakness on his left side, a slight slurring of his speech and tremors. Doctors thought Wayne Puckett, then 42 and a father of five, had suffered a stroke.

But over the next two years, the headaches persisted. Complicated migraine was the new diagnosis. But the tremors worsened and Puckett, previously an active man, began to have trouble walking.

“Our local doctors couldn’t figure out what was happening. Our family doctor said it would be best to go to Mayo Clinic,” recalls Puckett, who lives outside Orlando, Fla.

A U.S. Postal Service worker, Puckett could no longer work. He was eager for answers. In early 2010, Jay Van Gerpen, M.D., neurologist and movement disorders specialist at Mayo Clinic in Florida, diagnosed Puckett with a form of parkinsonism.

Parkinsonism is the label for a broad spectrum of movement disorders that includes Parkinson’s disease. Common symptoms are tremors and bradykinesia, the medical term for slowness of movement. Dr. Van Gerpen says patients may have difficulty with what are usually automatic movements, such as swinging an arm or taking a normal stride.

Puckett experienced both. Putting one foot in front of the other was increasingly difficult. The severity of his bradykinesia led to freezing of gait (FOG), the temporary inability to initiate movement.

“We used to walk a lot, go to the park, the mall, just spend time with each other,” says his wife, Margarita. “But it would take a lot of energy for him to take a couple of steps.”

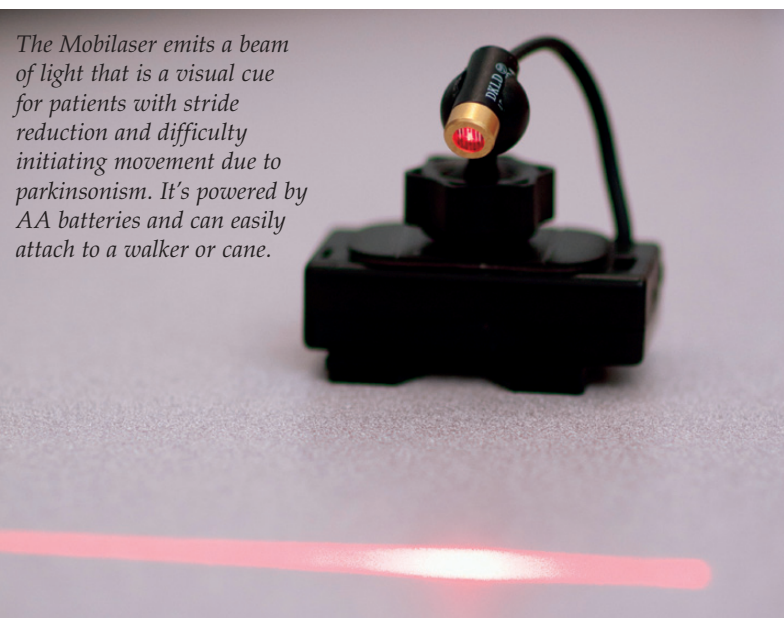
Dr. Van Gerpen offered a possible treatment — a new device he helped design to make walking easier.

He loaned Puckett a prototype of the Mobilaser. It attaches to a walker or cane and transmits a laser-generated beam of light that serves as a visual cue for patients with gait difficulties, particularly FOG.

“We’ve known for a long time that visual cuing can help alleviate stride reduction and cessation,” says Dr. Van Gerpen. In parkinsonism, the information to initiate a movement is not transmitted normally. “There’s a traffic jam,” he says. “By visualizing something — in this case, a



Wayne Puckett and his wife, Margarita



The Mobilaser emits a beam of light that is a visual cue for patients with stride reduction and difficulty initiating movement due to parkinsonism. It’s powered by AA batteries and can easily attach to a walker or cane.

“Our local doctors couldn’t figure out what was happening. Our family doctor said it would be best to go to Mayo Clinic.” – Wayne Puckett

Mayo Clinic seeking causes and cures for Parkinson's disease

Parkinson's disease is a nervous system disorder that develops gradually and affects movement, muscle control and balance. With advancing age, and the longer a person has the disease, difficulties with memory and thinking may occur, too.

Multidisciplinary teams of Mayo Clinic researchers are involved in many investigations, trying to understand Parkinson's and other movement disorders, finding their causes and developing better treatments.

Although no drugs slow the progression of Parkinson's disease, many symptoms can be effectively treated with medications, physical therapy or surgery.

Here are some highlights about research and treatment at Mayo Clinic:

Stopping tremors: In deep brain stimulation, surgeons implant electrodes into areas of the brain that control movement. The electrodes are connected to a pacemaker-like device that sends electrical pulses to the brain and helps control Parkinson's disease symptoms for some patients.

More definitive diagnosis: Researchers are looking for biological indications of Parkinson's in living patients. Charles Adler, M.D., neurologist at Mayo Clinic in Arizona, is collaborating with Banner Health on a new five-year, federally funded study. Mayo Clinic is collecting blood and spinal fluid samples from Parkinson's patients and comparing them to those of adults without Parkinson's. The goal is to discover early signs of Parkinson's disease and of dementia. Now, the only way to definitively diagnose Parkinson's disease is by autopsy.

Finding the cause: In 2011, researchers identified mutations in two genes, EIF4G1 and VPS35, which can lead to the death of brain cells, resulting in Parkinson's disease and related disorders. "These genetic findings are helping uncover the disease processes and nominate new therapeutic targets. Genetics allow us to characterize a patient's form of disease and will place the Mayo Clinic at the forefront of individualized medicine," says Owen Ross, Ph.D., a Mayo Clinic neuroscientist. Mayo Clinic researchers have now found half of the genes that are known to cause Parkinson's disease.

Learning about prevention: Last year, Mayo investigators published research on a genetic variation that protects against Parkinson's disease. The gene variants cut the risk of developing the disease by nearly 20 percent in many populations. The study also reports the variants on the LRRK2 — the most important Parkinson's risk gene found to date — that double Parkinson's risk in Caucasians and Asians.

"The idea that Parkinson's disease occurs mostly in a random sporadic fashion is changing," says Dr. Ross.

line of light — you're bypassing the congested pathway and essentially traveling a back road."

Puckett admits he was skeptical. "I thought, 'How is a little light going to help? I came to Mayo Clinic for you to give me a flashlight?'"

But now, he says, the Mobilaser has been a life changer. "I'm able to function more normally and go places. It's amazing how it works."

Adds his wife, "We're able to go out and enjoy our surroundings."

Dr. Van Gerpen first began working with an engineering colleague to develop a similar device in 2002. Based on positive results of a pilot study, Mayo Clinic recently started a large-scale trial to look at the long-term effects of the Mobilaser.

"Any individual with parkinsonism will eventually develop gait difficulties, so the Mobilaser has the potential to be helpful for all types of parkinsonian patients," says Dr. Van Gerpen. "By using this device and having a more normal stride length, patients can overcome FOG and walk more naturally," he adds. [SMC](#)



Jay Van Gerpen, M.D., neurologist and movement disorder specialist, explains how Mobilaser works. In a small trial, patients who used Mobilaser could walk with greater ease. A large-scale study is now under way at Mayo Clinic in Florida.

Mayo Clinic and Dr. Van Gerpen have a financial interest in the technology referenced in this article. In accordance with the Bayh-Dole Act, this technology has been licensed to a commercial entity. Mayo Clinic and Dr. Van Gerpen will receive royalties from the sale of this technology.

New therapy freezes out atrial fibrillation

Rosalee Johns says she has her life back thanks to a freezing therapy called cryoablation that restored her heartbeat to normal.

In 2008, Johns, then age 67, was diagnosed with atrial fibrillation, a condition in which the atria — the upper chambers of the heart — receive irregular electrical impulses that cause erratic heartbeats. Johns' heart beat rapidly. She was light-headed and short of breath. The episodes occurred every three or four weeks, lasting 12 to 15 hours. Despite treatment with medication, the episodes increased to almost daily.

"I have always been a high-energy person, but atrial fibrillation drains your energy," says Johns, who lives in Ponce Inlet, Fla. A retired auditor for the state of Indiana, she no longer could walk on the beach with visiting children and grandchildren. "Sometimes," she says, "it was an effort to breathe."

Increasingly debilitated, Johns asked her local cardiologist about other treatments. He pointed her to Mayo Clinic.

Fred Kusumoto, M.D., a cardiologist who specializes in electrophysiology at Mayo Clinic in Jacksonville, Fla., discussed her options, including cryoablation, a new therapy where tiny circles of heart tissue are frozen, blocking the abnormal electrical activity in the heart and restoring normal rhythms.

The therapy was tested at Mayo Clinic in Rochester, Minn., and in Jacksonville — and at 25 other medical centers around the United States. Cryoablation restored normal heartbeats for 70 percent of the 245 patients in the study, compared to 7.3 percent of patients successfully treated with medication.

Mayo Clinic was the first facility to offer the procedure, which the U.S. Food and Drug Administration approved in 2010.



After her successful treatment for atrial fibrillation, Rosalee Johns and her husband, Darwin, are back walking the beach.

How cryoablation is done

Cryoablation is minimally invasive — no major incisions required. The surgical team threads a flexible plastic tube (catheter) through a vein, starting through a small incision near the groin and advancing to the heart. A tiny balloon is attached to the end of the catheter. Once the balloon is in place, physicians administer very cold liquid into the balloon. The coolant transforms into gas, expands and creates circles of lesions around the inside of the pulmonary vein in the heart. These lesions stop the errant electrical impulses causing the arrhythmia.

Dr. Kusumoto says that the procedure is similar to another treatment for atrial fibrillation where heat is used to create barriers to the electrical impulses. "The new technique reduces procedure time compared to heat ablation, says Dr. Kusumoto, who performed the cryoablation for Johns on June 2, 2011. "We are hoping that in the long run, cryoablation will restore a normal heartbeat with fewer risks and complications."

Johns couldn't be more pleased. "I have my life back. My energy has returned. My husband and I walked about 5 miles last week. Before, I could have walked maybe a block."

SMC

3 million+ people

in the United States are estimated to have atrial fibrillation, the most common heart arrhythmia (irregular heartbeat). Atrial fibrillation increases the risk of stroke and heart attack, and it poses particular risks for people who have diabetes or high blood pressure.

Over-the-counter thyroid medications risky

Here's another reason to consult a pharmacist when combining over-the-counter and prescription medications. Researchers at Mayo Clinic in Florida discovered that people who use over-the-counter "thyroid support" supplements may be putting their health at risk.

The supplements contain varying amounts of two kinds of thyroid

hormones, apparently derived from animal thyroid glands, says the study's senior investigator, Victor Bernet, M.D., an endocrinologist at Mayo Clinic in Florida.

The hormones, known as T3, or triiodothyronine, and T4, or thyroxine, are regulated by the U.S. Food and Drug Administration and intended for use only in prescription medication. They can cause an increase in heart rate, heart irregularities and palpitations, nervousness and diarrhea, says Dr. Bernet.

Nine of the 10 supplements studied contained animal hormone. The amounts sometimes exceeded those found in prescription thyroid medication.

Transplants effective for HIV-positive patients

Mayo Clinic in Florida is now offering kidney and pancreas transplants to HIV-positive patients with advanced kidney disease and diabetes. HIV-positive patients have the same favorable outcomes as do other organ transplant recipients, says Mary Prendergast, M.D., a kidney and pancreas transplant specialist.

The need for organ transplants is widespread. There are 96,000 patients on the kidney transplant waiting list, and 1,300 patients on the pancreas list, according to the United Network for Organ Sharing (UNOS). From 1 to 3 percent of those on dialysis are HIV positive.

"Mayo Clinic in Florida has offered liver transplant for HIV-positive patients for a number of years," says Dr. Prendergast. "We are very excited to be able to offer these new services, which will provide end-stage kidney disease patients an alternative to dialysis treatment."

A top liver transplant center

HealthGrades, an independent health care ratings organization, has named Mayo Clinic's campus in Jacksonville, Fla., one of the top liver transplant centers in the country.

Mayo Clinic in Florida was one of six recipients for excellence in liver transplant out of 134 hospitals evaluated in the survey. The hospitals named to the list have three-year patient survival rates that were higher than expected.

"The success of the liver transplant program at Mayo Clinic in Florida is a result of the extraordinary work done every day by a team of highly trained professionals, whose focus is on the care and welfare of the patients," says Andrew Keaveny, M.D., medical director of the program.

Breast Clinic accredited

The National Accreditation Program for Breast Centers (NAPBC), a program administered by the American College of Surgeons, has recognized the Breast Clinic at Mayo Clinic's campus in Florida with a three-year, full accreditation.

This is the first time the Breast Clinic applied for national accreditation, which involves a rigorous evaluation process and review of performance. The Breast Clinic was evaluated on its leadership, clinical management, research, community outreach, professional education and quality improvement.

"This accreditation recognizes that Mayo Clinic is fully qualified to offer the full spectrum of breast disease care to our patients, including the most current evaluation, treatment options and follow-up care," says Sarvam TerKonda, M.D., director of the Breast Clinic at Mayo Clinic in Florida.

Mayo Clinic works with hundreds of insurance companies and is an in-network provider for millions of people. In most cases, Mayo Clinic doesn't require a physician referral. Some insurers require referrals, or may have additional requirements for certain medical care. All appointments are prioritized on the basis of medical need.

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New Mayo Clinic book offers ways to reduce heart risk — starting today

You may know that heart disease is the No. 1 killer of men and women in the United States. You may have a family history of heart disease, or you may have been diagnosed with high blood pressure or another heart disease risk factor.

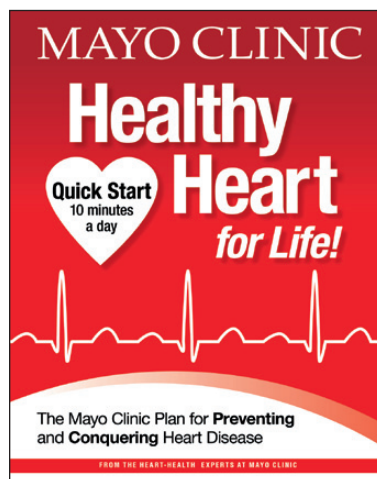
But what can you do about it? A new Mayo Clinic book offers answers. *Mayo Clinic Healthy Heart for Life!* covers steps to take — starting today — to reduce heart disease risk. “There are many things that we all can do to prevent heart disease,” says Martha Grogan, M.D., Mayo Clinic cardiologist and the book’s medical editor-in-chief. “This book helps to distill doctors’ advice for a heart-healthy lifestyle into simple, practical steps, so it’s easy to take action right away.”

The book includes a “Quick-Start Plan,” featuring three key ways to jump-

start heart health: Eat 5, Move 10, Sleep 8. By eating at least five servings of fruits and vegetables, moving at least 10 extra minutes a day, and getting a solid eight hours of sleep, readers can significantly improve heart health.

Other sections include “10 Steps to Heart Health,” an easy-to-follow action plan; “If You Have a Problem,” covering the top six heart conditions and management strategies; and “How to Support Your Plan,” which provides additional tools for heart health maintenance.

Mayo Clinic Healthy Heart for Life! (\$25.95 U.S./hardcover) was released in January at www.bookstore.mayoclinic.com and at online retailers and at bookstores nationwide.



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