Some people say that life begins at 50. But when Edward Pochtrager of Northport, New York, reached the half-century mark, he didn’t feel well enough to begin anything. Every breath was labored. He had to give up his business as a bakery equipment repairman. He couldn’t play ball with his son. He was dependent on a fistful of pills, and climbing just a half flight of stairs exhausted him.

“I felt like I was having panic attacks,” he says. “My chest was going like crazy. I was sweating, and I couldn’t breathe.”

When physicians couldn’t identify a physical cause, he sought counseling. “I went from psychologist to psychologist,” he says. A decade after they began, his symptoms grew significantly worse.

Mr. Pochtrager’s problem finally was diagnosed in a nearby hospital as hypertrophic cardiomyopathy, a type of heart disease in which the heart muscle thickens, usually at the septum, just below the aortic valve. The passageway to the aortic valve narrows, limiting blood flow from the left ventricle to the aorta. This can lead to chest pain with exertion, shortness of breath, fatigue, fainting and palpitations.

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For five years, Mr. Pochtrager took medicine for these symptoms.

(continued on page 3)
Which Blood Thinner is Best?

One of the reasons the Cleveland Clinic Heart Center is number one in America is because of the extraordinary amount of research it performs. Some of this research makes national news, some of it doesn’t. Heart Center findings like the discovery of the first “heart attack gene,” and studies showing how certain drugs can slow or reverse the buildup of plaque in the coronary arteries are widely known. Other results may be less widely publicized. But they still have enormous impact on the medical profession and the way physicians treat heart disease.

For instance, two recent studies by Cleveland Clinic Heart Center cardiologist A. Michael Lincoff, M.D., compared the effectiveness of a new drug used to thin the blood and prevent dangerous clotting during angioplasty. (A catheter-based intervention using a balloon or stent, angioplasties are undergone by more than a million Americans a year.) Dr. Lincoff’s studies compared the new drug regimen using bivalirudin to the drug regimen traditionally used during angioplasty. His first study looked at the effectiveness of the drug after one month. The most recent study examined its effectiveness after one year.

Both studies showed that bivalirudin provided similar protection from complications such as death, heart attack, or repeat stent or bypass procedures as the traditional regimen, but with the advantages of significantly less major bleeding and lower cost. The most recent paper confirmed that the effectiveness was maintained for one year, with a trend toward slightly lower death rates in the bivalirudin-treated patients. The results were published in the Journal of the American Medical Association.

While the general public may never be aware of this study, it is important news for cardiologists, who need to choose which therapies to use for their patients. Cleveland Clinic Heart Center studies are noted by cardiac specialists around the world, and help to improve heart care everywhere.

The Cleveland Clinic’s expertise in implantable pumps to help failing hearts has earned another major grant from the National Heart, Lung and Blood Institute of the NIH. The Cleveland Clinic Department of Biomedical Engineering and Kiyotaka Fukamachi, M.D., Ph.D., have been awarded a $6.95 million grant to develop and test in clinical trials a right ventricular assist device (RVAD) for patients with congestive heart failure.

Under terms of the five-year contract, researchers in the Cleveland Clinic’s Department of Biomedical Engineering and clinicians in its Department of Thoracic and Cardiovascular Surgery will work to develop an RVAD that will benefit heart failure patients who need a more comprehensive implantable device than now exists. RVADs assist the heart in pumping oxygen-depleted blood to the lungs.

This new project is an extension of the group’s previous success in developing the implantable CorAide left ventricular assist device (LVAD) for patients with end-stage congestive heart failure. LVADs pump oxygen-rich blood from the heart to the rest of the body. The CorAide LVAD is an implantable continuous flow blood pump designed to serve as a “bridge” for patients awaiting a heart transplant, a bridge to recovery and, ultimately, an alternative to heart transplantation.

“If the CorAide LVAD can be modified and used as an RVAD, the
resulting CorAide biventricular assist device would be an ideal system, for patients who need additional support for their LVAD to function properly,” Dr. Fukamachi says. He leads the team of biomedical engineers and researchers in the Clinic’s Cardiovascular Dynamics Laboratory and CorAide Laboratory (housed within the Clinic’s Lerner Research Institute) that will devise the new RVAD.

The use of LVADs has been increasing to serve the growing population of patients with end-stage congestive heart failure, Dr. Fukamachi says. However, up to 40 percent of these patients have significant right ventricular failure that limits the benefits of LVAD therapy, he said.

“A safe, implantable RVAD could save the lives of many patients with right ventricular failure,” says Dr. Fukamachi.

New York Man Gets New Life

(continued from page 1)

“I was again having palpitations and they were getting bad,” Mr. Pochtrager says. “My doctor said that I should go for an operation.”

Originally, Mr. Pochtrager was told that he would need an ethanol ablation, in which a tiny amount of pure alcohol is injected into the swollen septal wall through a catheter. This kills the cells on contact and causes the septum to shrink.

Using the Internet, his wife, Fran, located hospitals that had extensive experience with the procedure.

He set up an appointment at the Cleveland Clinic Heart Center with Harry Lever, M.D., who specializes in echocardiography (a technique used to produce images of the heart) and hypertrophic cardiomyopathy. Upon examining Mr. Pochtrager, Dr. Lever found that what he really needed was a septal myectomy, a surgical procedure that involves removing a small amount of the thickened septal wall to improve blood flow from the left ventricle to the aorta.

Mr. Pochtrager returned to The Cleveland Clinic shortly thereafter, and cardiac surgeon Nicholas Smedira, M.D., performed the myectomy the day before Thanksgiving 2003.

A self-acknowledged “crybaby” when it comes to medical procedures, Mr. Pochtrager says that, amazingly for him, he wasn’t the least bit worried before surgery.

“Something told me everything would be fine,” he says. Following his surgery, Mr. Pochtrager’s doctors determined that he would need an implantable cardioverter defibrillator (ICD) with a pacemaker implant, suggested for patients at risk of life-threatening arrhythmias or sudden cardiac death. The ICD monitors heart rhythm, delivering energy to the heart muscle when a very fast, abnormal heart rhythm is detected.

His life now truly is just beginning and is already so much better than it was for many years before he turned 50, Mr. Pochtrager says. He enjoys hiking and swimming with his son, Daniel, 15. Less than a year after the operation, he has taken Daniel horseback riding and frog hunting, and they have done “a lot of walking” in upstate New York.

Mr. Pochtrager says he is grateful to The Cleveland Clinic for his restored health and his new life.

“God forbid you should know somebody with a heart problem,” he says. “But if you do, tell them to go to The Cleveland Clinic.”

Heart is published by the Division of Marketing to provide up-to-date information about the Cleveland Clinic Heart Center and its programs and services. The information contained in Heart is for educational purposes only and should not be relied upon as medical advice. It has not been designed to replace a physician’s medical assessment and medical judgment.

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It has long been suggested that hostility, anxiety and depression can be factors in coronary artery disease. Now, thanks to the generosity of Earl Bakken, the developer of the first pacemaker, the Cleveland Clinic Heart Center will be home to the first center solely dedicated to exploring the heart-brain connection. The Earl and Doris Bakken Heart-Brain Institute at The Cleveland Clinic (BHBI) will allow heart and neuroscience experts to collaborate on heart-brain research, and add to humanity’s store of knowledge on this fascinating subject.

“We recognize the heart and the brain as two of the most important interactive organs in the body, yet most research looks at them independently,” says Ali Rezai, M.D., co-chairman of the Center for Neurological Restoration and acting co-director of the new BHBI.

Eric J. Topol, M.D., chairman of the Department of Cardiovascular Medicine at The Cleveland Clinic, and acting co-director of the new BHBI, says:

“We have known for quite some time that there are black holes in the knowledge base of medicine. The development of a heart-brain institute offers us a unique opportunity to fill in these knowledge gaps to build the foundation for a new and important area of medicine. The BHBI will be a true cross-disciplinary center. The potential benefits of this new frontier are limitless.”

Research efforts already have begun in earnest. Physicians and researchers are beginning to examine the relationship between the vagus nerve in the brain and heart rhythm problems. They also are studying how brain pacemakers and heart pacemakers might work in concert. They will also explore the already proven connection between aerobic exercise and cognitive ability.

The BHBI will be housed in the new Cleveland Clinic Heart Center, which is scheduled to open in early 2008.