Winter 2004

healthpoints

ALL THE POSSIBILITIES OF MODERN MEDICINE

Columbia University Medical Center
Department of Surgery
NewYork-Presbyterian

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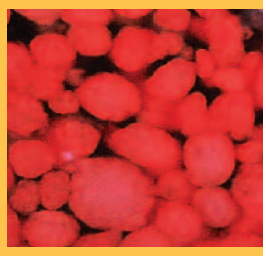

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DIABETES

Knowledge is Power
in a Complex Disease

Approximately 17 million people in the United States have the disease. While an estimated 11.1 million have been diagnosed, 5.9 million people remain unaware that they have the condition. It is the fifth leading cause of death by disease in the U.S.—contributing to the deaths of more than 210,000 Americans each year. And its origin remains a mystery.

Diabetes is a complex disease which results from the body's inability to create or properly use insulin. A hormone produced by the pancreas, insulin helps the body convert sugar, starches, and other food into energy. If the body doesn't make enough insulin or if the insulin doesn't work the way it should, glucose (sugar) cannot enter into the body's cells. Instead, glucose remains in the bloodstream, raising the blood sugar level and ultimately causing diabetes.

Diabetes strikes people of all ages, races, and genders.

The signs of diabetes are often subtle, which can make detection of the disease a greater challenge. Some common symptoms include excessive thirst, frequent urination, unusual weight loss, increased fatigue, slow wound healing, extreme hunger, and blurry vision. However, individuals who experience none of these signs may still have diabetes.

"Until the blood sugar is elevated, diabetes has no symptoms," says **Robin Goland, MD,** *Director,* Naomi Berrie Diabetes Center at Columbia University Medical Center. "A major misconception about diabetes is that if you have no symptoms, you cannot have the disease. The importance of screening people can't be overemphasized," Dr. Goland adds.

Diabetes is typically detected through a routine blood glucose test or a urine exam. People can develop diabetes at any age, and it manifests itself in different forms—which further contributes to its complexity. While there is no cure for diabetes, individuals with the disease can live long and healthy lives if they take control of the disease. When it comes to diabetes, knowledge is definitely power. If patients take care of themselves with exercise, watch their diet, and maintain a healthy lifestyle, treatment

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Positron Emission Tomography (PET)

A Growing Concern

According to the American Cancer Society, approximately 22,000 Americans were diagnosed with thyroid cancer in 2003 and 1,500 will die from the disease. Thyroid cancer is two to three times more common in women than men. Unlike most cancers, the incidence of thyroid cancer has actually increased over the past few years.

A butterfly-shaped gland located in the front of the neck, the thyroid produces hormones that affect heart rate, energy level, and body temperature. The vast majority of thyroid tumors—80-90%—are papillary or follicular cancers and can typically be treated successfully if detected early.

While no one knows the cause of thyroid cancer, certain risk factors, such as family history, gender (female), age (over 40), and race (white) are associated with the disease. Children who experience external irradiation to the head and neck also have an increased risk. Studies revealed a sharp increase in childhood thyroid cancer rates followed exposure to the Chernobyl nuclear accident.

A range of options exist for treating thyroid cancer, including surgery, thyroid hormone therapy, radioactive iodine therapy (I^{131}), external radiation therapy, and chemotherapy. Patients should review these options with their physician to select the best treatment approach for their individual case.

RENÉ PEREZ

"PET can affect treatment for recurrent thyroid cancer by locating lesions throughout the body that may be amenable to therapy."

PET and Thyroid Cancer

Follow-up care is a critical component of thyroid cancer treatment, since 30 percent of patients will experience a recurrence of the disease. Today, there are nearly 300,000 thyroid cancer survivors in the United States. These patients undergo regular screenings to detect recurrences, including:

- physical examinations
- thyroglobulin studies (a protein produced by the thyroid, thyroglobulin becomes elevated in individuals with thyroid cancer)
- diagnostic I^{131} scans (the radioactive iodine I^{131} collects in and destroys thyroid cancer cells throughout the body)
- ultrasound scans

In October 2003, Medicare and Medicaid added Positron Emission Tomography (PET) to this arsenal for detecting recurrences in select thyroid cancer patients. PET goes beyond the other testing modalities by providing a color-coded account of body chemistry. Recurrences appear visually as areas of higher metabolic activity.

According to **Robert J. McConnell, MD,** *Associate Clinical Professor of Medicine* at Columbia University College of Physicians & Surgeons and *Co-Director of the New York Thyroid Center,* "PET is a specialized tool. We use PET to image metastatic thyroid cancer for a

Approved for the Fight Against Thyroid Cancer

PET scans detect areas of increased metabolism in the body. In the scan to the left, thyroid cancer appears as a darkened region in the neck (outlined by the red box). This scan also shows areas of healthy increased metabolic activity, such as the brain, heart, and liver.

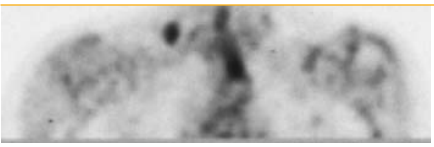
subset (10-15%) of patients who have elevated thyroglobulin levels, but negative I^{131} scans."

"When thyroid tumors spread throughout the body, they can become less differentiated and no longer take up I^{131}," explains **William B. Inabnet, MD,** *Chief of Endocrine Surgery* at Columbia University Medical Center, NewYork-Presbyterian Hospital and *Assistant Professor of Surgery* at Columbia University College of Physicians & Surgeons. "PET is a great advance because it allows imaging of metastatic thyroid lesions by a different mechanism than with I^{131}. The sensitivity of PET is quite high in that 60-90% of patients who meet the screening criteria will have positive findings."

According to **Rashid A. Fawwaz, MD,** *Professor of Clinical Radiology* at Columbia, "PET can affect treatment for recurrent thyroid cancer by locating lesions throughout the body that may be amenable to therapy, such as surgery or directed radiotherapy."

While Medicare and Medicaid currently recommend the use of PET to detect recurrences in thyroid cancers of follicular origin, Dr. Fawwaz predicts that PET will ultimately be used to detect recurrences for all types of thyroid cancer. Ultimately, Dr. Inabnet hopes that ongoing academic research will enable physicians to use PET not only to detect, but also to treat thyroid cancers—much as they use I^{131} today.

For more information about PET for thyroid cancer, please contact the Columbia Kreitchman PET Center at 212.923.1555 or info@columbiapet.org



CASE STUDY

A physician referred a female patient to Columbia Kreitchman PET Center for a whole-body PET scan. The woman had previously undergone a total thyroidectomy (removal of the thyroid gland) to treat her follicular thyroid cancer. As part of her follow-up care, she received regular diagnostic I^{131} scans and thyroglobulin studies. Radioactive iodine I^{131} collects in (and destroys) differentiated thyroid cancer cells; the protein thyroglobulin becomes elevated in individuals with thyroid cancer.

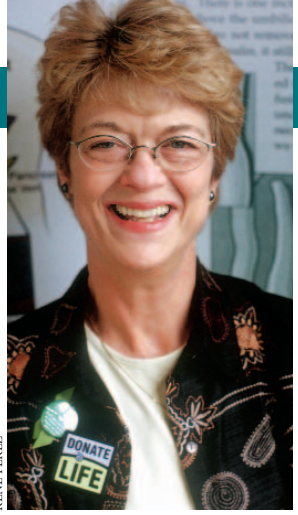
Over a year after her thyroidectomy, a test showed that the woman had an elevated thyroglobulin level. The diagnostic I^{131} scan remained negative, suggesting a recurrence of a less differentiated cancer. A PET scan was ordered to help her physician make a firm diagnosis. The scan showed a recurrence in her right superclavicular area. The woman underwent surgery to remove the recurrence.

How PET Works

PET scans display color-coded images of the body's metabolic and chemical processes. Before having a PET scan, patients receive an injection of a harmless tracer that attaches to glucose in the body. Cancerous tissue absorbs greater quantities of glucose than healthy tissue. Glucose "feeds" the tumor, allowing it to more rapidly multiply and expand. By revealing areas of increased glucose consumption in the body, PET scans can spot active tumors.

Many other imaging technologies, such as MRI (magnetic resonance imaging) and CT (computed tomography), show the internal structures of the body. By focusing on metabolic changes, PET can often highlight tumors before structural changes appear.

Individuals with thyroid cancer typically undergo a "full-body" PET scan, which covers the neck and trunk of the body. The full-body approach enables physicians to detect whether any tumors have spread beyond the initial site of the thyroid. A full-body PET scan typically takes less than one hour and only a small portion of the patient is covered by the scanner at any time. The radiation exposure is similar to that from an X-ray or CT scan.



RENÉ PEREZ

PATIENT PROFILE

Glenda Daggert

When 15-year-old Glenda Daggert was diagnosed with diabetes in the early 1960s, "you hid diabetes." In spite of her illness, Glenda went on to earn degrees in physical education and instructional technology, then taught for several years. She married Ira Copperman, moved to New York, and joined IBM as a leadership trainer, a position she still holds today.

Once diagnosed, Glenda kept herself active and strong physically by walking at least one mile every day. She managed through several complications like retinopathy (vision loss), gastroparesis (stomach paralysis), and severe nose bleeds. However, eight shots a day, 12 blood tests a day, and 2 a.m. alarms to test blood sugars had become overwhelming.

After almost 40 years with diabetes she began to lose the ability to tell when her blood sugar was low—one criterion that made her eligible for a pancreas transplant. Glenda had also started to lose kidney function—another complication of her diabetes—and was facing dialysis. The anemia caused by her kidney disease was so bad at times that she couldn't hold her head up. And the kidney diet was many times more restrictive than the diabetic diet. The two-page list excluded Glenda's favorite foods: bananas, tomatoes, potatoes, mushrooms, and oranges. Her skin itched, especially on her back, the hardest place to reach.

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DIABETES

CONTINUED FROM P. 1

can be very successful. Dr. Goland emphasizes that treatment success is completely dependent on a patient's motivation.

Type 1

Formerly called juvenile diabetes, type 1 is an autoimmune disease that results from the body's failure to produce insulin. The disease occurs when the body's immune system destroys the pancreatic cells that produce insulin. Type 1 usually develops before age 20 and is typically first diagnosed in children, teenagers, or young adults. This form of diabetes accounts for about 10% of all diabetes cases. According to Dr. Goland, "the environmental insult that brings on type 1 in a genetically susceptible person is not known and is under study."

Physicians typically recommend that individuals with type 1 take insulin injections or use an insulin pump to replace the insulin no longer being produced by their pancreas. In addition, type 1 diabetics should exercise regularly and follow a healthy diet. Foods with fiber, such as fruits, vegetables, peas, beans, and whole-grain breads and cereals may help lower blood glucose.

Type 2

Accounting for about 90% of cases, type 2 diabetes used to be called adult-onset diabetes. Type 2 results from insulin resistance, a condition in which the body fails to properly use insulin, combined with relative insulin deficiency. This form of diabetes is often associated with being overweight. The environmental factors that unmask a genetic predisposition for type 2 include aging, weight gain, inactivity, stress, illness, infection, pregnancy, and certain medications. While type 2 typically develops during adulthood, over the past two decades the increase in childhood obesity rates has led to a growing number of children with type 2.

For type 2 diabetics, physicians recommend increased exercise, limited portion sizes, reduced carbohydrate content in meals, and the use of oral insulin and other medications.

Gestational Diabetes

A less common form of the disease is gestational diabetes, which strikes about 4% of all pregnant women. Although this kind of diabetes

The ABCs of Fighting Diabetes' Deadliest Complication: Heart Disease

Average blood glucose: Maintain an average blood glucose level of less than 7 percent. People with diabetes should have an A1C test (which measures average blood glucose over the previous three months) at least twice a year. Control your blood glucose through exercise, weight loss, and a healthy diet.

Blood pressure: Keep your blood pressure levels at 130/80 or below. Check your blood pressure every time you visit the doctor. Weight loss, exercise, and a healthy, low-sodium diet will help lower your blood pressure.

Cholesterol: Reduce your LDL ("bad"cholesterol) level to less than 100mg/dl. People with diabetes should try to maintain lower LDL levels than non-diabetics. Keep your HDL ("good"cholesterol) levels as high as possible above 40 mg/dl. A diet low in saturated fats can help reduce cholesterol levels.

usually disappears after the mother gives birth, the disease places women at a higher risk of developing type 2 diabetes later in life. Gestational diabetes occurs when the mother's body is unable to produce and use the additional insulin required to support pregnancy. If the disease remains untreated, the baby's pancreas will begin to produce the extra insulin. This insulin reduces the high glucose levels in the bloodstream by storing the excess energy as fat, which is why many women with gestational diabetes give birth to babies weighing more than nine pounds.

The goal in combating gestational diabetes is to keep blood glucose levels equal to those of pregnant women who don't have gestational diabetes. Treatment includes special meal plans and scheduled physical activity. It may also include daily blood glucose testing and insulin injections.

Pre-diabetes

In recent years, physicians have begun to recognize a fourth form of the disease, known as pre-diabetes. With pre-diabetes, blood glucose levels are higher than normal but not quite high enough for a diagnosis of diabetes. Researchers estimate an additional 16 million Americans have pre-diabetes. Unlike diabetes, which has no cure, pre-diabetes can be reversed through a combination of increased physical activity and weight loss.

Managing the Risks

If not managed properly, diabetes can indeed become a life-threatening disease. Diabetics face higher risks for heart disease, kidney failure, blindness, extremity amputations, and other chronic conditions. People suffering from diabetes are twice as likely to die prematurely of complications stemming from the disease than those who do not have it.

However, Dr. Goland notes that these complications are not inevitable. "Evidence from studies in the last decade has shown that the long-term complications of diabetes are largely related to level of metabolic control and can often be prevented and delayed if diabetes is well managed. An early diagnosis is imperative so that treatment can be undertaken, glucose levels can be normalized, and complications prevented."

Medical advancements are constantly being developed to help patients combat the disease and its complications. "New and improved insulins are available. There are many new medications to treat type 2, and some experimental protocols for pancreatic islet cell transplantation and immunotherapy for type 1. There are also many advances in glucose monitoring and in insulin delivery systems," says Dr. Goland. And the promise of still greater innovations is on the horizon. Researchers are working on creating an insulin pump, which may one day function as an artificial pancreas.

For more information about diagnosing and treating diabetes, please call 1.800.227.2762, or visit www.nbdiabetes.org.

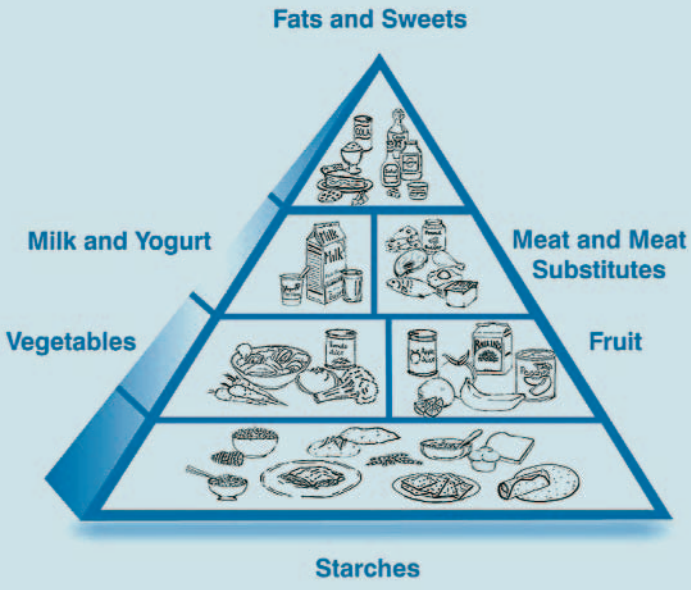
EAT TO BEAT DIABETES

What, when, and how much you eat all affect your blood glucose level. You can keep your blood glucose at a healthy level if you:

- Eat about the same amount of food each day.
- Eat at about the same time each day.
- Take your medicines at the same times each day.
- Exercise at the same time each day.

Choose foods from these food groups: starches, vegetables, fruit, meat and meat substitutes, and milk and yogurt. How much of each depends on how many calories you need a day. Limit the amounts of fats and sweets you eat each day.

THE FOOD PYRAMID



Eat a variety of food to get the vitamins and minerals you need. Eat more from the groups at the bottom of the pyramid and less from the groups at the top.

PATIENT PROFILE

CONTINUED FROM P.4

Life had become a struggle. It was hard to maintain that all-important positive attitude.

As dialysis time approached, Glenda and Ira began to research simultaneous kidney-pancreas transplants. They met Dr. William Stubenbord (Weill Cornell Medical Center) for kidney, and **Dr. Milan Kinkhabwala** for pancreas (*Surgical Director,* Liver and Pancreas Transplant Programs, NewYork-Presbyterian Hospital). They decided that transplantation was the best alternative for Glenda. After 14 months on the waiting list, and two false alarms, she received both organs from a deceased donor on June 23, 1999. "I'm so lucky and so grateful for all the doctors and nurses who helped me have such a positive experience. And Ira and I will never be able to thank my donor and donor family enough for this amazing gift of life," says Glenda.

In preparing for surgery Glenda learned self-hypnosis for pain management. "I found someone in the Yellow Pages under *Body-Mind Healing Arts.*" Ira discovered a set of healing tapes and the surgeons agreed to play them in the operating room. Because her surgery and recovery time were faster than average, she reports, "I was back to work full-time in four weeks—this stuff really works!"

Post-transplant, Glenda has had no symptoms of diabetes. She has no dietary restrictions except for grapefruit and papaya, which is the same for anyone on immunosuppressant drugs. "Ira brought me a frosted doughnut while I was in the hospital; that was my one big craving. I'm still not a chocaholic, but bring on those pastries!" She exercises regularly and still watches her diet to maintain an ideal weight.

Glenda considers herself extremely lucky to have no side effects from the immunosuppressants she takes. In fact, she says she gets colds less often and less severely than before the transplant. In her free time, she loves reading, running, and jumping with her 2-year-old granddaughter, Chloe, as well as her theater dates with Ira—both of which would not have been possible before her transplant. She just passed the four year anniversary of the operation and is looking forward to continuing to live a beautifully normal life.

Glenda and Ira volunteer for the American Kidney Foundation and the New York Organ Donor Network. "My mission—my bigger game—is to eliminate that transplant list."

DIABETES COMPLICATIONS
Focus on the Feet

One common complication of diabetes is abnormal wound healing. It is a complication that occurs most often in the form of unnoticed foot ulcerations—and can progress rapidly. In fact, foot infection is the most common diabetes complication leading to hospitalization. Studies indicate that the prevalence of wound complications only increases with age, especially among people who were diagnosed with the disease before age 30. However, foot disease is a critical problem that must be taken seriously by diabetics of any age.

"In diabetic patients, wounds are the result of a complex interaction of several factors, and thus are challenging to deal with. Wounds which are left untreated can develop into serious infections which are more difficult to handle," says **Nicholas J. Morrissey, MD,** *Assistant Professor of Surgery* at Columbia University.

Diabetes makes the foot vulnerable to ulcer and infection for several reasons:

- Neuropathy may make the patient unaware of injury and wounds on the foot
- Diabetic patients may be more vulnerable to infection of the wound
- Patients with diabetes may have compromised circulation and therefore wounds may not heal properly

With diabetic neuropathy, or nerve damage, diabetics can lose sensation to the point that their feet can feel completely numb. While virtually any type of foot trauma can cause a neuropathic wound, a person with diabetes may not feel the injury to their foot or be aware that an infection has set in. "With diabetic neuropathy, you could have a tack in your foot and not know it. You would only notice it once your foot becomes visually swollen," says Dr. Morrissey.

In addition to a lack of sensation in the feet, diabetics face an increased vulnerability to infection. First, diabetics often have decreased circulation to the lower legs and feet due to damaged blood vessels. This reduced circulation in turn increases the risk of infection if the foot is injured in any way. Second, diabetics face a

CONTINUED ON P.10

THE SEARCH FOR A CURE:
Islet Cell Transplantation for Type 1 Diabetes

The past few years have heralded remarkable improvements in the management of type 1 diabetes. Physicians and researchers at Columbia, however, are pushing to move past successful control of the disease, and reach for a cure. One promising experimental procedure, *islet cell transplantation*—currently in the clinical trials stage—may offer a vital step forward in this quest.

Named after Paul Langerhans, the German scientist who discovered them in 1869, the Islets of Langerhans are clusters of cells in the pancreas that produce hormones. Within the islets, the alpha cells make glucagon, a hormone that raises the level of glucose in the blood, while the beta cells make insulin, which helps the body convert food into energy. In type 1 diabetes, the body's immune system destroys the insulin-producing islet cells. As a result, people who have type 1 diabetes must monitor their blood sugar levels and take regular insulin injections.

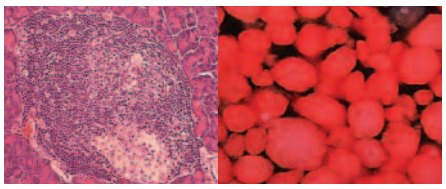
A complex procedure, islet cell transplantation involves removing islets from a donor pancreas and transferring them into the diabetic patient's liver. Interestingly, islets not only have the ability to grow in the liver, they can also adapt the liver to function as a back-up pancreas. If the procedure is successful, the liver assumes responsibility for regulating blood sugar and producing insulin. Researchers believe islet cell transplantation could completely eliminate the need for insulin injections from the lives of most people with type 1 diabetes—which would be a major breakthrough in the treatment of the disease.

A Minimally Invasive Alternative

Islet transplantation was originally developed as an alternative to pancreas transplantation—a major procedure in which the diabetic patient receives a donor pancreas to replace the damaged organ. Typically, physicians perform a pancreas transplant at the same time as a kidney transplant in patients with diabetes-related kidney failure. Islet cell transplantation offers a minimally invasive way to achieve the same goal—production of insulin by the patient.

"The major advantage of a pancreatic islet transplant is that it does not involve any kind of major surgery. The procedure of islet transplantation is done by inserting a small needle into the liver, and injecting a fluid solution containing the islets into the liver. It can take less than an hour and can be done using a local anesthetic. It also does not have the risk of post-operative complications, such as inflammation of the pancreas," says **Mark A. Hardy, MD,** *Auchincloss Professor of Surgery* at Columbia and *Surgicial Director* of Pancreatic Islet Transplantation at Columbia University Medical Center.

While Dr. Hardy believes the procedure holds enormous promise for patients with type 1 diabetes, he also emphasizes that it is an experimental procedure which must overcome certain obstacles. "The disadvantage is that you need human pancreases, and donors are a very scarce resource," he explains. "The islet isolation procedure is also relatively complicated. In addition, rejection is an obstacle with any transplant. Immunosuppressive drugs are needed to keep the transplanted islets functioning."



(left) **Appearance of human pancreatic islets in whole pancreas**. *(right)* **Isolated human islets prepared for injection into patient** .

Perfecting the Procedure

New techniques for gathering islet cells and preventing cell rejection are continuously being refined. Future possibilities for obtaining donor islet cells include:

- Collecting islet cells from animal donors
- Developing procedures to make human stem cells function as islet cells
- Growth of potential islet cells from bone marrow
- Making islets multiply through genetic engineering

While the procedure remains available at only a few specialized centers such as Columbia, recent outcomes have been very positive. Some patients have been able to stop injecting insulin within a year of the transplant, and no longer have the extremely high blood sugar levels seen in uncontrollable type 1 diabetes.

Dr. Hardy and **Kevan C. Herold, MD,** *Associate Professor of Clinical Medicine* at Columbia University College of Physicians & Surgeons, conducted their first islet cell transplant in January 2004. "We're going through an evolution, which is very exciting," Dr. Hardy says. "I believe islet transplantation will replace whole organ transplantation one day. I think this is one of the few instances where cellular transplantation will replace organ transplantation. The signs all point to more progress."

For more information about islet cell transplantation, please call Dr. Hardy at 1.800.543.2782.

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AIDING THE HEART:

Medicare approves LVADs as Destination Therapy

The Thoratec HeartMate™ has a textured surface that lowers the probability of clot formation.

A man-made, implantable blood pump, the Left Ventricular Assist Device (LVAD) was originally developed as a bridge to keep congestive heart failure patients alive until they could receive a heart transplant. In October 2003, the Centers for Medicare and Medicaid Services (CMS) issued a National Coverage Decision Memorandum approving use of LVADs as a "destination therapy" for acute heart failure patients who are ineligible for heart transplant. According to the FDA, the CMS decision means that 20,000 to 30,000 additional patients may benefit from the device.

Physician-scientists from Columbia University Medical Center were instrumental in proving the clinical efficacy of the HeartMate VE LVAD, leading a three-year clinical trial that found the implanted device lengthens and improves the lives of terminally ill heart failure patients.

Results from the nationwide REMATCH (Randomized Evaluation of Mechanical Assistance for the Treatment of Congestive Heart Failure) trial, supervised by investigators at Columbia University's International Center for Health Outcomes and Innovation Research (InCHOIR), found that use of the implanted heart pump more than doubled the likelihood that terminally ill heart failure patients would be alive at the end of the year. Many of these patients were either too sick or too old to get a heart transplant.

The study, published in the November 2001 *New England Journal of Medicine*, led to approval by the FDA in November 2002 for use by patients who are ineligible for heart transplant. In the past, these patients have been forced to rely upon medical therapies, which can often cause adverse side effects and can fail to improve patients' quality of life and long-term heart disease.

"The REMATCH trial demonstrated that LVAD improves net health outcomes both qualitatively and quantitatively for this group of patients, with significant survival and quality of life benefit," says **Eric A. Rose, MD,** principal investigator for the trial, *Chairman*, Columbia University Department of Surgery, and *Surgeon-in-Chief*, Columbia University Medical Center. "As a result of the REMATCH trial and the decision by CMS, LVAD will now be available to the sickest of the sick across the country, allowing them to extend the life of their hearts and to live a normal life away from the hospital."

Under the new Medicare approval, HeartMate VE can be used to support acute heart failure patients who have received medical therapy for at least 60 of the last 90 days, have a life expectancy of less than two years, and are not candidates for cardiac transplantation.

For more information about heart surgery and LVADs, please call 1.800.227.2762, or go to www.columbiaheart.org.

www.columbiasurgery.org

The Many Faces Behind a Mission

Ren Wei Zhang, an 8-year-old boy from China, was born with a facial cleft. The boy's deformity has made him an outsider for most of his life, a life that has been a difficult one. When he was 3, Ren Wei's parents died in a flood. Since then he has lived in an orphanage. At age 7, he was allowed to go to school for the first time, wearing a bandage over the hole, only to be teased by his classmates. Ren Wei had always been defined by one thing—his facial difference.

Jeffrey Ascherman, MD, *Assistant Professor of Surgery* at Columbia University, met Ren Wei on a humanitarian mission to China in April 2002. Dr. Ascherman has been going on humanitarian missions to China since 1999 through an organization called The Children of China Pediatrics Foundation (www.china-pediatrics.org). A specialist in plastic and craniofacial surgery, Dr. Ascherman typically schedules one trip a year to remote Chinese towns for a period of 10 days. During this time he works with orphanage hospitals to conduct reconstructive surgery on children who suffer from facial malformations and birth defects, such as cleft lips and palates.

He is not alone in his mission. "We take everything, from anesthesia machines to sutures. We have a full team of doctors, nurses, nurse practitioners, medical assistants, and bio-technicians. At least 15 to 20 people volunteer their time to go on each mission," Dr. Ascherman notes.

When Dr. Ascherman and his team met Ren Wei, they very much wanted to perform surgery to close the opening, but they felt the complexity of the facial reconstruction and the need for intensive care facilities post-operatively prevented them from operating in China. Instead, the team launched a long and arduous campaign to bring the boy to The Morgan Stanley Children's Hospital of NewYork-Presbyterian.

The campaign began with intensive letter writing, asking the hospital and its staff to volunteer their facilities to Ren Wei, free of charge. Dr. Ascherman put a budget together, assessing the boy's medical expenses. He appealed to his colleagues to provide free care for Ren Wei. The letters and phone calls continued on to the Chinese government, requesting permission to allow him to leave the country. The Children of China Pediatrics Foundation, including President and Founder, Gena Palumbo and Medical Director, David Roye, MD, joined in the effort, writing letters and making phone calls. A united team formed around a little 8-year-old boy who couldn't speak a word of English. With perseverance, the team succeeded in achieving the first stage of their mission.

Fifteen months later, Ren Wei safely arrived in New York City. Far from his rural orphanage near Harbin, China, he had his first taste of ice cream. He went to the Central Park Zoo. And he waited anxiously for his surgery. The Children of China Pediatrics Foundation made arrangements for him to stay under the care of foster parents Pat Farrell and Tom Javits. Two surgeons from China accompanied Ren Wei on his journey—Dr. Wei Qi Li, a plastic surgeon, and Dr. Yong Yun Lian, an orthopedic surgeon. They came to observe Ren Wei's surgery and study the latest surgical advancements from Dr. Ascherman and from Dr. Roye, Chief of the Pediatric Orthopedic service at Morgan Stanley Children's Hospital.

CONTINUED ON P. 11

Dr. Ascherman's humanitarian mission marked the beginning of a long campaign to bring Ren Wei to The Morgan Stanley Children's Hospital of NewYork-Presbyterian for reconstructive surgery.

Paul and Irma Milstein and Dr. Eric A. Rose, Chairman, Columbia University Department of Surgery.

Department of Surgery Fall Reception

On October 7, 2003, the Department of Surgery honored Paul and Irma Milstein for their recent pledge of $5 million, as well as their ongoing legacy of support to the Department and Columbia University Medical Center. The event also welcomed new faculty and congratulated current staff members on their recent honors, awards, and humanitarian missions.

Department of Surgery New Faculty:
John D. Allendorf, MD
Daniel G. Davis, DO
Dominique M. Jan, MD
Kathie-Ann P. Joseph, MD
Sandip Kapur, MD
John F. Renz, MD, PhD
Beth A. Schrope, MD, PhD
Kathryn Spanknebel, MD

Diabetes Complications

CONTINUED FROM P.6

reduced resistance to infection due to their elevated blood sugar levels. When the blood sugar level raises above normal, the white blood cells that fight infection do not work properly. Consequently, bacteria and other organisms invade more rapidly and can cause greater damage.

Foot ulcers in diabetics are typically caused by poorly fitting shoes. Ulcers occur most often on the bottom of the big toe or on the ball of the foot. Neglect of ulcers can result in serious infection, which in turn can lead to a loss of the limb.

Surgical Remedies

If a diabetic wound in the foot is not treated in its early stages, surgery often emerges as the necessary next step. "If the patient has a severe foot deformity or an abnormal pressure point in the foot, sometimes those have to removed, and that involves removing portions of the foot bones or toe bones. If the patient has poor circulation which falls below a certain amount, we try to improve that with interventions as well," explains Dr. Morrissey. "Operations to improve circulation can be risky due to the fact that diabetic patients often have heart disease as well. The good news is that we are developing techniques to improve circulation without putting patients through major surgery. Frequently we can improve their condition with balloon angioplasty or stents of their leg arteries."

According to Dr. Morrissey, diabetics should view all foot problems as potentially serious and seek medical assistance as soon as the first signs of a problem occur. Dr. Morrissey believes prevention is a key ingredient to success, and that good diabetic control and prevention go hand in hand. "It is shown that patients who keep their blood sugar well controlled—keeping it within the guidelines that their doctors prescribe—have better would healing and less complications," he reports. "Unfortunately, these wounds can lead to a much higher incidence of amputation in the diabetic population than in any other population. Patients and their healthcare providers should aggressively treat the disease in order to prevent serious complications of diabetes. Treatment should begin with following dietary modifications, achieving weight reduction, and reaching appropriate medical control."

For more information about abnormal wound healing and foot disease, please call 1.800.227.2762.

A Proud Heritage

The Department of Surgery at Columbia University College of Physicians & Surgeons is pleased to announce the publication of *A Proud Heritage: An Informal History of Surgery at Columbia.*

Editors **Frederic P. Herter, MD, Alfred Jaretzki III, MD,** and **Kenneth A. Forde, MD,** capture the personal dedication, intellectual excitement, and intrinsic joy of Columbia surgeons throughout the ages—whether pioneering vascular surgery in the early 1800s, or using a left ventricular assist device (LVAD) to extend a patient's life today.

They offer an insightful and often humorous account of generations of Surgeons-in-Chief at Columbia who have struggled with encouraging innovation while teaching excellence.

The price of the book is $50.00, including shipping and handling. To order your copy of *A Proud Heritage,* please make checks payable to: Columbia University Department of Surgery.

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Closing Ren Wei's cleft required a highly complex operation. Dr. Ascherman planned to restructure key bones around the eyes and manipulate tissue and cartilage to close the opening and create a nose. The procedure posed many potential risks, including blindness, brain injury, major blood loss, and meningitis.

On July 28, 2003, Ren Wei underwent the first of three operations. The initial surgery took over 12 hours. "I moved his left eye approximately two centimeters more toward the middle. This meant cutting and moving all the bones around the front of his eye," Dr. Ascherman describes. "In addition, I had to replace the hole on the left side of his face with a nose. I reconstructed an inside lining for the new nose with the mucosa already lining the hole. The structure of the new nose was made from septal and ear cartilage, and a flap of skin brought down from his forehead was used to provide the covering skin. The surgery also involved cutting bone around his brain. Dr. Neil Feldstein, a neurosurgeon, assisted during this portion of the surgery."

Each of the remaining two operations, which further refined the facial reconstruction, took about one to two hours and were performed as outpatient procedures. Dr. Ascherman believes the three operations were very successful. "It's going to take a while for the scars to fade. In order to see the final results, it could take up to a year. But so far everything looks very good, and Ren Wei is healing as well as could be expected," he reports.

Dr. Ascherman and Ren Wei

Members of Dr. Ascherman's team see Ren Wei's story as a success in more ways than one. "Craniofacial teams going abroad on humanitarian missions want to do as many surgeries as possible to help as many people as possible. In the limited time they have, they're always faced with the challenge—do you help the people or help the infrastructure? The surgeons in those countries are eager to learn, but there's only so much you can do in a week's time. The beauty of this case is that the team achieved both goals. Drs. Li and Lian will probably touch the lives of hundreds of Chinese children now," says **Deborah Carson, RN, MPH,** *Nurse Coordinator,* Craniofacial and Cleft Team, NewYork-Presbyterian Hospital.

In early September, Ren Wei returned to his orphanage in China. Dr. Ascherman said he and others are hoping that a family may adopt the boy soon. When asked what has been most memorable about this experience, Dr. Ascherman says, "It's a wonderful feeling to be able to help someone. I'm happy to give Ren Wei a better quality of life, and hopefully enable him to have all the opportunities that other children have. My goal is to always push the limits of what we can safely achieve. In Ren Wei's case, I think we did it—with the help of so many different people."

For more information about plastic and craniofacial surgery, please call 1.800.227.2762 or visit www.columbiaplastics.org.

Ren Wei before and after his facial reconstruction.

In Memory: Paul LoGerfo

It is with deepest sorrow that Columbia University Medical Center announces the passing of **Paul LoGerfo, MD.**

Dr. LoGerfo was a world-renowned leader in the field of thyroid and parathyroid surgery. The founder and director of the New York Thyroid Center, Dr. LoGerfo dedicated his career to improving his patients' quality of life and working toward the prevention of disease.

In 1977, he developed the thyroglobulin assay, which remains one of the most commonly used methods for detecting recurrent thyroid cancer. In the mid 1980s, Dr. LoGerfo pioneered the field of thyroid and parathyroid surgery by developing a surgical technique that used local anesthesia. He was the only surgeon who routinely performed these procedures on an outpatient basis. In addition, Dr. LoGerfo developed the coarse needle thyroid biopsy.

In 1990, Dr. LoGerfo established the thyroid registry, which continues to bank all thyroid operations performed at Columbia University Medical Center and is an invaluable resource for outcomes research. As chief of the Division of Surgical Specialties, he implemented similar databases for the other specialties within his purview.

In 1994, he founded the New York Thyroid Center. He dedicated this comprehensive center to providing superior medical care and education for patients with thyroid disease.

Dr. LoGerfo's heart loomed even larger than his illustrious career. An incredibly generous, considerate, and humorous man, he projected a wonderful energy. He was adored by his patients and staff, as well as his students, residents, and colleagues.

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