Melanoma meets its match:
One man’s will combines with Mayo doctors’ skills

Cruz Hernández Quijada received the worst news of his life in early 1997 from doctors in his home country of Venezuela: he had malignant melanoma, a condition that many equate with a death sentence. Further, he was told that the cancer had advanced considerably, compounding his already serious history of hypertension and diabetes.

He turned to close family members for advice, and they recommended he seek a second opinion at Mayo Clinic.

Hernández contacted Mayo’s international appointment office, and a visit was scheduled for the following week with Dr. John White, a dermatologist at Mayo Clinic in Jacksonville, Florida.

Despite his condition, Hernández left Venezuela full of faith and hope that he would overcome the disease. “My hope was based on my confidence in the quality of the internationally known Mayo Clinic and my faith in God,” he says.

A radical surgery
After the necessary round of evaluations, tests and studies, doctors determined that Hernández needed major surgery. “I was fortunate to have Dr. James Waldorf as my plastic surgeon. I hold him in high esteem and acknowledge him not only as an experienced physician but as an exceptional human being,” he says.

Dr. Waldorf carried out the radical surgery to remove most of the skin and underlying tissue on Hernandez’s back. The magnitude of the procedure surprised the specialists, and its success was the beginning of a long road to recovery that involved a highly specialized team of endocrinologists, dermatologists, oncologists and ophthalmologists.

“God began his miracle of curing me, and put me in the hands of talented doctors,” says Hernández.

A healthy Hernández returned to his country filled with optimism and joy and the warmth extended by the professionals in Jacksonville. At first, because of the aggressive nature of the disease and the possibility of recurrence, he returned to Mayo Clinic for follow-up evaluations four times a year; now he travels to Jacksonville twice a year.

Over the years, he has become close to the Mayo Clinic staff. “They are not only a group of professionals, but feel like a real extension of my family,” he says. (continued on page 2)
Faith, family, science

Today Hernández dedicates time to leading his companies and finding ways to express his thanks. “When I was able to visit my farm in eastern Venezuela, I had a chapel built in honor of the Divine Child and in remembrance of our friends at Mayo Clinic who had given me my life back,” says an emotional Hernández.

He believes that in his case, science composed a perfect symbiosis between his family and his faith. According to him, this symbiosis – as a perfect team – has permitted his survival, which has surprised many, including the physicians involved in his care. “It is truly an honor to have been able to participate in the care of Cruz and his family,” says Dr. Waldorf. “We are delighted that he has had a successful outcome. His survival has brightened the lives of all who know him and his dedication to our institution and his gratitude is what makes medicine worthwhile.”

Says Hernández: “I am eternally grateful to Mayo Clinic and its entire medical, administrative and professional staff. Perhaps my experience can be best summarized by what Dr. William Maples, my Mayo oncologist, told me when I was mentioning my gratitude for my recovery. He said: ‘Mr. Cruz, your faith is what takes care of you.’”

“His dedication to our institution and his gratitude is what makes medicine worthwhile.”

Dr. James Waldorf – Mayo Clinic Plastic Surgeon
Curing melanoma: A concerted effort across three time zones

THE MAYO CLINIC MELANOMA STUDY GROUP is a model of the clinic’s collaborative ethic: participants include nearly 100 researchers in 15 specialties, located in three different states several thousand miles and three time zones apart. Their goal is to improve the prognosis for this deadliest of skin cancers that is increasing at alarming rates.

In 2002, the National Cancer Institute recognized Mayo’s excellence in cancer care by extending its official Comprehensive Cancer Center designation to include all three sites: Rochester, Minnesota; Jacksonville, Florida, and Scottsdale/Phoenix, Arizona. The result: one integrated, comprehensive cancer center serving three geographical sites – an approach the study group began in 1999.

“The integration efforts have already had a remarkable impact on my practice,” notes Dr. William Maples, an oncologist in Jacksonville who has worked on melanoma for almost 20 years.

Adds Dr. Mark Pittelkow, who chairs the Melanoma Study Group in Rochester: “With our membership approaching nearly 100, we're pooling an enormous amount of talent that really brings out the best – and I think our investigations reflect that.”

Dr. Barbara Pockaj in Scottsdale, Arizona agrees: “Everyone in the group began their studies out of an individual commitment to finding a cure for this devastating disease. When we combine that passionate drive, the synergy is incredible.”

SOME COLLABORATIVE RESULTS, SPECIFIC TO MELANOMA:

- **Noninvasive experimental treatment strategies** – One example: By administering a biological agent (a molecule called GM-CSF) in a nasal spray to the lungs in combination with an aerosolized cancer vaccine, researchers prompt the immune system to recognize the cancer as foreign and attack the tumor. After the attack has begun, the body develops its own vaccine against the tumor. This is a noninvasive, nontoxic experimental approach that to date appears to be free of negative side effects.

- **Angiogenic chemotherapy (cutting off blood supply of tumors)** – A new trend in the treatment of cancer is using drugs to block the growth of blood vessels in tumors, depriving them of blood supply. The rationale behind this is the fact that most types of cancers depend on the formation of new blood vessels, a process called angiogenesis, in order to grow and spread. In angiogenesis, cancer cells can make – or cause healthy cells to make – chemicals to stimulate the growth of new blood vessels. Mayo researchers are testing a drug injected under the skin that lowers a factor in the blood that promotes the growth of tumor-nourishing blood vessels.

- **Highly original gene therapy for malignant melanoma vaccination** – Mayo researchers delayed melanoma tumor growth in mice – and induced complete tumor regression in some mice – by taking an unusual tactic, which they are now planning to translate into human clinical trials. Their strategy: use normal, healthy cells that are the type that give rise to melanoma to make a vaccine against melanoma – thus suggesting that healthy cells have the power to teach the immune system how to identify and fight melanoma. Traditional thought has been that normal cells do not possess this capability, and that an anti-cancer vaccine would need to be based on material from cancer tumors – not on the healthy cells from which it derives.

“**A-B-C-D**” SKIN SELF-EXAMINATION:

To detect melanomas or other skin cancers, use this skin self-examination guide, adapted from the American Academy of Dermatology:

- **A.** Is for asymmetrical shape. Look for moles with irregular shapes, such as two very different-looking halves.
- **B.** Is for irregular border. Look for moles with irregular, notched or scalloped borders – characteristics of melanomas.
- **C.** Is for changes in color. Look for growths that have many colors or an uneven distribution of color.
- **D.** Is for diameter. Look for new growth in a mole larger than about 1/4 inch (6 millimeters).
Mayo Clinic’s global network of care

Since the 1860s, when the Mayo family first established the clinic in Rochester, Minnesota, its national and international network of care has expanded to include many people in need across many lands. Here’s what you can expect in the way of service from two of Mayo’s offices outside the United States.

Calling Dubai

In Dubai, United Arab Emirates, Mayo Clinic offers a new clinical facility for cardiovascular treatment as well as services for patients or physicians in need of a referral to one of Mayo Clinic’s three multidisciplinary campuses in the United States.

The clinic, which opened in collaboration with Dubai Healthcare City, marks the first time that Mayo Clinic has offered ongoing, on-site patient care outside the United States.

“Cardiovascular diseases are the main cause of death in this region,” says Taysir Khatib, Mayo Clinic’s regional manager for the Middle East. “Therefore, cardiology was at the top of our list of services we thought to offer when we decided to start our clinic in Dubai.”

Khatib and a staff of five others also stand ready to help with referrals, escorts, accommodations and appointments at Mayo Clinic in the United States.

Khatib, who grew up in the West Bank city of Ramallah and later emigrated to the midwestern United States, knows a little something about cultural dislocation and follow-through.

“While a patient is at Mayo Clinic in the United States, I usually call them from Dubai to make sure everything is going well,” he says. “I also provide them with my mobile phone number to call me if they need to. Hopefully, this will give them peace of mind while they are away from home and loved ones.”

Calling Mexico City

For Rogelio Villanueva (M.D. and representative officer), Anja Neuenhaus (appointment coordinator) and Martha Garcia (administrative assistant), the patient success stories and triumphs are highly poignant.

There’s the 73-year-old man, who was able to hear for the first time in his life after a cochlear implant at Mayo Clinic in Scottsdale/Phoenix, Arizona; the Mexican rancher who resumed horseback riding after back surgery at Mayo Clinic; and the young mother of three whose brain tumor was so large, no doctors in Mexico City would attempt surgery. “She was immediately received and evaluated at Mayo Clinic in Scottsdale,” says Villanueva, who along with his colleagues helps facilitate the trip from Mexico to Mayo Clinic’s three campuses in the United States. “After a 14-hour surgery, she doesn’t have any secondary effects and lives a perfect life with her family.”

And word has spread, says Neuenhaus, among Mexican businessmen with prostate cancer. “We have coordinated many appointments for these patients with Mayo Clinic urologists, with total post-op satisfaction.”

In addition to making referrals for more than 300 patients per year, the staff handles 60 to 70 phone calls a day, makes the right match between doctor and patient, coordinates appointments, translates medical documents, helps untangle insurance problems, assists with transportation and lodging, and follows up on patients’ progress.
An indomitable spirit
Spanish woman wins three rounds against osteosarcoma

“My friends not only consider me hyperactive, they think I am the happiest person in the world.”

Aitana Paya Perez

Aitana Paya Perez, 27, likes to talk, laugh, play volleyball, run, climb mountains, travel and be with friends. What she doesn’t like is to sit still.

Fate forced her to slow her pace, however, after doctors in Barcelona, Spain, discovered a tumor in her jaw in 1999. Although initial surgery showed no malignancy, six months later the tumor became more aggressive and Aitana went back to the operating room.

This time, doctors sent their biopsy results to Mayo Clinic in Rochester, Minnesota.

The spirited survivor doesn’t lack for humor: “The first time I heard about Mayo was through the Simpsons, as they have their checkups there,” she says, laughing.

“No, it’s not like that. The doctor who operated on me used to go to Rochester on vacation and knew the pathologists at Mayo Clinic. Therefore, he decided to send the biopsy there. I was told here [in Spain] that the images didn’t look good, and, unfortunately, they were right.”

The diagnosis was an osteosarcoma, bone cancer.

The family rallies
Aitana’s parents, who live in Alicante, in southern Spain, immediately headed for Barcelona, where their daughter was studying architecture. The next day, all three got on a plane for Rochester.

Mayo Clinic Drs. Eugene Keller and Scott Strome performed a 12-hour surgery to take 10 cm (4 inches) from Aitana’s fibula to reconstruct her jaw.

Aitana (whose mouth was wired shut until she healed) remembers only good things about the long hospitalization and six weeks’ recovery in Rochester. “It’s incredible!” she says. “Everything is well organized, everybody is very nice and caring, the nurses are very good, and I didn’t feel as if I were in the hospital.”

Aitana earned a nickname while at Mayo Clinic: “The Inquisitive One.” But doctors entertained any question she had: “They explained everything to me, even the risks,” she says. “And that gave me confidence.”

Aitana returned to Barcelona and began a happy chapter of her life: She socialized, started to work, cautiously resumed some physical activities and excelled in school. “After having been so sick, I wanted to do well and enjoy life,” she says.

A vigilant team
But three years later, a nodule in her left lung put everyone on alert: The cancer cells in her jaw had migrated. In November 2003, Dr. Stephen Cassivi removed the nodule at Mayo Clinic. Under Mayo’s protocol, Aitana returned to Spain for chemotherapy, which was completed in April 2004.

Life continued apace: Aitana went to Denmark as an exchange student, fell in love and prepared her thesis.

But once again, she had to face down her disease. In February 2005, another follow-up showed a nodule in her right lung. Dr. Cassivi allowed Aitana a few months’ reprieve so she could graduate as an architect, then operated in April 2005.

“He is always looking after me,” Aitana says of Dr. Cassivi. “He is very sweet and takes care of me. If there is a problem, he calls me right away.”

Dr. Cassivi praises the teamwork: “We have a tremendous amount of experience with caring for patients from overseas; the teamwork that is a hallmark of the Mayo Clinic model is essential in these cases, as it allows for thorough yet expedited multidisciplinary specialty care.”

Aitana is back in Denmark, working, thriving and in love. It seems she and the Danish summer have much in common: In Aitana’s life, the sun shines for many hours.
Patients suffering from chronic migraine headaches who have found no relief through medication may find hope through occipital nerve stimulation (ONS), according to research by physicians from Mayo Clinic in Arizona.

ONS treatment involves implanting a neurostimulator under the skin at the base of the head. The neurostimulator delivers electrical impulses near the occipital nerves via insulated lead wires tunneled under the skin. More than 32 million Americans, 70 percent of whom are women, suffer from migraines. Many progress to a chronic condition, experiencing headaches more than 15 days per month. About 40,000 people in the United States do not respond to existing treatments, and many may be candidates for alternative therapies.

For more information about the neurosciences practice at Mayo Clinic, go to: www.mayoclinic.org/neurosciences/index.html

A safe, effective treatment for chronic migraines

Jacksonville, Florida – Urologists at Mayo Clinic in Jacksonville report that about two-thirds of the men they have treated for benign prostatic hyperplasia experienced significant improvement in urinary symptoms six to 12 months after treatment with interstitial laser coagulation.

Mayo Clinic urologist Dr. Todd Igel says most men with mild to moderate prostate enlargement are candidates. "This is an alternative to medical therapy," he says, "particularly for men whose symptoms don’t improve with medical therapy, experience objectionable side effects or don’t want the ongoing expense of taking medications."

The office-based procedure takes about 20 to 30 minutes and usually requires only a local anesthetic. A thin fiber-optic laser is threaded through the urethra, and controlled energy is delivered into the prostate gland. The prostate begins to shrink over time, offering relief from such symptoms as weak urine stream, difficulty in starting urination, nighttime urination and inability to completely empty the bladder.

To learn more about Mayo Clinic’s approach to benign prostatic hyperplasia, go to: www.mayoclinic.org/bph/index.html

Two more genes on SIDS most-wanted list

Rochester, Minnesota – Mayo Clinic researchers added two more cardiac genes to the list of potential links to sudden infant death syndrome (SIDS), increasing the possibility that genetic defects of the heart may cause up to 15 percent of SIDS cases.

In the two recent separate studies, researchers examined caveolin-3 (CAV3) and the cardiac ryanodine receptor (RyR2) and found evidence to implicate both as SIDS-susceptibility genes. SIDS – the sudden, unexplained death of an infant under 1 year old – is estimated to cause 2,500 deaths each year.

“We are continuing to expose the causes of SIDS,” says Dr. Michael Ackerman, principal investigator of both studies. “So far, we have now added six genes to the SIDS most-wanted list.”

To learn more about the Sudden Death Genomics Laboratory at Mayo Clinic, go to: www.mayoclinic.org/long-qt-syndrome/research.html
Mayo Clinic research briefs

ADVICE FROM HIS HOLINESS

The 14th Dalai Lama, the Buddhist spiritual and political leader of Tibet, took time out during a routine checkup in April at Mayo Clinic in Rochester, Minnesota, to give doctors a dose of his medicine. “Hatred and anger are very bad for the body,” he told a roomful of physicians, medical professionals and patients. His address also focused on practices that encourage a peaceful mind and positive ways to live during difficult times.

TEAM PLAYERS IN HEART RESEARCH

Researchers at Mayo Clinic in Scottsdale/Phoenix, recently recruited an unusual batch of volunteers for a study of cardiovascular disease: 60 retired National Football League (NFL) players. “We know that body mass is a major factor in heart disease, as we know that football players are often very large people,” says Dr. Archie Roberts, a cardiac surgeon and former NFL quarterback himself. The good-natured big guys submitted to EKGs, carotid and cardiac ultrasounds, lung-function studies, body-composition analyses, and blood and sleep-apnea testing.

ON THE HONOR ROLL

U.S. News & World Report magazine cited Mayo Clinic in its July 10 special healthcare edition as among the best hospitals in the United States. To make the magazine’s “honor roll,” a medical center had to receive superior ratings in at least 6 of 16 medical specialties; many Mayo Clinic specialties were ranked #1 or #2. “The results of this survey honor the entire staff of Mayo Clinic,” says Dr. Glenn Forbes, chief executive officer of Mayo Clinic in Rochester. “The extraordinary happens here daily, because people are committed to working together to provide only the best care and support for our patients.”

TO YOUR HEALTH...

heading off OSTEOPOROSIS

Women who have completed menopause are at increased risk of osteopenia, a condition of bone loss that’s serious but not as severe as osteoporosis. The weak and brittle bones caused by osteoporosis are a major cause of old-age fractures and hospitalizations – and they can be avoided if women heed the early warning alarm that osteopenia sounds. Every postmenopausal woman should have a bone mineral density (BMD) screening by age 65. Your doctor may recommend it earlier, depending on risk factors. If the results indicate osteopenia, bone health can be improved by:

• Taking 1,200 to 1,500 milligrams of elemental calcium and 400 to 600 international units of vitamin D every day.
• Quitting smoking.
• Performing daily weight-bearing exercises and strength training.
Mayo Clinic Connection

New frontier
Mayo Clinic forms a partnership in Brno, Czech Republic

One of the European Union’s largest initiatives for 21st century biotechnology and medical research will be based on a collaboration between the Mayo Clinic and the Czech Republic’s International Clinical Research Center (ICRC) in Brno, Czech Republic.

The ICRC partnership will focus on medical research and education, particularly in the areas of cardiovascular and neurovascular diseases, internal medicine, neurology and oncology. The multifunctional center will offer advanced clinical research facilities, a state-of-the-art cardiovascular clinical center, international educational center and a technology cluster.

Researchers at ICRC Brno have had considerable experience collaborating with Mayo Clinic, and this initiative is an extension of those efforts. “At this time we already have an informal program that allows Czech physicians and engineers to train in our Mayo lab,” explains Dr. Virend Somers, Mayo Clinic cardiologist and professor of medicine. “We look forward to broader and even more productive cooperation with our colleagues in Brno.”

The concepts underlying the ICRC were developed and refined at Mayo Clinic by Drs. Somers and Tomas Kara, who trained at Mayo Clinic with Dr. Somers, and now heads the ICRC Brno project. Together they will chair the ICRC’s International Advisory Board. Says Dr. Kara: “The logistics of the ICRC and the basic principles are very similar to those used at the International Space Station. This approach will result in the research process being shortened by as much as 50 percent compared with existing research facilities.”

To request an appointment, or for more information, please contact one of our International Appointment Offices listed below, or online at: www.mayoclinic.org/english/appointments.html.

■ Mayo Clinic in Jacksonville, Florida
  ph. 904-953-7000
  fax. 904-953-7329
  e-mail. intl.mcj@mayo.edu
  Office hours: 8 a.m. to 5 p.m. (Eastern Time)
  Monday - Friday

■ Mayo Clinic in Rochester, Minnesota
  ph. 507-284-8884
  fax. 507-538-7802
  e-mail. intl.mcr@mayo.edu
  Office hours: 7 a.m. to 5 p.m. (Central Time)
  Monday - Friday

■ Mayo Clinic in Arizona
  ph. 480-301-7101
  fax. 480-301-9310
  Office hours: 8 a.m. to 5 p.m. (Mountain Time)
  Monday - Friday

■ In Canada, the following Mayo Clinic telephone information services are available:
  Calgary area residents: 403-242-5320
  Thunder Bay area residents: 807-346-2218
  Winnipeg area residents: 204-942-0659
  or call Mayo Clinic directly: 888-441-2133