

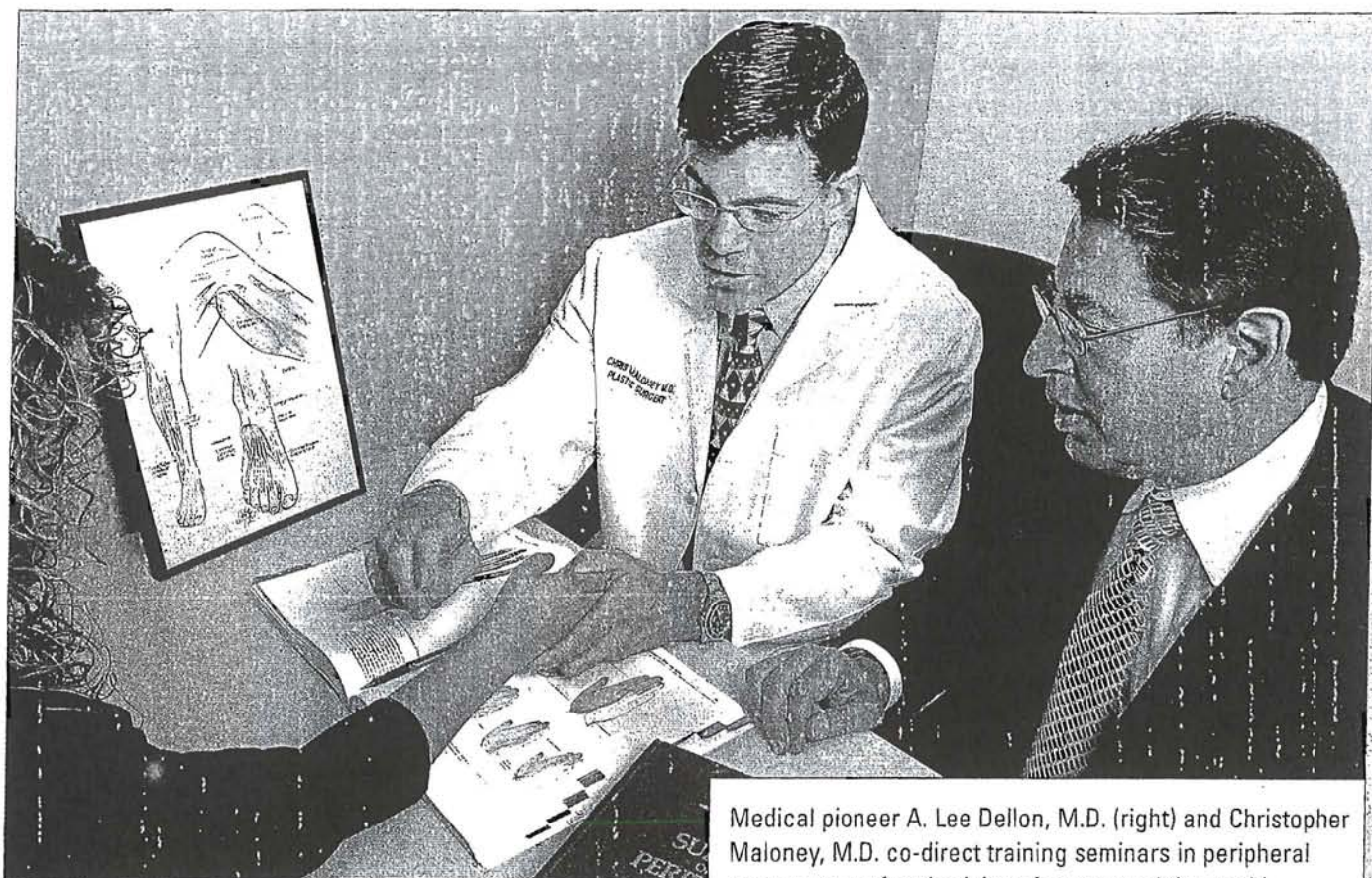
PERIPHERAL NERVE SURGERY

PIONEERING
PAIN
relief

Peripheral nerve surgery – it's not a term that just rolls off your tongue. But if you or someone you know suffers from pain in your feet or joints, this procedure could be a life changing experience. As many people with diabetes can tell you from first-hand experience, one of the most common complications of the disease is neuropathy, which affects the peripheral nerves and leaves you with numbness or tingling in your fingers or toes.

One local team of physicians believes that they have the answer for peripheral nerve problems.

BY WENDY SWEET / PHOTOGRAPHY BY MARTHA LOCHERT



Medical pioneer A. Lee Dellon, M.D. (right) and Christopher Maloney, M.D. co-direct training seminars in peripheral nerve surgery for physicians from around the world.

The Cause ... the Cure?

Peripheral nerve surgery is the brainchild of A. Lee Dellon, M.D., the director of the Institute for Peripheral Nerve Surgery in Tucson and Baltimore. A professor of plastic and neurological surgery at Johns Hopkins University and a clinical professor of plastic surgery, neurosurgery and anatomy at The University of Arizona, Dr. Dellon has pioneered nerve decompression procedures to restore sensation and relieve pain in the lower extremities, especially in patients with diabetic neuropathy.

"Peripheral nerves are all the nerves in the body that are outside your brain and spinal cord," explains Dr. Dellon. "These nerves give us feeling in our hands, feet and face. They are how we interface with our environment; these nerves tell us about movement and pressure, hot and cold and pain. A disease that affects peripheral nerves can be called a neuropathy," he says. "If the nerve is choked or pinched, it doesn't get enough oxygen. The nerve makes you aware of this lack of oxygen by sending you a warning message. The symptoms of neuropathy can be pain, a tingling or buzzing sensation or numbness. The most common cause of neuropathy is diabetes."

However, Dr. Dellon is quick to point out that diabetes is not the only cause. "Other diseases that can give you neuropathy include thyroid problems, vitamin deficiencies, alcoholism and some kinds of arthritis. Some of the chemotherapy drugs given to cancer patients also can cause neuropathy

— particularly Taxol and compounds that contain platinum," he notes. Additionally, there are many patients with an undetermined cause. "In the United States there are equally as many people with neuropathy of unknown cause (known as idiopathic neuropathy) as those with diabetes," he states.

"The mantra of doctors used to be neuropathy is progressive and irreversible," says Dr. Dellon. A patient would be given drugs to deal with the problem, he says, adding that the drugs had their own side effects and monetary cost. "I was a hand surgeon, and I would treat diabetics with carpal tunnel syndrome. Afterwards, the patient would say — 'My hand feels great. Can you do the same for my feet?' And I would say no — that's peripheral neuropathy, and I can't help you. Then one day I decided, why not see if we can restore sensation and reduce pain in the feet?" That was about 20 years ago, and this physician says he has been successfully treating patients ever since.

The outpatient procedure can be done in a number of Tucson hospitals, including University Medical Center, St. Joseph's, Tucson Medical Center and HealthSouth.

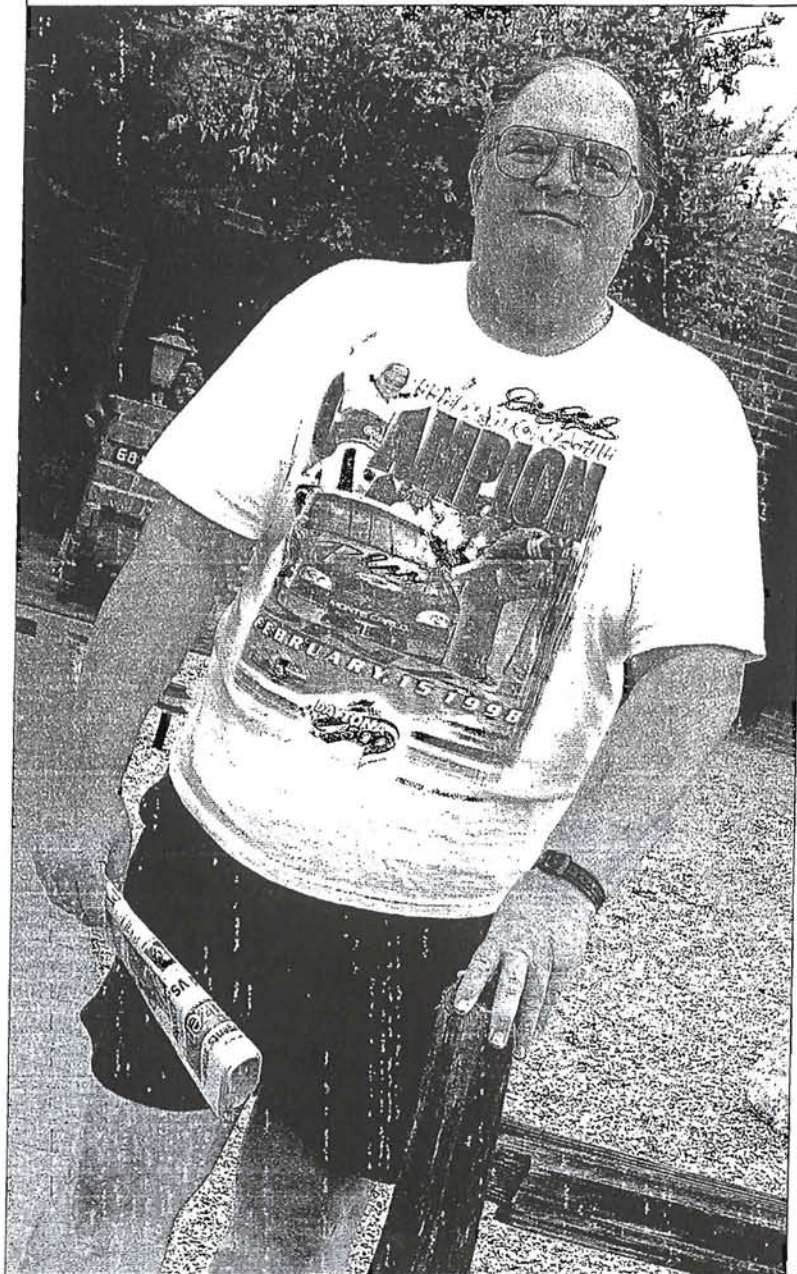
Dr. Dellon, who says he has operated on more than 15,000 nerves in the past quarter of a century, has written three books, and is in the process of writing his fourth. He also has published more than 340 scientific articles and written 50 chapters in other authors' books. ▶

How the Surgery Works

Dr. Dellon compares nerve decompression to loosening your belt after a big meal to make room for dessert. "With this surgery, we open tight tunnels in the body that are usually pushing the nerve against the bone. We make a straight cut over where the compressed nerve is and release the tight area through which the nerve passes by dividing a ligament or fibrous band that crosses the nerve. This gives the nerve more room, allows blood to flow better in the nerve and permits it to glide with movements of nearby joints. The surgery takes about two hours and is done as an outpatient procedure," he says. As with any surgery, there are risks. "The biggest is the risk associated with anesthesia," he states. "There will be a scar, and diabetics have to have

enough circulation in their feet to promote healing (for the surgery to be successful)." There also are the risks of bleeding and infection. In addition, "if the patient does too much walking too soon, the stitches may tear out."

You must have this type of surgery done soon enough for it to help, Dr. Dellon stresses. "When the surgical decompression is done early in the course of nerve compression, restoration of blood flow to the nerve will stop the numbness and tingling, and permit strength to recover. When the decompression is done later in the course of nerve compression, and nerve fibers have begun to die, decompression of the nerve will permit the diabetic nerve to regenerate. But, if you wait too long to decompress the nerve, ▶



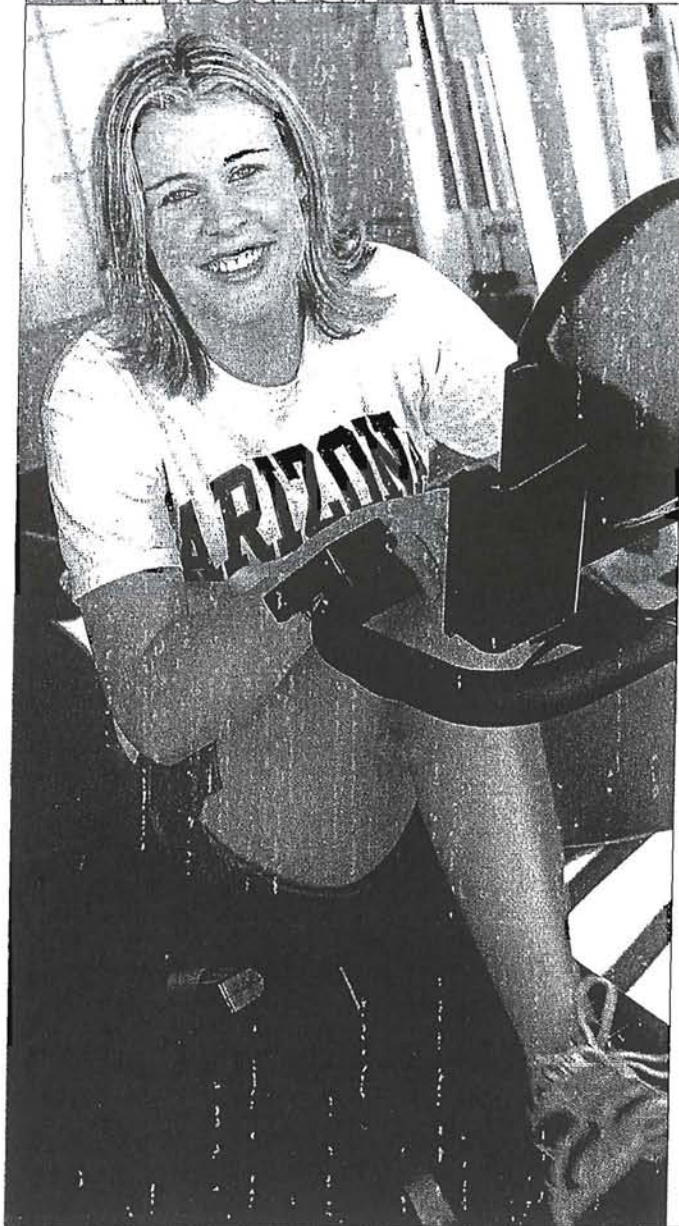
A Patient's Story: Albert Crispin

Albert Crispin says what Dr. Dellon has done for him is "miraculous." Before the peripheral nerve surgery, "I was fast becoming a basket case," he says. Crispin, who is retired after working in engineering for Hughes Aircraft for 30 years, was diagnosed with diabetes in 1988. Soon after, "I started noticing that it felt like a sock was wadded up under my foot," he says. He would check, but the sock would be fine. "Then, my feet started hurting a lot, and would be numb at the same time. Eventually, my feet felt fine, but my hands started hurting. Then, all four appendages started hurting."

Crispin had neurosensory testing at the institute in January 2003. "The tests showed that my right leg and foot were worse than my left. Dr. Dellon said he could restore at least 80 percent of the sensory to my right leg so the pain and numbness would go away. He also said I should get most of my balance back. We decided to do the right leg first. Anything was better than going through the rest of my life the way I was," says Crispin.

In July 2003, "I had my right leg and foot done. Three incisions were made — one on my leg and two on my feet. After the surgery, I immediately noticed a lot of the pain had gone away. Today, the pain is probably 99 percent gone, my feeling is back, as is most of my balance." Crispin had his left leg and foot done in September 2003. He had surgery on his right arm and hand in January 2004, which lessened the pain in his hand and increased the flexibility. His insurance covered the surgeries. "I have feeling in my feet. I can walk around and not worry about stepping on something because I can't feel it," Crispin says. "I used to use a cane all the time when I went out — now I only take it along if I'll be doing a lot of walking around a mall. My quality of life has improved tremendously."

A Patient's Story: Jamie Johnson



"I have had knee problems since 8th grade," says 5-foot 10-inch Jamie Johnson, a 19-year-old student at The University of Arizona. "Doctors told me I was growing too fast, and it was just something I would have to live with." In June 2001, Johnson had arthroscopic surgery on her left knee. After about two month's recovery time, she was back cheerleading for Catalina Foothills High School. However, in January 2002, an MRI showed a torn meniscus on that same knee, so she went back for more surgery. "When my doctor went into the knee, he couldn't find the tear — but in the process, a nerve was damaged," she says. A few months later, Johnson was suffering excruciating pain in her left knee. "I was now 17 and had a left leg like a 90 year old," she says. "I couldn't even do the stairs at the high school," she admits. The knee pain also kept her out of cheerleading her senior year. "I was really limited with my life," she recalls. "There were so many things that were cut out. I couldn't run, and if I went to a movie, I'd have to go home right afterwards and ice my knee. I was taking up to eight over-the-counter painkillers a day plus prescription pain medication."

Johnson saw a number of specialists, including an orthopedic surgeon and a pain specialist. She and her parents were making plans to go to the Mayo Clinic in Rochester, Minnesota, when the pain specialist recommended she see Dr. Maloney. "We went to him, and he knew exactly what the problem was. My mom and I started crying because we knew it was the light at the end of the tunnel." Dr. Maloney used an anesthetic block on the nerve he suspected was causing the problem and had Johnson walk and jump. "I felt no pain," she says. About two weeks later, in June 2003, she had knee denervation surgery (insurance covered the cost). During her procedure, two nerves were cut, and the nerve endings were buried in muscle. "I had stitches for two weeks and four weeks after the surgery, I was running," Johnson exclaims. "It's like a whole new life. I can run again, I can ride my bike again, and I don't take any pain medication. I lost a lot of the feeling in my knee, but the numbness doesn't bother me. I'd rather have that than the pain!"

recovery may not be possible," he explains. "If you already have ulcerations on your feet, or have lost toes, then very little sensation may be recovered because the damage to the nerve has become irreversible.

"If you have symptoms, you should have neurosensory testing (which measures the degree of sensory and motor loss). It is non-invasive and not painful," Dr. Dellon relates. "The American Diabetes guidelines say every diabetic should have sensory testing once a year to know if they have neuropathy and are at risk for ulcers and amputations. If your doctor cannot provide the testing, you can have it done here at the Institute." In fact, Dr. Dellon has developed the Pressure-Specified Sensory Device to do such testing. "This is done with a computer and doesn't hurt because there are no needles and no electric shocks," he says.

As to the effectiveness of peripheral nerve surgery, Dr.

Dellon states, "Overall, about 80 percent of those diabetic patients who have had a nerve decompressed have had decreased pain and improved sensory and motor function," he says. Because sensation is restored to the bottom of the feet, balance also is improved. Peripheral nerve surgery also can result in lower health care costs, according to Dr. Dellon. "Patients can take less pain medication. They get their balance back, don't fall and break their hips, they're not admitted to hospitals for infections."

Training the Surgeons

Dr. Dellon opened the Institute for Peripheral Nerve Surgery in Baltimore about 25 years ago, and his Tucson office in 2001. "I'm in Tucson about one or two weeks at a time every six weeks," he says, adding he is now able to spend all of January and February here. "My wife Luiann ▶

and I have a home in the northeast foothills, and we are officially legal residents of Arizona."

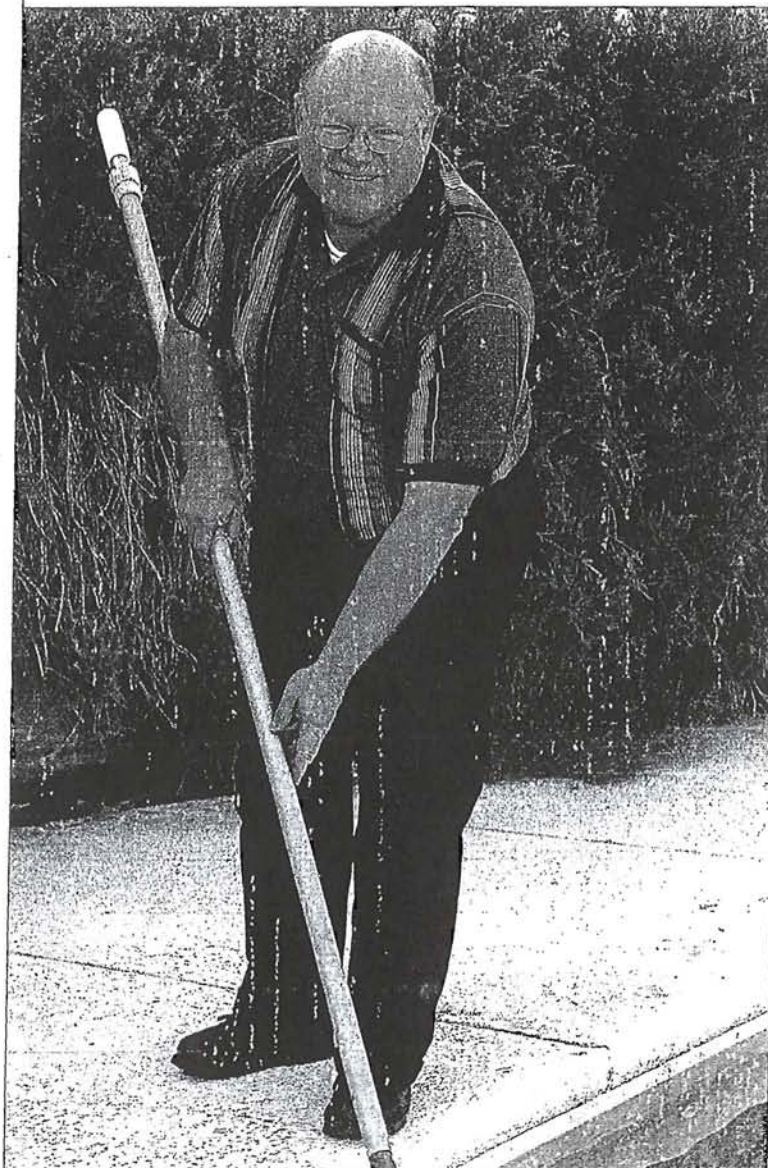
Although he says his office is the only one in town that offers this type of surgery, Dr. Dellon is doing his part to share his knowledge with other doctors. "I have personally trained more than 210 surgeons who are currently doing peripheral nerve surgery in 40 states in the United States and 13 foreign countries. I do five or six training sessions a year." Each session is limited to 10 "carefully selected board-certified surgeons," he notes. Although the majority of training has been held in Baltimore, three of the sessions have been held at University Medical Center. The three-day seminars consist of both lectures and hands-on experience.

Another Member of the Team

One of the M.D.'s Dr. Dellon trained now works with him at the Tucson office and co-directs the training seminars. A native of the Old Pueblo, Christopher Maloney, M.D. spe-

cializes in all aspects of plastic and reconstructive surgery, including peripheral nerve. A graduate of Columbia Medical School, he completed his plastic surgery training at Harvard. "While at Harvard, I knew I wanted to come back to Tucson to work," Dr. Maloney says. "A mutual friend told me that Dr. Dellon was looking for a partner here. I was a bit skeptical about peripheral nerve surgery because no one at Harvard was doing it. But I went to Baltimore and took Dr. Dellon's course. What blew me away were the number of patients who had a leg done, and were coming back to have the procedure on the other one. The surgery definitely works. That is evidenced by the fact patients come back for the second leg," he says.

Dr. Maloney, who says he's the only fulltime plastic surgeon in Arizona doing this type of procedure, has now performed several hundred of them. Diabetics are not the only ones who can benefit from peripheral nerve surgery, he notes. "We can help with groin, elbow, shoulder, wrist, knee ▶



A Patient's Story: Earl Zoeller

Earl Zoeller, an electrical project manager and estimator, says his feet started hurting about a year and a half before he was diagnosed with diabetes in 1999. "It felt like I was walking on ground glass and hot lava — all at the same time," he recalls. "In addition to the pain, there was numbness. My primary care physician — Dr. Mitchell Parker — sent me to probably seven or eight different types of doctors to try to find some relief. I tried a number of different medications, but nothing helped." An anti-depressant his doctor had heard about did give him some relief. It cut the pain about 30 to 40 percent. "Then, a podiatrist I was going to said he had heard of Dr. Dellon's Institute and recommended I go see him. I called Dr. Parker for a referral and he gave it to me immediately."

Zoeller met with Dr. Maloney at the Institute in October 2003 and had his feet tested. On Nov. 17, he had surgery on his left leg and foot. Following the surgery, "I noticed an immediate improvement. I could feel my foot and toes again. My balance was just starting to be affected before the surgery, and it was better afterwards. I can walk one whale of a lot farther than before without pain, but if I go too far it gets uncomfortable," he says. "Before the surgery, if I walked barefoot on a hard flat surface I was in extreme pain. Now, I can walk barefoot on tile floors. The numbness hasn't gone away completely, but the doctors said it might get less and less with time."

Although the doctors wanted to wait three months before performing surgery on Zoeller's other foot and leg, "I wanted to get it done before January 1, 2004 to avoid having to pay another insurance deductible. So, I had my right leg and foot done on December 23, 2003. That was my Christmas present to me!"



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and ankle pain," he says. "We use anesthetic blocks to determine which nerve is sending the pain signal to the brain," he explains. "Then we cut the nerve that innervates the joint, which interrupts the pain signal going to the brain."

Although the surgery doesn't work for everyone, he admits, for those with neuropathy, about 88 percent of them get "good" or "excellent" relief from pain, and 71 percent report a "good" or "excellent" return of sensation.

A Patient's Story: Allen Balch

For years, Allen Balch lived with pain in his feet. The retired resident of Green Valley has been a diabetic for more than 20 years. About 10 years ago, he started noticing numbness in his feet. "Then it progressed to pain. It felt like I was walking on broken glass," he recalls. What he was experiencing were the symptoms of diabetic neuropathy. For years he was told by reputable physicians that there was nothing that could be done for the neuropathy. But one day he learned about the Institute for Plastic Surgery and Peripheral Nerve Surgery in Tucson. "I was very skeptical," Balch says. "But at that point of pain, you figure nothing ventured, nothing gained. I discussed it with my primary care physician, and he said to give the Institute a call." Balch did just that, and following a sensory exam, he had surgery on his right foot in March 2003.

"I noticed improvement immediately," Balch says. Both his walking and balance were helped, he says. "I found myself able to move more freely without the pain. There's still some numbness, but no pain." In June 2003, Balch had the surgery performed on his left foot (both surgeries were covered by Medicare). "I was ready to go (for the second surgery) right after the first, but the doctor made me wait three months to make sure I had fully recovered." Since having the surgery, Balch says he has recommended it to others "innumerable times."

A Patient's Story: Ginny Shaw

Chemotherapy may have helped Ginny Shaw in her battle against breast cancer, but it left her with numb feet and hands, or, in medical terms, chemotherapy-induced neuropathy. Shaw began chemo in November 2001 as part of a special study. However, after three major doses of Taxol (along with Adriamycin and Cytoxan), "My oncologist stopped the treatments in March 2002 because I could hardly walk," she recalls. Six weeks of radiation wrapped up her cancer treatment, but the numbness remained. "I was told it should get better, but no one offered me any alternatives," she says. Although the numbness in her hands did eventually improve, she continued to suffer from neuropathy in her feet. "I could walk, but I couldn't feel anything," she explains. As a result, she frequently tripped and fell, even breaking a toe.

Because she couldn't feel anything under her feet, Shaw couldn't go barefoot. "I'm a desert rat," says the native Tucsonan. "I don't like wearing shoes!" She also had horrible muscle spasms in her feet. "They were painful, and I couldn't sleep," she observes.

Shaw's ex-husband is friends with Dr. Maloney, and he recommended that she meet with the doctor for a consultation. "I met with Dr. Maloney in May 2004, and after doing tests on my feet, he believed that peripheral nerve surgery would be beneficial. My right foot was worse than my left, so he did that one first." The surgery was performed on the inside of her right ankle June 9, and within just a few weeks, "I had feeling in all of my toes, and half of my foot was back to normal," she says. "My balance is much better, too." During a recent vacation, she spent all week walking around Washington, D.C., in low heels and didn't trip once. "I couldn't have done that a year ago," she notes. **TLN**