Caring for the Diabetic Foot
Keeping athletes up and running
Preventing falls
What to expect from today's podiatrist
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The Stroke Center at Saint Francis Hospital has earned a Gold Award for Stroke Care from the American Heart Association.
An introduction to Today’s Podiatrist

By Lewis Sims, DPM

We treat feet. That’s what we do all day long. So we see a really wide range of problems: from little kids with flat feet or an ingrown nail, through mid-aged folks with hammertoes or bunions, to older patients with nerve problems, structural breakdown or, more and more, diabetes-related problems.

As a result of their study and clinical experience, podiatrists are considered the true experts in the foot.

The American Podiatric Medical Association, the leading professional organization for podiatrists, celebrated its centennial in 2012. The New York College of Podiatric Medicine, where Erik and I studied, was founded in 1911. Those 100 years have seen remarkable developments in the practice of podiatry, as well as in medicine as a whole.

When I first started out as a podiatrist some 40 years ago, we did a great deal of palliative care—trimming of fungus nails, taking care of corns and calluses, and minor basic surgery on hammertoes and bunions. In the course of my career, all areas of foot care have expanded in scope. Today we have advanced imaging at our disposal, we perform endoscopic surgeries, and we even do joint implants, just like they do with knees. Among the most significant developments is the way today’s podiatrists function as part of an integrated medical and surgical team to manage the more serious foot problems resulting from diabetes and from aging.

Not so long ago, when a patient in his or her late seventies came in to see us, it was rare. Now we frequently see active people in their eighties and even nineties. Of course, being active means being able to walk. Yet the natural wear on foot cartilage, the thinning of padding in the foot, and changes in the skin and nails can make walking both difficult and painful.

In some people, over time, the big toe joint becomes seriously arthritic, degenerated and quite painful. Our approach to treating this joint is similar to the orthopedist’s approach to treating degenerated knees. We use braces, physiotherapy and cortisone injections. If the patient is still experiencing some symptoms, has pain, or is unable to walk, we can
replace the joint. Joint replacement isn’t an everyday process, it’s a last resort, but it’s also a function of the fact that people are living longer and want to do more things. For them, we want to go the extra step, and we do several dozen joint replacement procedures every year.

Especially among our older patients, the treatment of diabetic foot wounds has become a significant focus of care. The nature of the disease and its complications put diabetics at great risk of infection. In response to the challenge, podiatry has developed new treatments and techniques for limb preservation. Our diabetic patients often have “comorbidities,” such as kidney, heart or vascular disease. In such cases, we work as part of a medical team that includes a vascular consult, an infectious disease consult, whatever is appropriate. We’ll do the procedures needed to take care of that ulcer or infection and then rely on the vascular surgeon to bring circulation down to the foot and the endocrinologist to better control the diabetes. (see a full discussion of Caring for the Diabetic Foot on page 8).

Today, we use advanced modalities for both conservative and surgical treatments. In a condition such as neuroma (a pinched nerve in the ball of the foot), for example, new conservative treatment allows us to avoid surgery for the vast majority of cases. In the past, if cortisone injections did not relieve the pain, many patients would need to have the nerve removed. Now we use dehydrated alcohol, which can weaken the nerve and limit its ability to transmit (painful) sensation. With a success rate over 90 percent for this treatment, most cases will never require surgical intervention.

In the OR, today’s podiatrists have advanced implants and fixations available during surgery. For example, when repairing a patient’s torn tendon we often reinforce it with a collagen graft to strengthen the repair (the same as Shaquille O’Neal had done on his Achilles tendon). For reconstructive surgeries or broken bones, we have smaller and stronger screws and plates than ever before. All of this allows patients to walk earlier after surgery and experience even better outcomes.

The area of orthotics has seen tremendous improvement over time. These shoe implants are designed to accommodate or correct an abnormal or irregular walking pattern. When I started out as a podiatrist, there were just 2 types: a leather and cork orthotic made up in a lab, or one made out of steel. You can imagine how heavy, hard and unyielding they were. Now we have synthetic materials that have flexibility, are cushioned and offer shock absorption so we are able to build something that is much superior.

And to capture the shape of the foot, we now use a 3D-scanner that transmits the dimensions directly to the lab. This allows us to create an orthotic that is far more exact than was possible when we captured the foot’s contours from plaster impressions.

THE EDUCATION OF A PODIATRIST

Podiatrists are defined as physicians by the federal government and the nation’s nine colleges of podiatric medicine offer a 4-year core curriculum that is similar to that followed in other medical schools.

The first two years of podiatric medical college focus on the basic sciences—such as anatomy, pathology, microbiology and pharmacology—while the second two years focus on clinical education, and is based in accredited hospitals, clinics, and private practice settings.

The main difference between the training of MDs and DPMs is that podiatric medical education begins to focus on the specialty area much earlier and in greater depth and breadth. Specialized training for MDs does not really occur until residency training.

During their residency, podiatrists receive advanced training in medicine and surgery and participate in clinical rotations in anesthesiology, internal medicine, pathology, radiology, emergency medicine, and orthopedic and general surgery.
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Springing, pivoting, launching leaps and cushioning landings… it should come as no surprise that 15 percent of all sports-related injuries are to the foot. Bearing the weight of a body in furious motion, the foot is under enormous stress. Running can exert a force equivalent to four times the athlete’s body weight, while coming down from a dunk raises the load to as much as 20 times body weight.

All that fancy footwork—be it in varsity athletes, professionals, or weekend warriors—can result in a range of ankle sprains, traumatic injuries, and overuse injuries. Without proper treatment, an athlete’s minor foot issue can turn into a more serious, potentially sidelining condition.

“The student athletes we see are usually well trained and very driven,” says Dr. Lewis Sims. “They have their own sports and physiotherapy departments on campus, so they come to us with something that doesn’t respond to the usual emergency care.”

Since varsity athletes are motivated to get back on the court as soon as possible and may have a scholarship or championship to protect, “we treat them with all the high-tech modalities we have at our disposal,” says Dr. Sims. “For example, at the outset we may do more x-rays, CT scans or MRIs to pick up on subtle conditions such as bone bruises or ligament injuries.”

For both weekend warriors and varsity champs, once the acute condition has been treated, “I try to do something that is long-term and preventive of renewed injury,” Sims says.

The main sports-related foot problem, after ankle injuries, is plantar fasciitis, heel pain. The plantar fascia—the ligament supporting the arch of the foot—may be stressed and strained in a variety of ways. In runners, it receives repetitive microtraumas; in a basketball player going up in the air and coming down hard, the trauma is sharp and pronounced. “This type of injury can become chronically painful,” says Dr. Sims. “It’s a common pathology in general, but it can sideline an athlete for a long time.”

Finding the right type and right fit in shoe gear is tremendously important for relieving current pain and preventing future problems. “We have a list of brands and types of shoe most appropriate for each sport,” says Sims. “The goal is to provide proper cushioning, shock absorption and support. Orthotics are a big part of our arsenal, both customized and off-the-shelf models that are inexpensive and last through an entire season. Orthotics can also help compensate for structural factors that lead to plantar fasciitis.”

Stretching exercises are helpful in making the ligament more flexible, which reduces the stress upon it. “We provide written material on the type and frequency of the stretches patients should do,” says Sims. “Also very effective for plantar fasciitis and other tight ligaments is a night splint, which stretches out the ligaments and Achilles tendon.”

No matter how anxious an athlete is to get back in the game, to avoid further injury, it’s important to have the patience to wait for the problem to resolve.

After 44 years as a referee of varsity high school and college basketball, Dr. Lewis Sims has finally hung up his officiating sneakers. But, now aided by Dr. Erik Sims, he continues serving as the team podiatrist of the Marist Athletics Department. In 30 years at the post he’s treated countless student-athletes, advising team members on the type of injury they can safely play through and when they need to get off the court and seek a doctor’s care.

About his role as referee, Dr. Sims says, “I guess you’d call it a hobby, but when you get to that level it’s a little more than that, it gets in your blood. It’s very competitive and very physical. I had to work out during the year to be able to keep up with the game. Since I was on the court with the athletes a great deal of the time, I knew the feeling: when they had an injury they really had the drive to get back into the game.”
By the time a podiatrist has finished residency he or she has performed approximately 1,500 surgeries on the foot and ankle. “We’re not spreading our knowledge thin,” says Dr. Erik Sims. “We’re focused on the foot and ankle and knowing which procedure to choose, how the procedure will impact the bones around it and knowing the nuances that will provide optimal usage. I think podiatrists shine in foot surgery.”

“Our practice philosophy regarding foot problems is, if it’s not hurting, if it doesn’t really bother you, leave it alone,” says Dr. Lewis Sims, “surgical procedures always come with the potential of residual problems. But if it negatively affects your quality of life, let’s do something to improve it.”

The foot surgeons at Sims & Associates Podiatry, using well-proven procedures, have a very high success rate. Our advanced techniques also result in a shorter and more pain free recuperation period than you might expect.

Bunion surgery, which comprises the greatest number of our procedures, provides a classic example. Bunion joints are quite complex and there are, literally, a hundred different procedures that can be used on that single joint. We select the one that best fits the individual’s foot structure and, taking age and occupation into account, will provide a repair suitable for his or her activity level.

“One of the things people are always surprised by is how far the treatment has come,” says Erik Sims. “Years ago, foot surgeons would employ a pin that extended outside the foot for 4- to 6-weeks. Now we use small screws that are so strong patients are actually able to walk on the same day as surgery, without a cast or crutches. The pain and disability involved is much reduced as well. Most of our patients, if they come in on a Monday, will have weaned themselves off pain medication by Friday.”

The surgical treatment of heel spurs, in the minority of cases that don’t respond to conservative treatment, is another example of developments in podiatry. “We don’t actually take out heel spurs anymore,” says Dr. Eric Sims. “Research has made it clear the spur isn’t the cause of pain, it’s the plantar fascia ligament pulling on the spur that is to blame.” Endoscopic surgery to release the ligament, done through ¼-inch incisions, lets us get our patients back into their sneakers in less than five days and walking normally at four to six weeks. “It’s a much better experience for the patient than used to be possible,” says Sims.

One of the therapies we use to treat small tears in the tendons or ligaments that aren’t healing on their own, an alternative to surgery, is platelet rich plasma therapy, or PRP. We draw blood from the patient, spin it down in a machine to concentrate the platelets and growth factors, and then inject it into the area to stimulate healing. PRP has become very popular with athletes, but you don’t have to be a ball player to get it.

The majority of our surgery is performed on an outpatient basis in the local surgery centers as well as at both area hospitals. It’s a nice environment, and our patients tell us they find the treatment to be very personal and stress-free.
Caring for the feet of people with diabetes is among the most important things we do as podiatrists. Complications of the disease take a heavy toll on the feet, making foot problems the most common cause of hospital admission for diabetics.

It’s estimated that 25 percent of patients with diabetes will eventually develop a foot ulcer. Unfortunately, about half of these wounds will become infected and 20 percent of such infections will result in amputation. Diabetes contributes to more than 85,000 amputations every year.

Bear in mind, however, that truly significant reductions in the risk of amputation can be achieved by patients who make use of a podiatrist as part of their healthcare team, work towards good diabetes control and take the time to regularly perform proper foot self-care.

Causes of diabetic foot problems

In relation to the rest of the body, the foot is almost like an island off the mainland. To transport anything to the feet—blood, immune cells, nerve impulses—requires a long journey. If problems arise along the way, those things won’t reach the foot. So the clogged arteries, poor circulation, compromised immune system and nerve damage associated with diabetes increase the risk of developing foot wounds while impeding the natural healing process.

Neuropathy, which eventually affects the majority of people with diabetes, can lead to numbness in the feet. So a diabetic with neuropathy could have a pebble in his or her shoe and not even notice it until it rubs a hole in the skin. A bone that protrudes, or any bump on the foot, is a classic source of foot ulcers. That hammertoe that kind of sticks up a little too much and rubs against your shoe, for example, we see it all the time. All of a sudden the patient has an ulcer, and if they wait a little too long to have it seen to, when they come in it’s badly infected.

When I first started my training and was seeing dramatic wounds, I would find it hard to believe a patient who said it had started just a few days earlier. But it can be true, some infections develop really quickly in diabetics with compromised immune systems, they just take off. That’s why we tell people when they first come in… if you notice a blister, if you notice redness, don’t wait four or five days to seek care. It’s not always the case, but complications can develop in those few days.

The team approach

Years ago, diabetics would only get referred to us after they’d already developed an ulcer or other foot problem. It’s much better now: more and more primary care doctors are telling their diabetic patients that they need to see a podiatrist early on, along with any other appropriate specialists. We are committed to the team approach to caring for the diabetic foot. We have an excellent relationship with all the area specialists, the

Truly significant reductions in the risk of hospitalization and amputation can be achieved by patients who make use of a podiatrist as part of their healthcare team.
infectious disease doctors, the vascular surgeons, the endocrinologists, as well as the primary care physicians. We wholeheartedly believe in this approach and there’s plenty of evidence to show it is the most effective mode of care.

Early detection has a huge influence on foot health. When we see a newly diagnosed diabetic patient we go over all the information about circulation, smoking cessation, etc. But one of the things I focus on all the time is the need to take 20 seconds every day to check your feet. Look at the bottom of your feet, the top of your feet. Make sure there are no blisters, no redness, and no cuts. For people who can’t look at the bottom of their feet because they’re heavy or don’t have the flexibility, we recommend the use of a mirror.

When a patient does come in with a wound, the first thing we check for is infection. Sometimes a visual inspection is sufficient; sometimes a culture or an x-ray is needed to see if the bone underneath is infected. If there is infection present the first priority is treating it, whether by oral antibiotics or, if it’s severe, through hospitalization and IV antibiotics.

We check to be sure circulation is functioning adequately. Sometimes it’s easy, and we can feel the pulses; other times more testing is needed, and we might refer a patient to a vascular surgeon for the most thorough workup.

Modern modalities

Today’s podiatrist has several powerful wound treatment modalities at his disposal. One of the most effective is the living cell skin substitute, also called bioengineered alternative tissues. These are sections of skin processed in a lab—cultured from neo-natal foreskin and other sources—which possess the same sort of cells present in normal human skin. These grafts don’t close the wound immediately, but they stimulate the whole process of healing, bringing growth factors, proteins and collagen to the area. We call it “regenerative” medicine. When used in conjunction with other treatments, we see great results.

Vacuum-assisted closure—called negative pressure wound therapy or NPWT—is another relatively new tool. NPWT accomplishes several things: it pulls out all the bad drainage, acts like a vacuum to draw the sides of the wound together and stimulates blood flow to the area. We use this treatment a great deal, especially for very deep wounds, and it has made a huge difference. The therapy can convert deep, complicated wounds into shallow wounds with good blood flow, sometimes in a matter of days. A wound that might otherwise require six months to heal, might take as little as six weeks to heal when treated with negative pressure wound therapy.

Hyperbaric treatment, which we perform at the hospital, used to be thought of as a sort of last resort for refractory wounds, but no longer. In the hyperbaric chamber the patient breathes in 100 percent oxygen, which is five times the amount of oxygen in normal air. And since it is pressurized, the patient takes in 10-15 times as much oxygen as normal. The oxygen-saturated blood delivered to the wound promotes healing. It also actually cures certain types of infection that will not thrive in the presence of oxygen, and promotes angiogenesis, creating new tiny arteries around the wound area.

Together, these treatments have proved very effective in limb preservation. Despite the huge increase in the number of patients with diabetes, the number of amputations has not gone up equivalently.

At Sims & Associates Podiatry we treat our diabetic patients from start to finish, from prevention through hospitalization, and can save valuable time by directly admitting our patients to the hospital. With our experience and training, we don’t have to shy away from complicated cases.

Self-care for diabetic feet

- **Wash your feet in warm water every day.** Make sure the water is not too hot by testing the temperature with your elbow. Do not soak your feet. Dry your feet well, especially between your toes.

- **Look at your feet every day to check for cuts, sores, blisters, redness, calluses, or other problems.** Checking every day is even more important if you have nerve damage or poor blood flow. If you cannot bend over or pull your feet up to check them, use a mirror. If you cannot see well, ask someone else to check your feet.

- **If your skin is dry, rub lotion on your feet after you wash and dry them.** Do not, however, apply lotion between your toes.

- **Cut your toenails once a week or when needed.** Cut toenails when they are soft from washing. Cut them to the shape of the toe and not too short. File the edges with an emery board.

- **Always wear slippers or shoes to protect your feet from injuries.** Always wear socks or stockings to avoid blisters. Do not wear socks or knee-high stockings that are too tight below your knee.

- **Wear shoes that fit well.** Shop for shoes at the end of the day when your feet are bigger. Break in shoes slowly. Wear them 1 to 2 hours each day for the first few weeks.

- **Before putting your shoes on,** feel the insides to make sure they have no sharp edges or objects that might injure your feet.

Source: National Diabetes Information Clearing House
At Sims & Associates Podiatry, over 95 percent of the patients that we do bunion surgery on walk out of the surgery center without a cast or crutches, and often can return to work in one week.

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The risk of suffering a fall is of significant concern for older adults. According to U.S. government statistics, one in every three adults ages 65 or older falls and 2 million are treated in emergency departments for fall-related injuries every year. The long-term consequences of those injuries, such as hip fractures and head injuries, can seriously impact their health and independence. However, though the risk of falling increases with each decade of life, falls are not an inevitable part of aging.

Falls don’t “just happen.” They are the result of multiple causes, including environmental hazards and physical risk factors, many of which can be addressed and diminished. For example, studies have shown that impaired vision plays a role in falls and that as simple an intervention as improved lighting will reduce the risk of having one.

In recent years, a number of studies have made it clear that podiatrists have an important role to play in fall prevention, since foot problems—which impair balance and gait—have been identified as one of the key contributors to falls. The specific problems implicated include foot pain, a reduced range of motion in the foot and ankle, toe weakness, and toe deformity which, alone or together, have been shown to be risk factors for falling.

Whenever a patient comes to see us, especially a senior patient, we begin evaluating their risk of experiencing a fall before they even take off their shoes, monitoring their balance and gait as they approach the examination room. In the course of our regular examination we’ll evaluate toe flexor strength, which is essential in providing stability and balance during shifts of body weight. If the strength is compromised, we may prescribe physical therapy and exercises to improve it, or orthotic inserts to cushion and stabilize the foot.

The podiatrist’s treatment of bunions, hammer toes and corns is also a form of fall prevention. These foot deformities not only impair balance, they cause pain. And when you have foot pain, you start distributing the weight on your feet in a way that they weren’t designed for, resulting in instability.

Inappropriate footwear can contribute greatly to the risk of falls. Walking barefoot or just in socks alone, wearing inadequately secured shoes (such as those without any laces, straps, or buckles), overly high heels, or overly thick soles all contribute to an increase risk of falls.

The nerves in our feet help us judge the positioning of our bodies and contribute to our sense of balance. To function properly, feet need to be in touch with the ground and shoes securely fixed to the foot with each step.

We help our patients select “fall-resistant” footwear: sensible, low-heeled, non-slip shoes that fit well, support and cushion their feet while providing them good contact with the ground.

If you’ve recently fallen, or almost fallen, talk to your doctor about changes you can make and steps you can take to reduce your risk.

It’s been shown that, in people with foot pain, getting a footwear assessment, using customised insoles, practicing foot and ankle exercises, and receiving regular podiatric examinations reduces the number of falls.
Sims and Associates Podiatry recently conducted a shoe drive to benefit Vietnam Veterans of America (Local Chapter #869). More than 500 pairs of shoes were contributed and John Polasko, President of VVA Chapter #869, was instrumental in seeing that the donated footwear went directly to local veterans and their families.

We would like to thank all those who donated as well as St. Francis Hospital, Allsport Fishkill, and Gold's Gym of Fishkill for their participation.

We are proud to belong to such a compassionate and generous community.