

DIABETIC COMPLICATIONS AND AMPUTATION PREVENTION



American College of
Foot and Ankle Surgeons

People with diabetes are prone to many foot problems, often because of two complications of diabetes: nerve damage (neuropathy) and poor blood circulation.

Neuropathy causes loss of feeling in your feet, taking away your ability to feel pain and discomfort, so you may not detect an injury or irritation.

Poor circulation in your feet reduces your ability to heal, making it hard for even a tiny cut to resist infection.

When you have diabetes, you need to be aware of how foot problems can arise from disturbances in the skin, nails, nerves, bones, muscles, and blood vessels. Furthermore, in diabetes, small foot problems can turn into serious complications. You can do much to prevent amputation by taking two important steps: Follow the proactive measures discussed below—and see your foot and ankle surgeon regularly.

Diabetes-related Foot and Leg Problems

Having diabetes puts you at risk for developing a wide range of foot problems:

- **Infections and ulcers (sores) that don't heal.** Because of poor circulation in the feet, cuts or blisters can easily turn into ulcers that become infected and won't heal. This is a common—and serious—complication of diabetes and can lead to a loss of your foot, your leg, or your life. An

ulcer is a sore in the skin that may go all the way to the bone.

- **Corns and calluses.** When neuropathy is present, you can't tell if your shoes are causing pressure and producing corns or calluses. Corns and calluses must be properly treated or they can develop into ulcers.
- **Dry, cracked skin.** Poor circulation can make your skin dry. This may seem harmless, but dry skin can result in cracks that may become sores.
- **Nail disorders.** Ingrown toenails (which curve into the skin on the sides of the nail) and fungal infections can go unnoticed because of loss of feeling. If they're not professionally treated, they can lead to ulcers.
- **Hammertoes and bunions.** Motor neuropathy (nerve damage affecting muscles) can cause muscle weakness and loss of tone in the feet, resulting in hammertoes and bunions. If left untreated, these deformities can cause ulcers.
- **Brittle bones.** Neuropathy and circulation changes may lead to brittle bones (osteoporosis). This makes you susceptible to breaking a bone, even without a major blow or injury occurring.
- **Charcot foot.** This is a complex foot deformity. It develops as a result of loss of sensation and an undetected broken bone that leads

to destruction of the soft tissue of the foot. Because of neuropathy, the pain of the fracture goes unnoticed and the patient continues to walk on the broken bone, making it worse. This disabling complication is so severe that amputation may become necessary.

- **Blocked artery in the calf.** In diabetes, the blood vessels below the knee often become narrow and restrict blood flow. A severely blocked artery is a serious condition that may require intervention from a vascular surgeon. If vascular surgery fails and the wound does not heal, amputation may be necessary.

What Your Foot and Ankle Surgeon Can Do

A major goal of the foot and ankle surgeon is to prevent amputation. There are many new surgical techniques available to save feet and legs, including joint reconstruction and wound healing technologies. Getting regular foot checkups and seeking immediate help when you notice something can keep small problems from worsening. Your foot and ankle surgeon works together with other health care providers to prevent and treat complications from diabetes.

When Is Amputation Necessary?

The goals of treatment of diabetic foot problems are not only to save

the life and limb, but also to get the patient healed and moving about as soon as possible. If vascular surgery cannot improve blood flow and podiatric surgery cannot restore function, amputation may be the only solution that gets the patient walking again. Amputation may involve one or two toes, part of the foot, or part of the leg. It is selected on the basis of the patient's condition and level of predicted healing. A return to normal life is especially possible today because of advances in prosthetics.

Your Proactive Measures

You play a vital role in reducing complications. Follow these guidelines and contact your foot and ankle surgeon if you notice any problems:

- **Inspect your feet daily.** If your eyesight is poor, have someone else do it for you. Inspect for:
 - *Skin or nail problems*—Look for cuts, scrapes, redness, drainage, swelling, bad odor, rash, discoloration, loss of hair on toes, injuries, or nail changes (deformed, striped, yellowed or discolored, thickened, or not growing).
 - *Signs of fracture*—If your foot is swollen, red, hot, or has changed in size, shape, or direction, see your foot and ankle surgeon immediately.
- **Observe for changes in circulation.** Pay attention to the color of your toes. If they turn red, pink, or purplish when your legs hang down while sitting, poor circulation may be a problem.
- **Don't ignore leg pain.** Pain in the leg that occurs at night or with a little activity could mean you have a blocked artery. Seek care immediately.
- **Nail cutting.** If you have any nail problems, hard nails, or reduced feeling in your feet, your toenails should be trimmed professionally.
- **No "bathroom surgery."** Never trim calluses or corns yourself, and don't use over-the-counter medicated pads.
- **Keep floors free of sharp objects.** Make sure there are no needles, insulin syringes, or other sharp objects on the floor.
- **Don't go barefoot.** Wear shoes, indoors and outdoors.
- **Check shoes and socks.** Shake out your shoes before putting them on. Make sure your socks aren't bunched up.
- **Have your sense of feeling tested.** Your foot and ankle surgeon will perform various tests to see if you've lost any feeling. ▲



Melissa J. Lockwood, D.P.M.

Melissa J. Lockwood, D.P.M. – As founder of Heartland Foot and Ankle Associates, P.C., Dr. Melissa J. Lockwood happily returns to central Illinois after seven years in Cleveland, Ohio. She is a graduate of Providence Catholic High School in New Lenox, Illinois. Dr. Lockwood completed her undergraduate degree from the University of Illinois (Urbana/Champaign) in 2001 with a Bachelor of Science in Biology and a minor degree in Chemistry. Dr. Lockwood has a great interest in archaeology and also received a minor degree in Anthropology from the U of I in 2001.

Dr. Lockwood went on to the Ohio College of Podiatric Medicine and matriculated with her Podiatric Medical Degree in 2005. While at OCPM, Dr. Lockwood served as both a delegate to the student branch of the APMA

as well as President of the Student Government organization (OPMSA). Dr. Lockwood was the recipient of several awards while attending OCPM, including the Ohio Podiatric Medical Association Dr. James Conforti Community Relations Award and the OCPM Mildred Kaufman Memorial Award for Proficiency in Orthopedics and Biomechanics.

Dr. Lockwood arrives in Bloomington following a three year residency in Cleveland, Ohio. Dr. Lockwood completed a 36 month Podiatric Medical and Surgical Residency Program based out of the University Hospital System/Richmond Heights Medical Center. Dr. Lockwood has extensive training in both forefoot (bunions, hammertoes, neuromas) elective surgical procedures as well as rearfoot reconstruction. She has a special interest in the treatment of chronic wounds as well as diabetic palliative care. Dr. Lockwood enjoys working with patients one on one in a clinical setting and chatting about her favorite sports teams!

Dr. Lockwood and her husband Scott are pleased to be back in their home state and rooting on the Illini, Redbirds, Chicago Bears, and White Sox! Scott is a 2000 Illinois State University Alumni with a BS degree in Accountancy. He is a CPA working in Bloomington.

EDUCATION

University of Illinois, Urbana-Champaign, BS Biology (01)
Professional: Ohio College of Podiatric Medicine, (05)
Residency: University Hospital Richmond Medical Center (05-June 08)

PROFESSIONAL ACCREDITATION

NBPME Part I (03) NBPME Boards Part II & Part III - PM Lexus (05)
State of Illinois Licensure (08)

HONORS AND AWARDS

Illinois State Scholar (1997)
OCPM Academic Scholarship (01) OCPM Dean's List (04)
OPMA Dr. James Conforti Community Relations Award (05)
OCPM Mildred Kaufman Memorial Award for Proficiency in Orthopedics and Biomechanics (05)
University Hospitals Richmond Medical Center Outstanding Podiatric Resident (08)

PROFESSIONAL ORGANIZATIONS

President, Ohio Podiatric Medical Student's Association (02-04)
Delegate, American Podiatric Medical Students Association (02-04)
Chairman, President's Committee, American Podiatric Medical Student's Association Feb. 2004
Member – OCPM Board of Trustees (02-04)
APMA/IPMA, AAAPP, AAWP member at large

RESEARCH/PUBLICATIONS

Sesamoid Pathology, coauthored with
Dr. Joseph Favazzo, D.P.M., December 2005. Compilation of forefoot pathology edited by Vincent J. Hetherington, D.P.M.



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This information has been prepared by the Consumer Education Committee of the American College of Foot and Ankle Surgeons, a professional society of 5,800 foot and ankle surgeons. Members of the College are Doctors of Podiatric Medicine who have received additional training through surgical residency programs.

The mission of the College is to promote superior care of foot and ankle surgical patients through education, research and the promotion of the highest professional standards.

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