

Fancy feet follies

High heels can hurt more than your feet

By Jane Langille

FOUR YEARS AGO, Dr. Marlene Reid of Naperville, Illinois, had increasing pain in the ball of her foot. Magnetic resonance imaging showed she had ruptured a toe ligament. Ironically, she's a podiatrist, and plantar plate tear, the scarring or tearing of a toe ligament, is one of the most common issues she sees in her patients.

The culprit? High heels, which come with a host of health risks.

"The ball of the foot is actually a series of joints that correlate to each toe, and each of those joints has ligaments at the bottom. Constant pressure on the ball of the foot from the angle of a high heel pushes the natural fat padding forward, and, over time, the ligaments can tear," says Reid, a Costco member and a spokesperson for the American Podiatric Medical Association (apma.org).

Reid's foot healed with physiotherapy and ultrasound treatments, but recovery took a long time.

Hammertoes

In addition to plantar plate tear, high heels can cause hammertoes, a common condition where the toes become buckled in an upside-down V-shape, causing pain, pressure, corns and calluses.

Dr. Mark Myerson, an orthopedic surgeon, medical director and founder of the Institute for Foot and Ankle Reconstruction at Mercy Medical Center in Baltimore, says as the heel lifts up, weight is put on the front of the ball of the foot, toes get pushed back and small muscles inside the foot start to weaken. Over years, the toes no longer bend correctly and hammertoes can develop.

"It's a vicious cycle," says Myerson, a Costco member. "Think of the toes as a pulley system in balance. If muscles on one side of the toe are pulling harder than the other, you end up with

Well-heeled history

FUN FACT: Men originally wore high heels. As early as the 10th century, Persian horseback-riders used heels to help their feet stay in stirrups. The trend spread to Europe, and heels became fashionable for the upper class, including women (hence the expression "well-heeled" applying to the wealthy). By the 18th century, high heels were for women only. After the French Revolution in 1789, heels went out of style for a long time but were revived with the invention of the camera and the advent of pinups. For more on the history of high heels, listen to the popular free podcast *99% Invisible*, episode 119, "Feet of Engineering," available on iTunes or your favorite podcaster.—JL

an imbalance and deformity over time. And once you have hammertoe, there's nothing that's going to stop it from getting worse."

Surgical repair can help, but the necessity is based on symptoms, not on how feet look. Some people with significant deformities have no pain and can happily wear their choice of footwear. Surgery may involve straightening the toe and fusing it so it does not bend, or fixing it so it can still move slightly.

Orthopedic surgeons have a range of new high-tech implant devices to choose from to repair hammertoes. One of the newest implants is made of nitinol, a nickel-and-titanium alloy that expands when it is inserted into the bone and holds it in position. Patients are able to walk on the foot the next day.

Gait, knee and back issues

The trouble with high heels doesn't stop at the feet. Wearing them affects gait and strains joints, ligaments, tendons and muscles all the way up the legs to the lower back.

Walking in high heels makes it harder to straighten your knees compared with striding in flat, everyday shoes, putting more strain on kneecaps. A recent study at Stanford

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Click here to watch Dr. Todd Sinett talk about back pain. (See page 13 for details.)

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University's BioMotion Research Laboratory, published in the *Journal of Orthopaedic Research* in 2015, found that walking in 3¼-inch heels, as opposed to 1½-inch heels, puts women at risk of developing knee problems, even if they walk more slowly. The observed changes in gait were similar to those seen in osteoarthritis and aging, and were especially notable for those who wore a weighted vest equal to 20 percent extra body weight, indicating that women who are overweight have an increased risk.

Wearing high heels puts pressure on the lower back and the muscles that stabilize it. Dr. Todd Sinett, a chiropractor based in New York and author of *3 Weeks to a Better Back* (East End Press, 2015; not available at Costco), says, "When a woman is wearing heels, her weight distribution is pitched forward. The lumbar spine area then carries more weight, which puts more stress on the lower back muscles as well as hamstrings, calves and feet."

These days, Reid loves shoe shopping and continues to wear heels sometimes, favoring low 1- to 2-inch "kitten heels." She listens to her body: When her dogs bark, she switches things up. 🐾

Jane Langille is a Toronto-area health and medical writer (janelangille.com).

Five tips to reduce risk

DO YOU STILL want to rock high heels from time to time? Here are some tips from our experts to help prevent trouble.

Learn your foot type. "People with high arches will be more stable in high heels but will still benefit from shoes that have shock-absorbing material like cork under the ball of the foot to protect against back issues. Platforms and wider, chunky heels are best for those who over-pronate [feet roll inward and arches flatten]," says Dr. Marlene Reid.

Alternate your heel height. "Variety is key. Wearing different heights of heels allows your feet and tendons not to get stuck in a rut," says Dr. Todd Sinett.

Listen to your body. "Foot pain is never normal. If the shoes are not comfortable, stop wearing them. If you see a difference in your toes, such as toes rotating or contracting, or your tendons are getting tighter, see a podiatrist," says Reid.

Orthotics. "A variety of small leather orthotics are now available for women's dress shoes," says Sinett.

Shopping tip. "Get off the carpet when you try new shoes on, so you can feel what the padding of the shoe really feels like on the ball of your foot," says Reid.—*JL*



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