

Fancy feet follies

High heels can hurt more than your feet

BY JANE LANGILLE

FOR EVERY MALE patient referred to orthopaedic surgeon Dr. Roger Haene, he sees 19 women. Why such a difference? Women suffer more foot problems, including hammertoes, bunions, corns, nerve pain and plantar plate tears, because they wear high heels.

"In a high-heeled shoe, the foot is in a vertical position with all of the force shifted forward. The midfoot, which usually does a good job to dissipate force when walking barefoot, becomes locked in place. That shift concentrates the force on five little forefoot bones that have to withstand pressure equal to about four to four and a half times body weight," says Haene, a Costco member, chief of orthopaedic surgery at the Dr. Everett Chalmers Regional Hospital in Fredericton, New Brunswick, and assistant professor with Dalhousie Medicine New Brunswick and Memorial University of Newfoundland.

Foot problems

At the Achilles Foot Clinic in Calgary, co-founder, podiatrist and foot surgeon Dr. Maegen Purych also treats women with foot injuries due to wearing high heels too often. She too sees a lot of hammertoes, inflamed and damaged toe-joint capsules and plantar plate tears. Hammertoe is a common condition in which the toe buckles in an upside-down V-shape, causing pain, pressure, corns and calluses.

"A joint capsule is the grape-skin-like cov-

ering surrounding each joint. In our feet, we walk on the bottom of those capsules. Too much pressure from walking in high heels can cause joint capsule pain and inflammation, and they can rupture," says Purych.

The plantar fascia, a tough band of tissue

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that connects the toes to the heel bone, can shorten from wearing high heels, causing stabbing heel pain, inflammation known as plantar fasciitis or tears.

For their patients, both Haene and Purych examine the causes of foot pain and recommend the least invasive approaches first. Joint capsule issues and plantar plate tears can be treated with ultrasound and custom orthotics that offload body weight away from the areas that need time to heal. For bunions and hammertoes, surgery may help, but the necessity is based on symptoms, not on how feet look. Some people with significant foot deformities have no pain and can happily wear their choice of sensible shoes.

Surgery can involve shortening bones and straightening or fusing toes so they do not bend, or fixing them with implants so they can still move slightly. But foot surgery is tricky, and recovery can require using crutches for up to six weeks. There is no guarantee of restoring movement or making it possible to fit into high heels again.

Feet are highly specialized, consisting of 26 bones, 33 joints and over 100 muscles, ligaments and tendons that work best when everything is in balance. Haene says, "It's like a tug of war, and the toe is the passive victim, except instead of two teams pulling, there are seven, eight or nine teams, depending on the toe."

And for those who think that toe surgery means returning to wearing high heels, beware: "If you stiffen a toe with surgery and continue to wear high heels, the joints cannot

Five steps to reduce foot problems

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

Choose platforms.

"Platform shoes are better than regular high heels since there is a smaller height difference between the heel of your foot and your toes," says Dr. Maegen Purych.

Alternate heel heights.

"Wearing different heel heights allows your feet and

tendons not to get stuck in a rut. Besides, any justification to buy a variety of shoes is never a bad thing!" says Dr. Todd Sinett.

Massage your feet.

"I recommend massaging feet with a tennis ball. Put the ball on the ground and roll your foot around back and forth over the ball—under the arch, the heel and ball of your foot. It feels good and helps maintain flexibility," says Purych.

Use inserts and orthotics.

"Gel pad inserts that go under the ball of the foot can help disperse pressure," says Dr. Roger Haene.

Shopping tip.

"Trace the outline of your foot on a piece of paper and keep it in your purse. When shopping, put the paper on the ground and put the shoe on top. If the shoe is narrower than your foot, don't buy it," says Haene.—JL

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yield. You will end up driving your toe into the end of the shoe, causing nail pain,” says Haene.

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. In an Australian study published in the *Journal of Applied Physiology* in 2012, scientists found that women who wore high heels for at least 40 hours a week for a minimum of two years walked with shorter, stronger strides and with pointed toes compared with those who regularly wore flats—even when they walked barefoot. Purych says, “If you wear heels over an extended period, the Achilles tendon and the calf muscles contract and shorten, making it difficult to wear anything that's not at heel height. Some of my patients who have been wearing heels for 30 years say they can no longer walk barefoot comfortably.”

A study at Stanford University's BioMotion Laboratory, published in the *Journal of Orthopaedic Research* in 2014, found that walking in 8-centimetre (3¼-inch) heels, as opposed to 3.8-centimetre (1½-inch) heels,

puts women at risk of developing knee problems. The observed changes in gait were similar to those seen in women with osteoarthritis and aging, and were especially notable for those who wore a weighted vest equal to 20 per cent extra body weight.

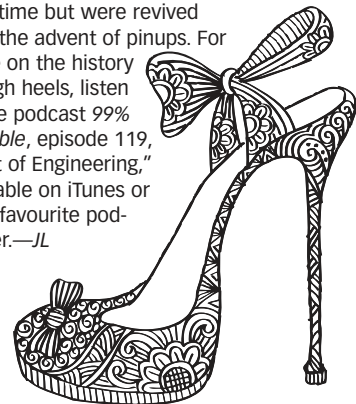
Wearing high heels also puts pressure on the lower back and the muscles that stabilize it. Dr. Todd Sinett, a chiropractor based in New York and author of *3 Weeks to a Better Back* (East End Press, 2015), says, “When a woman is wearing heels, her weight distribution is pitched forward. The lumbar spine area then carries more weight, which puts more stress on the lower back muscles as well as hamstrings, calves and feet.”

There are no health benefits associated with wearing high heels, but many women still insist on wearing them for aesthetic reasons. Purych wears them a couple of days per week, but to keep her dogs from barking, she makes sure to switch things up, wearing kitten heels one day, ballet flats the next. **C**

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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, only women wore high heels. After the French Revolution, heels went out of style for a long time but were revived with the advent of pinups. For more on the history of high heels, listen to the podcast 99% *Invisible*, episode 119, “Feet of Engineering,” available on iTunes or your favourite pod-caster.—JL



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