

[IMAGE]

Senior Health: Don't Forget the Feet

By Kristina Petrocco-Napuli, DC, MS

A number of significant health conditions begin to have a greater impact with age. Some of these are not immediately symptomatic, and often people are unaware of the deterioration until they develop a loss of functional capacity and independence.

Over time, repetitive stresses and normal forces result in a slow breakdown of support for the bones and joints of the feet. Connective tissues (collagen and proteoglycans) are exposed to these long-term lengthening forces, resulting in a decrease in elasticity and a sagging of the foot's arch. Conditions such as loss of balance, diabetes, osteoarthritis and osteoporosis are associated with these degenerative changes in the feet and kinetic chain. They can all be helped with comprehensive chiropractic care that includes attention to an area of the body you might not think should be considered – the feet.

Balance Issues

Each year, between one-third and one-half of people 65 or older experience a fall,¹ 6 percent of which result in fractures. Falling is also the leading cause of accidental death within the same age group.²⁻³

Chiropractic adjustments of the spine improve proprioceptive input by normalizing joint alignment and muscle tonus. Custom-made functional orthotics work with these adjustments to maximize the support provided by the feet, creating a more stable foundation and addressing structural deficiencies, such as excessive pronation and arch integrity.

senior health - Copyright © Stock Photo / Register Mark In a younger group, Stude and Brink found that "[s]ix weeks of wearing ... custom-made, flexible orthotics has a positive influence in promoting balance and proprioceptive symmetry."⁴ Custom-fitted inserts are particularly important for the elderly, who have been found to frequently wear improperly-fitted shoes.⁵

Diabetes

Diabetes continues to increase rapidly across all demographic groups. The effects of diabetes interfere with spinal and lower extremity health, and can significantly increase physical disability. Diabetic patients often develop circulatory problems in the extremities – most commonly in the feet.⁶⁻⁷ As the diabetic process continues, neuropathy can lead to sensory difficulties, which often allows shoe and foot problems to go undetected.⁸⁻⁹

Proper shoe selection can be critical in avoiding excessive frictional stresses to sensitive foot tissues.¹⁰ In the initial stages of the condition, a custom-made, functional orthotic with shock-absorbing material that supports normal foot biomechanics is useful. In the final stages of diabetic foot problems, a purely accommodative orthotic is all that can be tolerated. Obviously, it is much better to intervene early in this process and to prevent (or at least slow down) the development of this late stage.

Osteoarthritis

Osteoarthritis occurs at a rate of about 4 percent at age 20 and climbs to 85 percent by age 70.¹¹ It is a noninflammatory degenerative joint disease characterized by degeneration of the articular cartilage, hypertrophy of bone at the margins, and changes in the synovial membrane.¹² Noticeable symptoms of the disease result from an ongoing process of wear and tear over a lifetime, and are not an inevitable consequence of aging.¹³

Because the knee and hip are primary areas involved with osteoarthritis, it is appropriate to look at ways to decrease the amount of stress on those joints in day-to-day activities. Studies have shown that custom-made, functional orthotics will give support to a pronated foot, allowing it to provide better shock absorption, put less stress on the knee joint¹⁴⁻¹⁶ and improve the Q angle of the hip, which will put less stress on the hip.¹⁷

Osteoporosis

As the population ages and becomes more sedentary, more people are affected by osteoporosis and its complications. With osteoporosis, bone strength is compromised and fractures develop with trivial (or no) trauma.

Bone density and strength are a function of the magnitude and direction of the mechanical stresses that act on bone.¹⁸ Assuming the availability of necessary nutrients, stimulus to the osteoblasts results in a net gain in bone mass. Exercise facilitates osteoblastic activity, thereby helping to maintain a positive balance between bone formation and bone resorption.¹⁹

To create sufficient stimulus to increase bone density, exercise needs to be weight-bearing and have some impact. All exercises are more effective when done in an upright position, since the entire body is in a closed-chain position during training. These types of exercises are very valuable for the elderly – not just for increasing bone density, but also for preventing stumbles and falls.

Exercise tubing is an excellent tool for strength training of the elderly, since the risks of injury are minimized, and a spotter or expensive equipment aren't needed. And custom-made functional orthotics can provide a stable foundation for weight-bearing exercises.

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