

# Foot maintenance:

## HEALTHY FEET PROVIDE A STRONG FOUNDATION FOR OUR MOBILITY



GUEST CORNER  
LIZE LUBBE

Our feet are the ground foundation of our bodies. We use our feet from the moment we are in the upright position: when we start walking as infants, run as toddlers, active as athletes in sport, and walk and run for fitness and health as we age. We rely on our feet, yet when it comes to self-care, our feet often get the least attention until we experience foot pain, injury, or dysfunction.

### UNDERSTANDING THE COMPLEX STRUCTURE OF OUR FEET AND OUR WALKING ACTION

Our feet are of the most complex parts of our body. Each foot consists of 26 bones, 33 joints, more than 100 ligaments, muscles, and tendons. In addition, a foot has about 7,000 nerve endings which connect it to our brain to stabilize, balance and assist in our body proprioception (to know where our bodies are in space).

A normal walking or gait pattern consists of two phases: the stance phase (close contact chain) and the swing phase (open chain).

- The stance phase starts with the heel strike, full weight bearing on the midfoot and the push off through the front foot and occupies 60% of the gait cycle.

- The swing phase is the push off, foot clearance in the air and swing through before heel-strike for a continuous alternating close contact and open-chain gait cycle.

### PRESSURE ON OUR FEET BIOMECHANICS

As the rest of our bodies change when we age, so do our feet. Several factors affect our feet biomechanics (how the foot moves), such as weight gain, overuse as an athlete, wearing wrong footwear, being less active and getting weaker, any injury that causes a limp when we walk (antalgic gait). Changes in our feet biomechanics put extra stress on our ankle and foot ligaments, muscles, and joints. These result in pain and limitations in normal movement and compromise our balance.

### MOBILITY CHALLENGES DUE TO FEET PROBLEMS

Our feet can be divided in three sections, each part with their own actions and problems:

- The heel or hind foot
- The midfoot or foot arch
- The forefoot

For a normal gait, the heel must contact the ground first. The heel attaches the lower leg calf muscle to the ankle and foot.

Common problems causing pain to the

- 1. Heel:**
  - Achilles Tendinitis - overuse of the calf muscle that connects to the heel causing an inflammation of the tendon
  - Heel spurs - bony outgrowth that causes severe pain with weightbearing and can lead to plantar fasciitis
  - Ankle fractures - sports related or from a fall
  - Arthritis - common disease that cause swelling, stiffness, and pain

- 2. Foot arch:**
  - Plantar fasciitis - tightened and inflamed foot arch muscles from the heel into the arch of the foot
  - Stress fractures - tiny breaks in the small bones in the midfoot from repetitive movements

- Flat feet (pronated feet) - fallen foot arches affecting wrong alignment of feet

- 3. Forefoot:**
  - Metatarsalgia - inflammation and pain in the bones, ligaments, and tendons in the ball of the foot

- Bunion - bony outgrowth at the base of the big toe causing the big toe to move towards the second toe, can result in hammer toes (second toe, third toe crawling over each other)

- Neuroma - benign growth and thickening pressing on a nerve

### PREVENTING AND TREATING FOOT PAIN AND PROBLEMS

Our feet work as an extension of our bodies, especially from the hips and legs. When foot problems arise, the whole leg should be addressed to get the foot in a balanced, supportive position again.

As a start, ensure you wear proper footwear and do basic exercises to improve the strength of your feet and leg muscles, attain more flexibility and get up to move with good balance and proprioception.

**Toe/feet/leg exercises: Repeat both feet about one minute each.**

- Scrunch up a towel with your toes. Swoop the towel to the inside and to the outside, keeping your heel on the ground

working the forefoot

- Pick up scrunched-up pieces of paper with your toes. Turn your leg to your opposite knee and put the paper in your opposite hand. -Start sitting on a chair and progress to standing and balance on one leg

- Trace the alphabet with your foot, making large letters. As you improve, add the whole leg for strengthening and balance, standing only on one leg tracing the alphabet from the hip to the knee to the ankle

- Seated - progress to standing. Raise up on your toes then back on your heels. Rock back-and-forth and when you are standing. Squeeze your butt and thigh muscles to add strengthening.

- Roll a tennis/golf ball under your foot, apply gentle pressure through the whole

surface of your foot

A gait dysfunction can change your normal gait pattern and affect your safety and daily activities. It requires more energy and causes stress on other body parts and needs more specialized attention.

Please contact your health care provider of physical therapist for more detailed gait analysis, specialized treatment, and individualized exercises.

*Lize Lubbe is the owner of Lize Lubbe Physical Therapy with its main practice located at 892 Route 35 in Cross River and a PT Studio in the premises of Apex Fitness (where her team focus on the rehabilitation of sports-related injuries). Learn more by calling 914-875-9430, emailing [contact@lizeclubbept.com](mailto:contact@lizeclubbept.com) or visiting [www.lizeclubbept.com](http://www.lizeclubbept.com).*



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