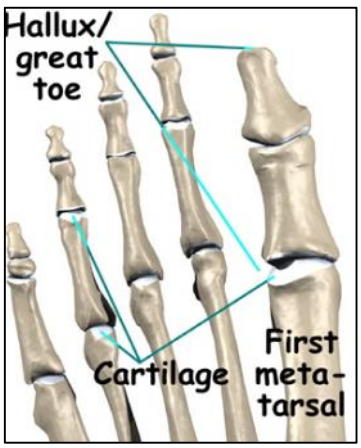
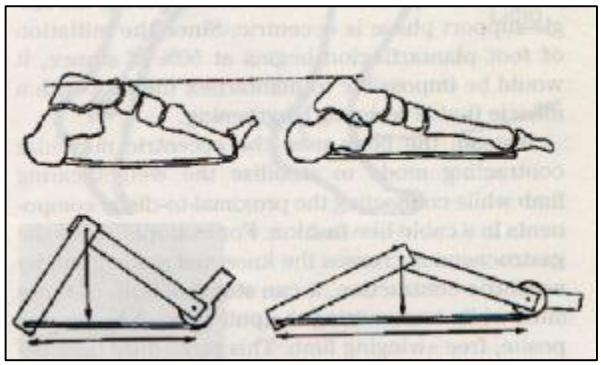
Hallux Limitus/Rigidus: The Big Toe Rules Proper Foot Mechanics



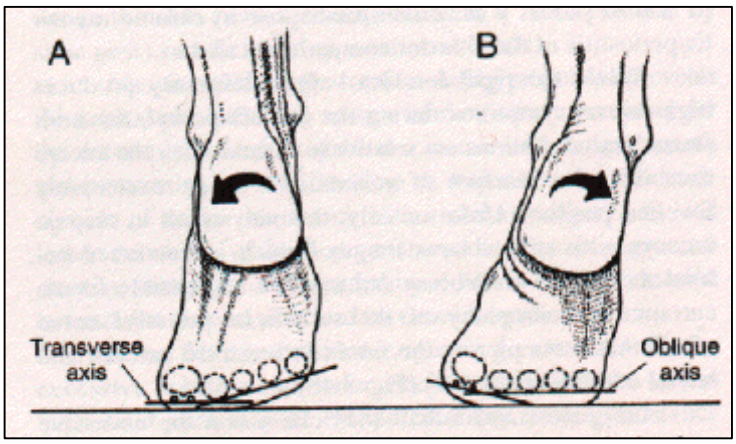
Your big toe, AKA great toe or "Hallux", is an incredibly important structure to proper lower extremity function. Not many people give their big toe much though t unless, it's "too long", "too hairy", "ugly", or, and more seriously, you have injured it. One of the injuries common to this area for athletes, is a condition known as hallux limitus.

Hallux limitus is described as a limitation in the range of motion of the big toe. These motions are plantar flexion or pointing your big toe toward the floor, and dorsiflexion, or pointing your big toes upwards. Hallux limitus can be extremely painful or can present itself with no pain whatsoever. Even if you have no pain, the condition is something to be concerned about, as stated, the big toe is extremely important to proper foot/ankle/knee/hip and even low back biomechanics. Hallux limitus, whether there is pain or not will create compensation in other areas of your body.

Hallux limitus can result from a variety of circumstances. With athletes, trauma is definitely the most common cause. The degree of trauma can vary from minor repetitive stress to severe trauma. Over pronation is a common cause of repetitive stress that isn't felt or even noticed until it's too late. Improper body mechanics and dysfunctional movement patterns can lead to compensations which may cause over-pronation of the foot during gait. Wearing a shoe that is too short or constrictive can also result in hallux limitus and this is a common reason runners develop the condition. I myself have the early stages of this condition due to trauma during my submission wrestling/mixed martial arts classes. Generally, if the big toe is forced to extend further than it is able to (hyperextension), hallux rigidus can occur. If this is a minor

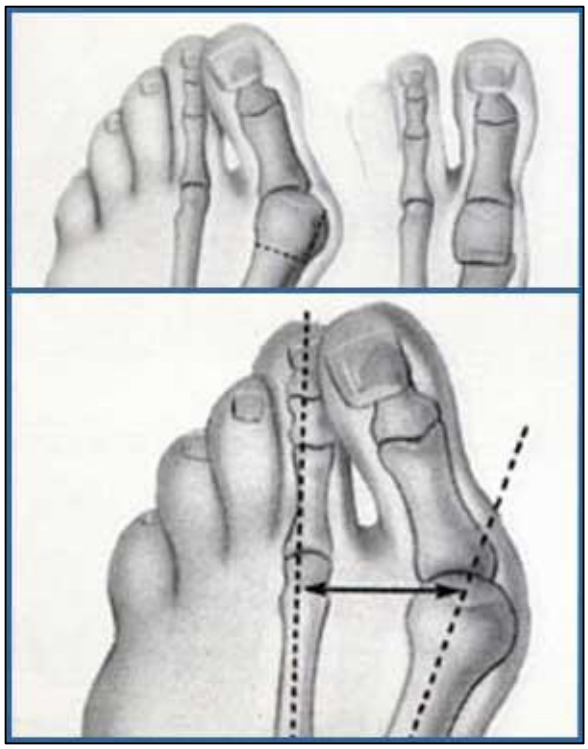


hyperextension, you may even realize there is a problem….until the condition sets-in. Under normal conditions, with each step, your foot must expand to absorb and distribute with the loading of your bodyweight. Your arch or more specifically, your longitudinal arch takes the brunt of these forces. Your foot and arch then lengthens at which time, your big toes has to extend to tighten-up the tendons and ligaments and plantar fascia of your foot to both support these forces and utilize potential energy so you have a little "spring in your step"….literally. This is often referred to as the "windlass" effect.



When working correctly, your foot should roll onto your big toe after the "windlass" effect and you should push off of this very rigid yet "springy" "strut". If you have Hallux limitus, this does not occur, the big toe does not extend enough and you will end up pushing off of your 2nd or third toe while walking, running, jumping etc. This is not only an inefficient way to go about moving around in life, it can cause you to compensate in your ankle, knee, hip and even low back to keep things moving smoothly. Over time, this may result in injuries to these structures and, through a series of complex compensatory patterns, transfer the forces into your upper back, neck, and jaw leading to a myriad of problems.

One such problem is the problem that is still within the foot structure is the development of a bunion or Hallux valgus. As the foot/leg complex tries desperately to roll off of the big toes (which won't let this happen because it can't extend correctly), the rest of your foot will roll in putting forces on the big joint of the big toes which causes it to be pushed to the outside (laterally). Over time, the joint (as seen in the picture to the right) will become deformed and your big toes will angle awkwardly towards your other toes. I will eventually write another article about hallux valgus because it too can cause a myriad of problems.



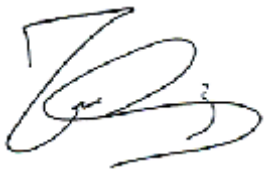
No matter what the cause of hallux limitus is, repetitive hyperextension and/or compression to the joints of your big toe will eventually cause inflammation resulting in early breakdown of the cartilage protecting the ends of the two bones. Without treatment the degenerative process will continue, forming cartilaginous spurs. With progression these cartilage structures can calcify into bony spurs. The end-stage of this disorder is a condition known as hallux rigidus, where the joint literally fuse and no motion is left within it. Even with this as a possibility, much of the dysfunction that results from hallux limitus is not due to the injury to the joints of the big toe, but the compensation that takes place elsewhere in the body.

Hallux limitus is easily detected by a well-trained doctor and can usually be treated conservatively with self- mobilization, pronation controlled shoes, possibly orthotics, manipulation, the Graston Technique, and Kinesiotape. The first noticeable change with hallux limitus is loss

of ability to dorsiflex (or extend) your big toe. Normal range is approximately 65. If you notice limitations or pain in the big toe joint with dorsiflexion; or if you notice your shoes are wearing unevenly or you have asymmetrical calluses on your feet, it may be time to come in for an Optimal Movement Screen. "An ounce of prevention is worth a pound of cure" with respects to hallux limitus because hallux rigidus does not respond as well to conservative care and the surgery for that condition is painful and it does not have a 100% success rate.

To find out more about my Optimal Movement Screen, go to www.OptMovement.com, email info@OptFunction.com, or call 503-866-9739.

Yours in Health,



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