Winnipeg Prosthetics & Orthotics
Taking Care of Manitobans Since 1986

CONSERVATIVE MANAGEMENT OF MORTON'S NEUROMA

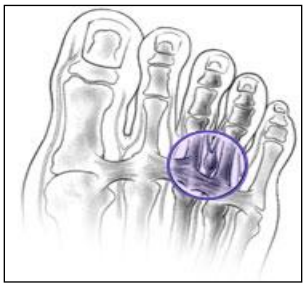
A Biomechanical Approach

Often blamed on poor footwear

Likely caused by inappropriate pronation and depressed metatarsal arches

Clinical competency coupled with orthotic design have greater efficacy

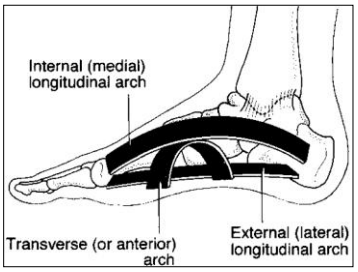
Morton's neuroma, a benign neuroma of an **intermetatarsal plantar nerve,** is one of the less common foot ailments. Nonetheless, it can result in great frustration, both for the physician seeking conservative solutions and for the client looking for relief. One of the recommended treatments is custom foot orthotics, which will have various success rates depending on the type of orthotic dispensed and the knowledge of the dispensing clinician. Without a thorough understanding of the relationship between the arches of the foot and their contribution to overall foot health, successful management of Morton's neuroma may be compromised.



Morton's Neuroma is most often blamed on poor footwear selection. However, a significant number of clients have no history of wearing inappropriate footwear. It may be time, therefore, to consider **biomechanical influences** as the likely cause of Morton's neuroma.

The **Medial Longitudinal Arch,** the **Lateral Longitudinal Arch** and the **Transverse, or Metatarsal, Arch** all work interdependently to form a plantar "vault." This architectural design optimizes strength yet permits sufficient flexibility to accommodate changes in terrain.

When the Medial Longitudinal arch becomes too elongated or stays elongated for too long (**excess or prolonged pronation**), the forefoot abducts and becomes unstable. Abduction causes the forefoot to stray laterally into the side of the shoe, giving the impression that the shoe width is no longer appropriate. Overpronation also "unlocks" the first metatarsal ray. It becomes hypermobile during push-off, allowing it to move upward when ground forces are applied and thus transferring some of the push-off force to the lesser rays. This excess workload on the lesser rays results in increased compression of the interdigital spaces.



The integrity of the **Metatarsal Arch** is important for the alignment of the metatarsal heads relative to each other. A laxity in the ligament structure maintaining this arch could result in plantar flexed rays and/or a widening of the ball of the foot as the metatarsal rays splay outward. This again gives the impression that the footwear is causing compression across the toe box.

Success in prescribing custom foot orthotics can be optimized by ensuring your orthotic provider fully understands the biomechanics of the feet and is able to provide a product that can effectively control overpronation while integrating sufficient metatarsal support to lift and separate the joint space irritating the neuroma.