

## Perpetuating Factors in Musculoskeletal Disease and Chronic Pain

Perpetuating factors are underlying problems that hinder the patient's recovery from the condition being treated. Nutrition, work habits, and muscular stresses and strains frequently undermine the healing process. Investigating, understanding, and removing perpetuating factors is a key to successful long term results.

Posture is a major perpetuating factor in patients suffering from musculoskeletal disease and chronic pain. Because posture is typically thought of as an awareness issue, constantly requiring the patient's attention and correction, it is often not addressed. Posture Control Insoles™ correct posture automatically and continuously.

### Dr. Dudley J. Morton - Dr. Brian A. Rothbart

70 years ago Dr. Morton discovered that many people had a short first metatarsal bone - Morton's Foot Structure.

A decade ago, Dr. Rothbart demonstrated that hyperpronation was connected to an ontogenic retardation of talar torsion. The first metatarsal bone is not only short as discovered by Morton, but in over 80% of the population the first ray is elevated and rotated - Rothbart's Foot Structure.

This common (normal) foot structure is the cause of hyperpronation. Hyperpronation affects the entire body through the kinetic chain. Collapsing ankles cause internal rotation of the lower extremities and anterior rotation of the pelvis. This causes an anterior shift of the body's center of gravity and a corresponding head forward posture. This posture alters breathing patterns, sets off muscular trigger points, misaligns the spine and compromises nerve function.

Morton's foot is typically an indicator for Rothbart's foot structure and represents a musculoskeletal risk factor that is minimized by wearing Posture Control Insoles™.

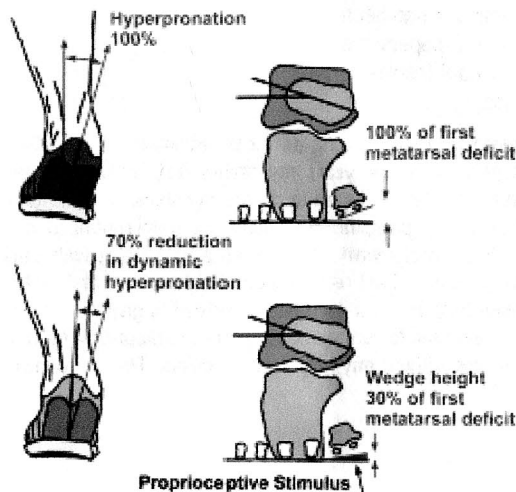
### Do this quick test to Discover Rothbart's Foot Structure

Have the patient stand, no shoes with feet parallel, 8-10 inches apart, and equal weight on both feet. While the patient rolls the foot side to side, palpate the subtalar joint to place the foot in subtalar neutral (heel perpendicular to the ground). If your patient has Rothbart's foot structure, the 2nd through 5th metatarsal heads are on the ground while the first metatarsal head and big toe are elevated. The amount of elevation is the **First Metatarsal Deficit**.

Release the foot to it's natural stance. As the first metatarsal head and the big toe seek the ground, the medial column of the foot collapses and the heel everts. Observe further collapse of the medial column as the patient bends the knees without lifting the heels off the ground. Typically the patient's knees will travel to the inside of the feet rather than remaining over the feet. A segment of the population subconsciously brace their muscles to overcorrect for hyperpronation (supination). This bracing pattern can be released by the use of Posture Control Insoles™.

Recognize Rothbart's foot structure by an elevated first metatarsal and big toe.

## The Power of Proprioception

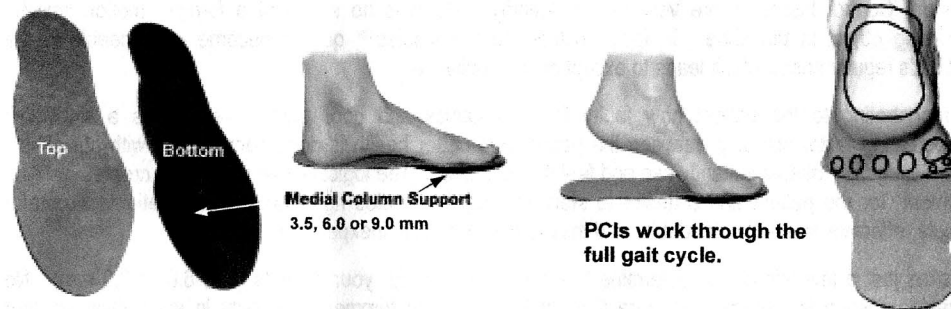


Proprioception is the sense of position, movement and force. Proprioceptive training is often used in rehabilitation. Dr. Rothbart was an innovator in applying a specific proprioceptive input to the foot on a continuous basis to improve body mechanics and posture.

Through his research, Dr. Rothbart discovered that dynamic hyperpronation was reduced by on average 70% by inserting a wedge (Medial Column Technology™) underneath the first metatarsal and big toe measuring approximately 30% of the First Metatarsal Deficit.

With every step the foot receives a stimulus. The power of proprioception personalizes the correction. The correct amount of stimulus quickly becomes unnoticeable to the patient.

### Posture Control Insoles™ - The Simple Solution



### Posture Control Insoles™ - Better for Foot Problems too

For decades, foot problems have been addressed by prescribing orthotics. While traditional orthotics immobilize the foot, Posture Control Insoles™ offer the advantage of maintaining full foot mobility which strengthens the feet. Most common problems associated with hyperpronation and unstable feet such as foot, heel (plantar faciitis), ankle and knee pain and shin splints are resolved quickly.



Would you suggest a neck brace if the patient needed to strengthen the neck muscles?

Posture Control Insoles™ build stronger healthier feet, more linear body mechanics and a healthier upright posture.

For the 10-15% of the population that has flexible flat feet, adding Posture Control Arches will enhance the effectiveness of the technology. Heel lifts, may also be added for leg length discrepancies.