NOLARO 24™ LLC
CONTINUING EDUCATION

The Science Behind Forefoot Varus: The E & F Foot Types

1 Hour Webinar – 1.5 Contact Hours

Course Description:

This webinar reviews the intricate effect on gait that occurs when an ***Uncompensated (supinated) Rearfoot Varus***, is coupled with a ***Rigid Forefoot Varus***. This is compared to what happens when someone has a **Compensated (pronated) Rearfoot Varus** along with a **Forefoot Varus** or **Forefoot Supinatus**. The golden rule that, "When a foot can pronate it will", is examined and the different compensation methods between these foot types are discussed in detail. A rigid foot that is unable to compensate in a static standing position functions differently to how a compensated rearfoot functions thus affecting gait. This webinar will explain the functional compensations that occur dynamically during contact, midstance and propulsive phases of gait; and the resultant pathologies that can occur. The instructor compares and contrasts the differences between a flexible forefoot supinatus, and a 'true' (typically congenital) rigid forefoot varus. The instructor will explain why foot orthoses for these foot types will require extrinsic medial forefoot posting, as well as other specific orthotic design features necessary to control gait and balance the body. Athletic footwear recommendations are also discussed.

Participants will be required to complete and submit a post webinar quiz and course evaluation for CEU eligibility.

1 Hour Program

Learning Objectives/Outcomes:

1. Participants will learn the different between how calcaneal alignments can lead to different compensations in the forefoot and the midtarsal joint.
2. Participants will learn about the functional differences between an acquired flexible forefoot supinatus and a rigid forefoot varus.
3. Participants will learn about the components of the E Quad foot: Uncompensated rearfoot varus combined with a rigid forefoot varus.
4. Participants will learn about the components of the F Quad foot: Compensated rearfoot varus combined with a flexible forefoot varus/supinatus.
5. Participants will learn that about the pathologies of these two foot-types with different

types of forefoot varus and how these are the result of different compensation methods and gait.
6. Participants will be able to understand the required components of a functional orthotic designed to address these foot-types and what athletic shoe features are most desired.

References:

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3. Braga UM, et all. Effects of medially wedged insoles on the biomechanics of the lower limbs of runners with excessive foot pronation and foot varus alignment. Gait Posture. 2019 Oct;74:242-249
4. Chuter V. Relationships between foot type and dynamic rearfoot frontal plane motion. *J Foot and Ankle Research.* 2010; 3:9.
5. DeCaro L, Nole R. Attaining Successful Orthotic Outcomes through Functional Foot Typing. *Current Pedorthics 2015; 47:1.*
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7. Johanson, M.A., Greenfeld, L., Hung, C., Walters, R., Watson, C. The relationship between forefoot and rearfoot static alignment in pain-free individuals with above-average forefoot varus angles. Foot Ankle Spec. 2010; 3:112–116.
8. Hsi WL. Analysis of medial deviation of center of pressure after initial heel contact in forefoot varus. J Formos Med Assoc. 2016 Mar; 115(3):203-9
9. Lufler RS et al. The Association of Forefoot Varus Deformity with Patellofemoral Cartilage Damage in Older Adult Cadavers. Anat Rec (Hoboken). 2017 Jun;300(6):1032-1038.
10. Lufler RS, Hoagland TM, Niu J, Gross KD. Anatomical origin of forefoot varus malalignment. J Am Podiatry Med Assoc. 2012 Sep-Oct; 102(5):390-5.
11. Monaghan, G.M., Lewis, C.L., Hsu, W.H., Saltzman, E., Hamill, J., Holt, K.G. Forefoot angle determines duration and amplitude of pronation during walking. Gait Posture. 2013;38:8–13.