

NOLARO²⁴™
LLC
CONTINUING EDUCATION
Advanced Gait Analysis and Orthotic Design
1 Hour Webinar – 1.5 Contact Hours

Course Description:

This webinar goes over detailed frame by frame video gait analysis on various foot types and covers recommended orthotic designs for each of those foot types including common foot pathologies and treatment goals. The instructor will review the intricate effect on gait that occurs when an ***Uncompensated (supinated) Rearfoot Varus***, is coupled with either a ***Rigid Forefoot Varus, a Neutral Forefoot or a Forefoot Valgus***. Plus a similar review is done when a ***Compensated (pronated) Rearfoot***, is coupled with either a ***Forefoot Varus/Supinatus, a Neutral Forefoot or a Forefoot Valgus***.

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 as a consequence. It will compare and contrast the differences between a flexible forefoot supinatus, and a true (typically congenital) rigid forefoot varus. Plus what happens when there is a forefoot valgus. The instructor will explain why foot orthotics for some foot types will require extrinsic forefoot posting, as well as other specific orthotic design features necessary to control gait and balance the body at each segment of the gait cycle. The 3 'W' method of orthotic design is also explained. Plus some specific case studies are reviewed and common orthotic 'failures' are 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 impact of an inverted calcaneal alignment (calcaneovarus) on the state of the forefoot and the midtarsal joint where subtalar joint pronation is limited or restricted.
2. Participants will learn the impact of an everted or vertical calcaneal alignment and common compensation methods including subtalar joint pronation.
3. Participants will learn about the functional differences between an acquired flexible forefoot supinatus and a rigid forefoot varus.

4. Participants will learn about the components of different foot types: Uncompensated or compensated rearfoot varus combined with either a forefoot varus, forefoot valgus or neutral forefoot.
5. Participants will gain a better understanding of how foot morphology dictates gait and therefore leads to a particular set of symptoms or pathology.
6. Participants will be able to understand the required components of an effective functional orthotic designed to address various foot types from a cavus foot through to a severe pes planovalgus foot and what athletic shoe features are most desirable for each foot type.

References:

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5. Silva RS, Veronese LM, et al. The influence of forefoot varus on eccentric hip torque in adolescents. *Manual Therapy.* 2013; 18(6): 487-491.
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7. 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.
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. Scattone Silva R, Maciel CD, Serrao FV. The effects of forefoot varus on hip and knee kinematics during single-leg squat. *Manual Therapy* 2015 Feb; 20(1):79-83
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11. Herrin K & Geil, M. A comparison of orthoses in the treatment of idiopathic toe walking: A randomized controlled trial. *Prosthet Orthot Int.* 2016 Apr;40(2):262-9