

Full Assessment of the Foot and its Function

Session 4

Orthomechanical Assessment

Step Force Training

Presented By Paul Graham

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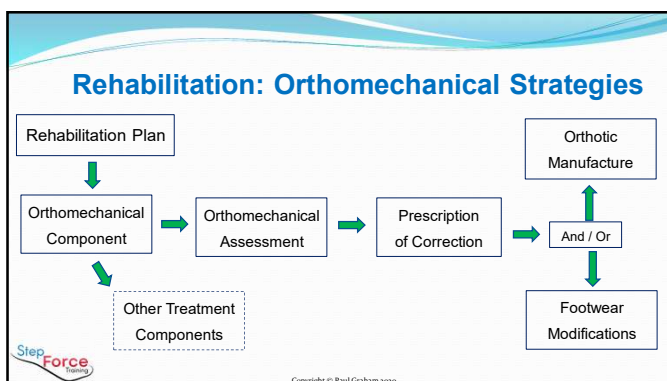
All about perspective



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Components of Orthomechanical Assessment

- Non-Weight bearing Assessment
- Scanning
- Weight bearing assessment
- Plantar Pressure & Gait analysis



Orthotic
and / or
Shoe mods
Prescription



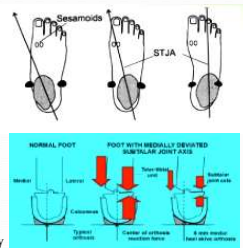
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Forces, function and Orthomechanics

Key Concepts:

1. Function is influenced by force
2. Orthotics work by modifying:
 - a. loading of the tissues
 - b. The timing of that force

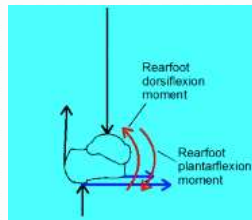
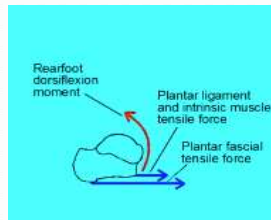


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Forces, function and Orthomechanics



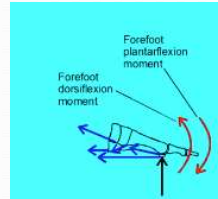
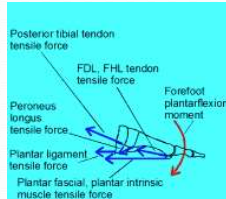
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Forces, function and Orthomechanics

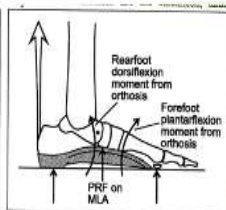
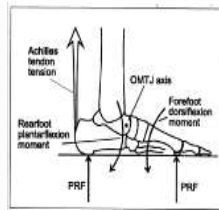


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Forces, function and Orthomechanics



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Orthotic design

Consider, what is:

1. The patient's main concern?
2. Your diagnosis and treatment strategy?
3. The aim of the orthotics?
4. The orthotic material will be best?
5. The correction orthotic type required for each foot?
6. The footwear in which the orthotics will be worn?
7. The required extra prescription options?



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What Type of Orthotics should you use?

- Premade Orthotics
- Total Contact Orthotics
 - With / without Shoe Modifications
- Orthotics that correct CoP



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Premade Orthotics

- Premade or Customised
- Redistribute Force
- Improve Proprioception
- Limit joints functioning at end ROM
- Assist rehabilitation of muscle imbalance

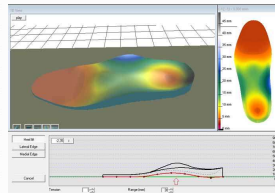


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Total Contact Orthotics

- Diabetes
- Significant Osteoarthritis conditions
- Localise Neural hypersensitivity
- Difficult and Inflammatory conditions



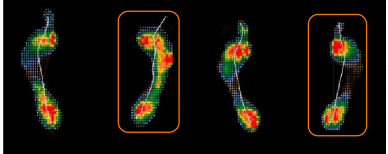
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Orthotics that correct CoP

Main Correction Designs

- Midfoot
- Kirby Skive addition to midfoot design
- Blake Inverted or Rearfoot correction design



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Non Weight bearing Assessment Tests:

1. First Metatarsal Alignment Correction Level
2. FHL Limit Point marked
3. Forefoot Supinatus Correction Level
4. Subtalar Joint Axis marked
5. Heel Bisection and Arch Height point marked

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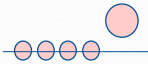
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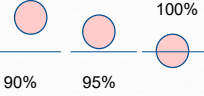

Non Weight bearing Assessment

1. First Metatarsal Alignment Correction

Current Alignment



Possible Correction

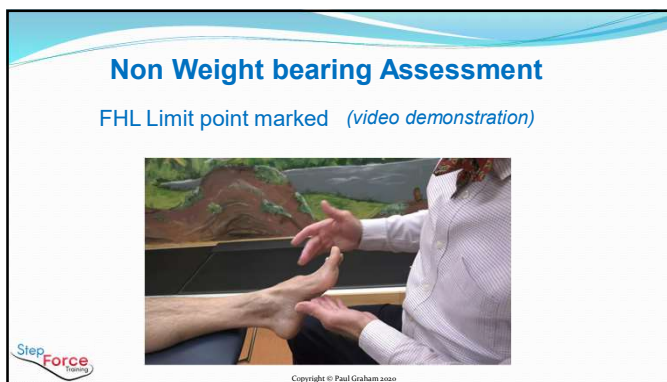
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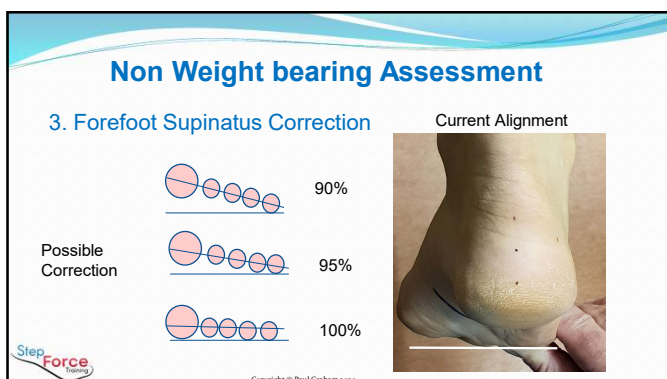
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Non Weight bearing Assessment

4. Subtalar Joint Axis marked



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Non Weight bearing Assessment

Subtalar Joint Axis marked (video demonstration)



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Non Weight bearing Assessment

5. Arch Height point marked



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Non Weight bearing Assessment

6. Heel Bisection



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2D and 3D Scanning: What's Gold Standard?



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2D and 3D Scanning and recording



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2D and 3D Scanning and recording

(video demonstration)



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Weight bearing Assessment Tests:

1. Maximum Foot Pronation and Supination movement
2. Resupination Resistance
3. Jacks Test
 - Effort
 - Timing
4. Corrected Calcaneal Position
5. Arch Height (from the ground and measured in Corrected Calcaneal Position)

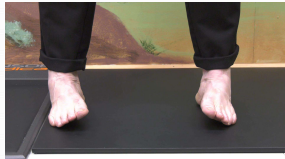
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Weight bearing Assessment

1. Maximum Foot Pronation and Supination movement



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Weight bearing Assessment

Maximum Foot Pronation and Supination movement
(video demonstration)



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Weight bearing Assessment

2. Resupination Resistance



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Weight bearing Assessment

3. Jacks Test

- Assess Frontal plane function: Effort
- Assess Sagittal plane function: Timing



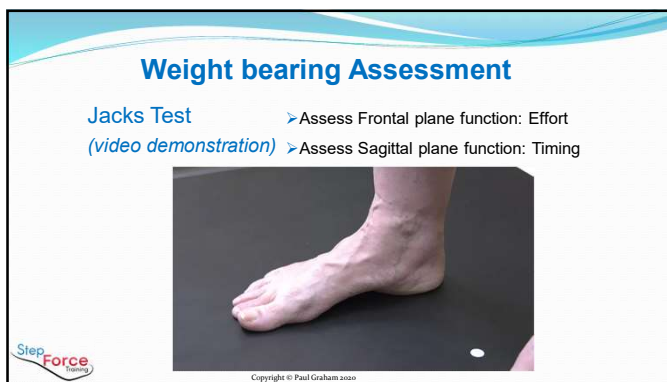
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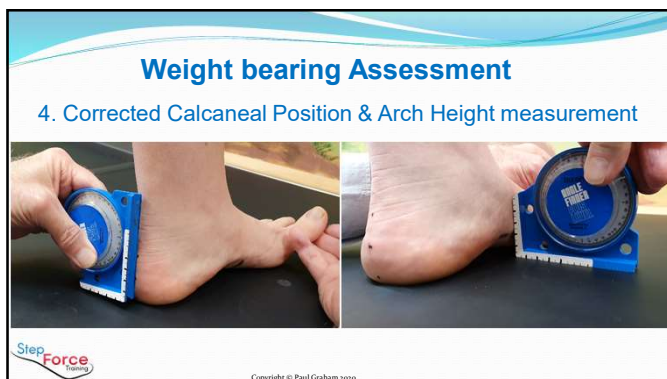
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Weight bearing Assessment

Corrected Calcaneal Position & Arch Height measurement
(video demonstration)



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Plantar Pressure Acquisition Tests:


1. Dynamic / with video
2. Static
3. Treadmill / with video
4. Balance Assessment
5. In-Shoe Specialist

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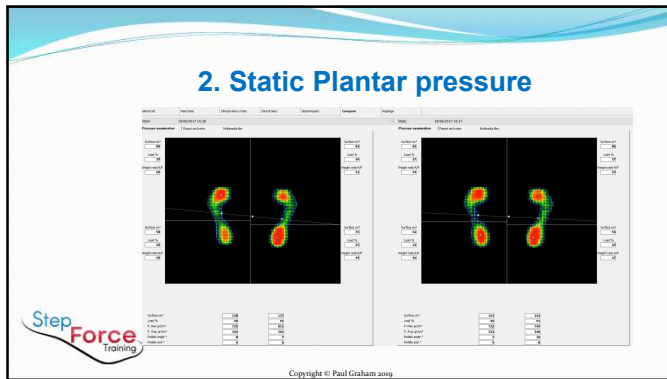
1. Dynamic Plantar pressure with Video



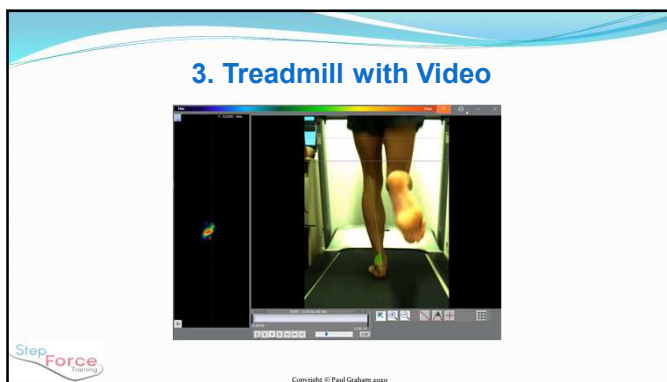
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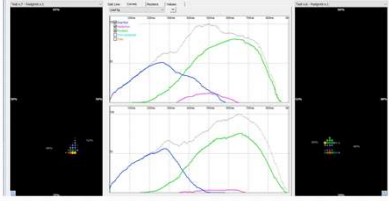


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5. In-Shoe Specialist Assessment



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Questions?



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