All About The Ankle Dr Emily Splichal, DPM, MS NABOSO®

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Doyou want this PowerPoint?





Stability, Mobility and Power

Our goal is to understand the role of the ankle during dynamic movement and how any instability, lack off mobility or insufficient strength can disrupt optimal movement

The Ankle

Sensory Stability

Neurosensory Control of the Ankle

Proprioception vs. Mechanoception





Proprioception

Muscle Spindles & Golgi Tendon Organs

Joint Position Sense

Join Centration

Kinesthetic Awareness

Peroneal Reaction Time

Mechanoception

SAI - Merkel Disc (two point discrimination)

SAII - Ruffini Endings (skin stretch)

FAI - Meisner Corpuscles (low freq vibration)

FAII - Pacinian Corpuscles (high freq vibration)

ABOSO®M

Interesting foot facts

Most ankle rehab and stability training is proprioceptive

Remember ankle stability is also mechanoceptive!

Kinesis Board Series

-05050

- Set Your Base
- Micro Wobble System
- Sensory Stick Stack
- Balance Basics

The Ankle

Joint Mobility



What are the coupled ankle joint movements?



Dorsiflexion + Abduction

Plantarflexion + Adduction



Optimal ankle movement is sagittal. If you see excessive transverse motion — it is a compensation!

How many degrees of ankle joint dorsiflexion is needed for walking?



What's the best way to assess ankle DF for gait?



Closed chain assessment

Common causes of limited ankle ROM

Soft Tissue

Tight soleus Tight gastrocnemius Hypertonicity posterior complex Structurally short Achilles tendon Osseous Anterior impingement osteophytes

Anteriorly shifted talus



Posterior Talar Mobilization

Make sure the foot is in *neutral* Make sure the foot is place *higher* than the angle of pull Make sure the band is placed *under* the malleoli Make sure the angle of pull is *down and lateral* Translation of the tibia is *only 45 degrees* and STJ is kept in *neutral* Repeat *every single day before training* if needed – this is not a permanent fix

Ankle Mobility Series

-0505103

- Neuro Ball Foot Releasee
- Neuro Ball Soleus Release
- Plantar Fascia Board Release
- Slant block Squat

The Ankle

Propulsive Power

For ambulation we need approximately *50 degrees plantarflexion* to optimally release energy and transition into the push-off phase of gait.



Remember the joint coupling that occurs with ankle plantarflexion!

External Rotation into the Hips!

What determines ankle plantarflexion ROM?

Anterior ankle ligaments Anterior fascia and tendons Talar position





How to get 100° plantar flexion

Step 1 – Make sure your talus is centered

Step 2 – Myofascially release the anterior lower leg muscles to increase fascial hydration.

Step 3 – Gently stretch the anterior ankle and mid foot ligaments.



Very important note here is to not stay in this position without a release for more than a couple minutes as you are also stretching nerves!

Ankle Strength Series

-050505

- Toe Spacers
- Short Foot
- Ball Between Heel
- Lever Balance on Kinesis Board

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