Implementation of a Foot Core Program

Weakness, poor motor control, and/or joint limitations may lead to many different foot/ankle pathologies

Focus of treatment is to initially reduce pain, promote foot/ankle strength and restore normal mobility

A strong, flexible foot is a healthy foot that can be resilient to foot related pathology

Foot Core

A series of exercises training the small intrinsic muscles of the foot to help support the arch and promote stability of the foot

Promote use of these muscles as often as possible and then progress the load to the foot as tolerated

Foot Core: Toe Yoga

1. Press the little toes down and lift the big toes up
2. Press the big toe down and lift the little toes up
3. Keep the big toe down and lift all little toes, Bring the small toe down

Foot Core: Toe Spreads

Spread the toes wide, then squeeze them back to together

Focus on the movement from the center of the foot

Consider recommending toe separators to begin working the mobility if challenging

Foot Core: Doming

Activating the muscles of the arch

Stiffen toes, press into the ground
Squeeze the arch, drawing the ball of the foot towards the heel, making the foot shorter, creating an arch
Hold for 10 seconds then relax
**Doming Errors**

- Minimize toe flexion
- Minimize over activity of tibialis anterior
- Minimize excessive supination

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**Exercise Prescription**

Perform all three foot core exercises together seated for about 3-5 minutes.

*Repeat 3-5 times a day*

Work to perform these exercises standing throughout the day.

*Barefoot - as much as possible*

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**Active Standing**

Stand with toes pointing forward or slightly out and dome the feet.

Unlock the knees slightly then squeeze your buttocks. Note what happens at the knees.

Tip pelvis into a neutral position
Draw naval to spine
Pull shoulders down and back.
Draw the chin in

**“Practice this posture as often as possible”**

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**Single Leg Balance**

From active standing, pick up one leg and balance. Continue to activate the arch and dome the foot.

**Progressions**

1. Unlock knee, shift weight forward to front of foot and back while while maintaining a good arch. Keep the heel on the ground.
2. Progress by shifting weight forward to small heel raise (one inch). Control on the lowering down.

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**Single Leg Balance Variations**

- Hip Hinge/Single leg deadlift: Hinge at your hip and keep your pelvis parallel to the floor.
- Unstable surfaces (airex, BOSU, wedges)
- Add weight
- Cable Trunk Rotations
- Reach in a circle

**“Perform all exercises barefoot”**

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**Doming and Hopping Drill**

Perform a small hop & land back in your active standing position.

Minimize your knee bend
Maintain knee position
Land soft back in a dome position
Perform barefoot

**Progressions:**

- Hop forward/back
- Hop side to side
- Increase speed

**Jump rope**

**“Focus on well aligned, soft landings”**
Hopping Drill Continued

Box jumps
- Start with small step (4 inches).
  Focus on landing light using the feet.
- Progress the height of boxes
  Progress to a box jump down
  Add in rebounds and speed

Agility Ladder

**Perform all exercises barefoot**

Single Leg Hopping Drill

Forward bounds: hop from one leg to the other leg
- Progressions:
  - Travel forward
  - Travel side to side
  - Increase speed

Single leg hop in place
- Progressions:
  - Increase speed
  - Forward/back, Side to side
  - Focus on height: box jump
  - Focus on distance

Calf Strength: Calf Raises

Calf raises: performed slow with full ROM
- Use of a stadiometer as a target for full ROM
- Goal: 30 full range single heel raises without pain or difficulties before running

Soleus raises: perform with knee bent

Calf Strength: Isometrics

Press up high on both legs, maintain height as you load one leg
- Goal: 45 second holds without heel dropping
  - Progress with weight

Other Extrinsic Exercises

Posterior Tibialis Strength
- Press the foot down and inward against resistance
- Work eccentrically, slowly allowing the foot to move up and out

Ankle/Toe Strength Combo
- Press the foot forward, then slowly press your toes forward, curling them
  - Slowly extend only the toes, then extend the ankle: all with control

Ankle Mobility: Joint Mobilization

Talocrural mobility: improve ankle dorsiflexion
- Tarsal glides: posterior distraction (glide or manip)
- Mob w/ movement

Distal Fibula mobility

Subtalar joint mobility: improve all directions
- Calcaneal distraction
- Lateral and medial calcaneal glides
- Post/sup fibula glides

Include midtarsals and metatarsals as needed
**Ankle Mobility: Soft Tissue Mobilization**

**Deep soft tissue mobilization:**
- Gastroc/soleus complex
- Posterior tibials
- Peroneals
- Foot intrinsics and plantar fascia

**Instrumented soft tissue mobilization:**
- Gastroc/soleus complex to improve ankle DF
- Medial/lateral lower leg muscles insertions/tendons

**Ankle Mobility: Self Techniques**

**Standing calf stretch:**
- Toes forward
- Knee straight and bent

**Use of lacrosse ball:**
- Calf, peroneals, post tib, plantar fascia/arch

**Deep soft tissue mobilization:**
- Gastroc/soleus complex
- Posterior tibialis
- Peroneals
- Foot intrinsics

**Mobilization with movement into DF:**
- With and without a band

**Calcaneal glides**

"Performed throughout the day to reduce pain and gain mobility"

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**Taping: Low Dye**

**Used for pain control**

1. Patient sits with ankle held at 90 degrees DF
2. Anchor strips are placed across metatarsals and around the perimeter of the foot
3. Tear drop technique - from 1st MTP joint wrapping around the calcaneus going lateral to medial then reconnected again to 1st MTP. Repeat at each met moving from 1st to 5th met.
4. Horizontal strips placed across the sole of the foot from the metatarsals to proximal calcaneus
5. Cell edges with another perimeter strip around the foot

**Use leukotape for longer, lasting effects**

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**Proximal Considerations**

Always consider the kinetic chain.

Proximal control will affect foot position.

**Triple flexion, Triple extension**

Timing: foot and glut activating together

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**Taping: Distal Fibula Head**

**Mulligan Technique: distal fibula glide posterior/superior**

Used commonly for ankle sprains. Assists in ankle stability.

Helps to “re-position” the fibula.

1. Patient’s foot rests in loose packed position
2. Cover roll is placed from lateral malleolus, wrapping around lower leg landing anterior
3. Place leukotape on lateral malleolus and glide fibula posterior and superior
4. Keep tension in tape as it is wrapped around lower leg
5. Gently lay on top of anterior lower leg
6. Repeat leukotape piece a second time to reinforce

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**Thank You**

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