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# Welcome to Day 1

# What is a **Barefoot Training Specialist®**?

A **Barefoot Training Specialist**<sup>®</sup> is a qualified health & fitness professional who has a thorough appreciation for the interconnection between the foot and the rest of the body in a concept we call *foot to core sequencing* 

A **Barefoot Training Specialist**<sup>®</sup> can recognize common foot and core imbalances and how each impacts alignment, stability and the transfer of impact forces from both a sensory and biomechanical perspective

A **Barefoot Training Specialist**<sup>®</sup> has a thorough understanding of the concept of *from the ground up* programming and uses evidence-based barefoot training and sensory stimulation to restore function, build strength and improve overall movement efficiency

A **Barefoot Training Specialist**<sup>®</sup> understands the importance of barefoot training that progresses from mobility, stability and integrated strengthening and how to customize this programming for each unique client

# Level 1 – Barefoot Training Specialist®?

The Level 1 **Barefoot Training Specialist**<sup>®</sup> Certification is focused on building a foundation of what EBFA refers to as foot to core sequencing and reflexive stabilization via fascial tensioning

As the foundation to all human movement, foot to core stability and fascial tensioning will translate to faster joint stability, more efficient movement, decreased risk of injury and improved performance.

The Level 1 Barefoot Training Specialist<sup>®</sup> Certification will focus on foot to core sequencing through co-activation patterns, myofascial lines and Brain. Breath. Barefoot.

A Level 1 **Barefoot Training Specialist**<sup>®</sup> will be able to demonstrate the concept of *from the ground up* activation, open chain & closed chain foot assessments and foot-specific programming. As the only Certification focusing on barefoot science and foot to core programming the newly Certified **Barefoot Training Specialist**<sup>®</sup> will be able to stand out from the competition.

# 10 years as leaders in barefoot education 2010 - 2020



#### Brain. Breath. Barefoot

The evolution of EBFA beyond barefoot into the sensory side of movement.

Life is Sensory



#### **Brain. Breath. Barefoot.**

Integration of the nervous system (**Brain.**) and processing of sensory stimulation from both interoceptive (**Breath.**) feedback and exteroceptive (**Barefoot.**) feedback creates the foundation to human movement and philosophy behind the Barefoot Training Specialist<sup>®</sup> Level 1 Certification

This translates into how our nervous system programs motor control, interprets safety and is able to control its own homeostasis or balance.

# Movement is sensory. Movement is life. Life is sensory

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# **Exteroception vs.** Interoception

# Feet are Exteroceptive

# The Sensory Side of Walking

# What is the sensory driver to walking?

# **Impact Forces = Potential Energy** Our gift from gravity & the ground

# Walking vs. Running Impact Forces

- 1 1.5x body weight walking foot contact2 2.5x body weight walking pushoff
- 3 4x body weight running foot contact
  5 6x body weight running pushoff

What accounts for this increased energy at push-off?

# Fascia!

#### **100 Million Sensory Nerves!**

Serves as an extension of the brain Sensory seeking for movement

# Proprioception vs. Mechanoception

### **Exteroception of Fascia**

# Proprioception

Joint position (cog) Kinesthesia (movement) Sense of force (tension) Sense in change (velocity)

### **Mechanoception**

**SAI (Merkel Disc)** – Two-point discrimination 1mm apart

SAII (Ruffini Endings) – Not found in primates – Skin stretch

FAI (Meissner Corpuscle) – Low frequency vibration (flutter)

FAII (Pacinian Corpuscle) – High frequency vibration < 300 Hz

### Sensory stimulation & walking How do we perceive impact forces?



# Vibration!

Vibration is our potential energy — but we need it to be stored in our connective tissue. How do get the vibration "into" our fascia? How do we absorb impact forces?

#### **Muscle Tuning Theory**

A certain intra-compartment pressure (stiffness) is required at foot contact to sufficiently load potential energy and keep forces in the myofascial tissue



#### **Footwear and Impact Forces**

#### The Shod Environment

- Delayed
- Reactive
- Energy Leaks
- Less Efficient
- Sensory Disconnect



The optimization of this myofascial transfer of energy when walkingis dictated by stability – which is a key concept of the BTS Level 1 Certification

**Reflexive Stabilization** 

# **Stability** is the foundation through which power, force and resistance is generated.

# From a global perspective — where is our bodies center of stability?

# **Center of Gravity**

# **Center of Stability**





# Local vs. Global Stabilizers

#### Local Stabilizers

- Transverse Abdominals
- Multifidi
- Pelvic Floor
- Diaphragm
- Psoas Major (posterior)
- Deep 5 Rotators

#### **Global Stabilizers**

- Int / Ext Oblique
- Spinalis
- Gluteus Medius
- Psoas Major (anterior)

# Local vs. Global Stabilizers

#### **Local Stabilizers**

- Increase muscle stiffness / tension
- Controls neutral joint position (centration)
- Activity independent of direction of movement
- High proprioceptive input (joint position)

#### **Global Stabilizers**

- Generates force to control ROM
- More of eccentric contraction
- Deceleration of momentum
- Non-continuous activity

# **Advanced Concepts in Core Stabilization**

- Local Reflexive Stabilization
- Micro-Stabilization
- Foot to Core Sequencing
- Sensory Sequencing
- Fascial Tension / Tensegrity
- Breath to Pelvic Floor Integration

# **Local Reflexive Stabilization**


#### **Deep Lateral Rotators**

- Gemelli Superior / Inferior
- Obturator Externus / Internus
- Quadratus Femoris



#### How do the Deep Rotators stabilize the hip joint?

Why is Piriformis not included in the Deep 5 Rotators?



obturator internus\_

\_coccygeus

iliococcygeus

\_pubococcygeus

ischiocavernosus /

bulbospongiosus

superficial transverse perineal

deep transverse perineal











## **Deep Front Line**

FHL, FDL, Posterior Tibialis

**Adductors** which insert on Ischiopubic Ramus

**Continuous with Obturator Fascia to Pelvic Floor** 

Continues up the Psoas and QL to the Diaphragm

#### Feel the Integration!

11

# How to teach short foot?

- 1. One foot at at time
- 2. Front knee bent
- 3. Foot tripod
- 4. Spread the digits
- 5. Engage the pelvic floor
- 6. Root the tips of the digits to the ground
- 7. Hold 10 seconds

The Art of Activating Local Reflexive Stabilization Through Breath

# To understand diaphragm function, one must understand the pelvic floor



# Anti-Gravity Muscle

#### **Pelvic Floor Facial Integration**

Anteriorly into the transverse abdominals (TVA)

Posteriorly into the deep sacral fibers of gluteus max

Laterally into the deep hip rotators (obturator internus)

Superiorly into the diaphragm

#### Breath to Pelvic Floor Rhythm The rising of the domes (bhandas)

#### **Pelvic Floor Identification**

1. 1. v

#### **Version 1– Standing**

- Isolate out only the anterior pelvic floor through kegel "stopping urine"
- Feel how this connects to the anterior TVA
- Isolate out only the posterior pelvic floor through "stopping poo"
- Feel how this connects to deep sacral glute fibers
- Integrate anterior isolation / posterior isolation / relax
- Activation both anterior and posteriorly simultaneously

## **Version 2– Lying Supine**

- Visualize base of pelvis is face of a clock
- Using pelvic floor muscles draw 6 o'clock to 12 o'clock
- Begin to feel tension generated in the posterior pelvic floor into the TVA
- Progress to hold the 6 o'clock to 12 o'clock then bring 3 o'clock to 9 o'clock
- Exhale during each activation, inhale as you release

#### When the rhythm is off

Over-activation of the diaphragm or pelvic floor

#### **Inhibition & Mobilization of Pelvic Floor**

- SMR to pelvic floor
- SMR to piriformis
- Pelvic outlet stretch #1
- Pelvic outlet stretch #2
- Piriformis stretch



#### **Diaphragmatic Breathing**

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# Diaphragmatic Breathing



Align ribcage and pelvis



Compare abdominal vs. chest breathing patterns



Identify 3dimensional thoracic breathing



## **Diaphragmatic Breathing to reset the ANS**

Return to safety and a parasympathetic state

#### The subconscious influence of breathing patterns

You can't just tell someone to breathe the right way

**Survival** is based on **sensory perception** and interpretation of both our internal and external environments with the purpose of modifying movement, memory and mood & **ensuring safety** 

# Am I safe?

# nteroception to our internal sensory experiences

#### Interoception

Defined as the sense of the internal state of the body

Body sensation \_\_\_\_\_ Interpretation \_\_\_\_\_ Emotion

Emotions arise from perceptions of changes in the body.



## Where do we find interoceptors?

# The Organ of Consciousness



# Fascia is Emotion

80% of peripheral nerves in fascia are free nerve endings (vs. myelinated proprioceptive nerves)

90% of free nerve endings are interoceptive

1:7 ratio of proprioceptive : interoceptive



## How to assess interoception?



#### **Heartbeat Tracking**

# Safety is sensory

## **Sensory-Based** Diaphragmatic Breathing

Barefoot Naboso Mat Hands on chest Audible exhalation Contract / Relax Cues
## Lunch Break!

## The Foot | Our Foundation

## If our foundation is not stable the rest of the body alignment falls apart

## **Rearfoot / Midfoot / Forefoot**





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## Foot as the Foundation Rearfoot

#### Rearfoot Complex Ankle Joint & Subtalar Joint

## What are the movements of the ankle joint?

The ankle joint does not move only through the sagittal plane.

Sagittal plane ankle movements are always coupled with transverse plane motion.

#### **Ankle Joint Axis**



#### **Dorsiflexion + Abduction**

#### Plantarflexion + Adduction



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





#### The Subtalar Joint (STJ)



**Inverted Foot** 

**Everted Foot** 

#### **Functional STJ Position**



Rigid Stable Locked Unloading impact forces Hypermobile Unstable Unlocked Loading impact forces

## **Rearfoot Complex Joint Coupling**

# How do you properly describe pronation and supination?

## **Triplanar Motion** (Moving through all three planes at same time) It takes two joints to pronate and supinate.

#### **Dorsiflexion + Abduction + Eversion**

(Rearfoot Pronation)

#### Plantarflexion + Adduction + Inversion

(Rearfoot Supination)

#### Foot as the Foundation Midfoot



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#### TaloNavicular Joint (TNJ)

#### Considered the "second ankle joint"



## Midtarsal Break The Primitive Ankle







#### What are the planes of motion of the TNJ?

#### **Dorsiflexion + Abduction**

#### **Plantarflexion + Adduction**

## Midfoot Complex Joint Coupling

#### **Dorsiflexion + Abduction + Inversion**

(Midfoot Supination)

#### Plantarflexion + Adduction + Eversion

(Midfoot Pronation)

#### midfoot collapse

talar-navicular joint

#### How does Rearfoot Pronation & Supination relate to Midfoot Pronation & Supination?

#### **Dorsiflexion + Abduction + Eversion**

(Rearfoot Pronation)

#### Plantarflexion + Adduction + Inversion

(Rearfoot Supination)

#### **Dorsiflexion + Abduction + Inversion**

(Midfoot Supination)

#### Plantarflexion + Adduction + Eversion

(Midfoot Pronation)

#### Metatarsal Cuneiform Joint (The 1st Ray)

#### Movements of the 1<sup>st</sup> Ray

**Plantarflexion & Dorsiflexion** 




# 1<sup>st</sup> Ray Instability & Bunions





## Foot as the Foundation | Forefoot

The 1<sup>st</sup> MPJ

#### Movements of the 1<sup>st</sup> MPJ



## Sliding, Gliding & Jamming



0 - 20 degrees = Sliding

10 – 50 degrees = Gliding

50+ degrees = Jamming



#### **Frontal Plane Foot Stability**

**Tibialis Anterior** 

**Posterior Tibialis** 

Soleus

Peroneus Brevis Peroneus Longus Gastrocnemius

**Invertors vs. Evertors** 

#### Anterior Compartment Tibialis Anterior

- Insertion: Base of 1<sup>st</sup> Metatarsal (10%) / Medial Cuneiform (90%)
- Concentric Action: Dorsiflexion Ankle

**Inversion Subtalar Joint** 

Dorsiflexion 1<sup>st</sup> Ray

- Eccentric Action: Decelerates Plantarflexion Ankle Decelerates Eversion STJ
- Functional:
  - Eccentric weakness presents as foot-slap
  - Isometrically loads impact forces
  - Associated with compartment syndrome



#### **Palpate the Tibialis Anterior**

**90% Medial Cuneiform 10% Base 1<sup>st</sup> Metatarsal** 

# Posterior Compartment (Deep) Posterior Tibialis

- Insertion: Navicular and Plantar Foot (9 insertions) Peroneus Longus Tendon / FHB Belly
- Concentric Action: Plantarflexion Ankle

Inversion STJ

**Externally Rotates Tibia** 

- Eccentric Action: Decelerates Dorsiflexion Ankle Decelerates Eversion STJ Decelerates Internal Rotation Tibia
- Functional:
  - Isometrically loads impact forces
  - Most powerful supinator of foot
  - Deep core stabilization (Deep Front Line)





#### **Palpate the Posterior Tibialis**

Navicular (Midfoot) Peroneus Longus Tendon Flexor Hallucis Brevis

# Posterior Compartment (Superficial) Soleus

- Insertion: Posteromedial calceneus into plantar fascia
- Concentric Action: Plantarflexion ankle

Inversion subtalar joint

- Eccentric Action: Decelerates ankle dorsiflexion Decelerates eversion STJ
- Functional:
  - Isometrically loads impact forces
  - Strongest ankle plantarflexor



#### How is it that the soleus is an invertor and the gastrocnemius is an evertor when they both insert as the Achilles tendon?





# Posterior Compartment (Superficial) Gastrocnemius

- Insertion: Posterolateral calceneus
- Concentric Action: Flexion/ Int & Ext rotation knee

Plantarflexion ankle

Eversion subtalar joint

• Eccentric Action: Decelerates knee extension

Decelerates ankle dorsiflexion

Decelerates inversion STJ

- Functional:
  - Propulsion, jumping
  - Assists proper propulsion



# **Tibial Femoral External Rotation**

# Lateral Compartment Peroneus Brevis

- Insertion: Base of 5<sup>th</sup> metatarsal
- Concentric Action: Plantarflex ankle
  Eversion subtalar
- Eccentric Action: Decelerates dorsiflexion ankle

Decelerates inversion STJ Increases lateral ankle stability

- Functional:
  - Primary lateral ankle stabilizer
  - Decelerates STJ inversion during gait





#### Palpate the Peroneus Brevis



# Lateral Compartment Peroneus Longus

- Insertion: Runs under cuboid into Medial Cuneiform (10%) Base 1<sup>st</sup> Metatarsal (90%)
- Concentric Action: Plantarflex ankle joint

Eversion subtalar joint

Plantarflex 1<sup>st</sup> ray

- Eccentric Action: Decelerates dorsiflexion Decelerates inversion STJ
- Functional:
  - Primary lateral ankle stabilizer
  - Stabilizes 1<sup>st</sup> ray for propulsion



#### Palpate the Peroneus Longus

10% Medial Cuneiform / 90% Base 1<sup>st</sup> Metatarsal

#### Identification of Foot Anatomy

### **Anatomy Practical**

#### Bones

Tibia Talus Navicular Medial Cuneiform 1<sup>st</sup> Metatarsal Base Fibula 5<sup>th</sup> Metatarsal Base (Styloid) Cuboid Calcaneus

#### Muscles

Anterior Tibialis

**Posterior Tibialis** 

Soleus

Gastrocnemius

Peroneus Brevis

Peroneus Longus

# **Open Chain Foot Assessment**

#### **Open Chain Foot Assessment**

**Relaxed Hip Position (Symmetrical?)** Hip Internal vs. External Position Limb Length Discrepancy Subtalar Joint Movement Ankle Joint ROM Silverskold Test Midline of the Foot Morton's Toe 1<sup>st</sup> Ray Mobility **1st MPJ Mobility** 

#### **Closed Chain Foot Assessment**



# Step 1 Double Leg Stance

**Relaxed Calcaneal Position** 

What is the calcaneal position? What is the navicular position?



#### Step 2 Single Leg Stance Active Calcaneal Position

#### What muscle should kick in?



# Step 3Single Heel Rise

Active Rigid Lever Position

#### What extrinsic muscle is this testing?

# End Day 1

# **Review Day 1**

# Optimization of movement requires optimization of sensory processing

Exteroceptive & Interoceptive Sensory Processing

#### **Brain Evolution** *Triune Brain Theory*

Paul MacLean coined the concept of the Limbic System and linked its role in evolution

Triune Brain:

Brain Stem (Reptilian Brain) Limbic System (Early Mammalian Brain) Neocortex (Mammalian Brain)



#### Brain Stem | Reptilian Brain

Focus is self preservation, survival and fight or flight

Focus is satisfying basic needs (hierarchy of needs) Exploration, feeding, aggression, dominance, and sexuality

Brain Stem includes: Medulla Oblongata Pons Cerebellum


### **Autonomic Nervous System & Brain Stem**

## **Reticular Activating System (RAS)**

Regulates wakefulness and sleep-wake transitions

Connects brainstem to the neocortex through the thalamus and hypothalamus

Must be awake to learn, recollect (memory), control emotion, optimize movement

### **Reticular Activating System (RAS)**



The ignition to the brain – must be stimulated to learn

BOFF

## **RAS Activation (Movement Prep)**

Stimulate the RAS to "wake up" the brain and prepare the body / brain for the session

Eyes & ears are linked to the RAS Eye movement exercises, vestibular training

Tongue ligaments link to the vestibular system which stimulates the RAS Yawning, pushing tongue on palate, rubbing by ears

#### Limbic System | Old Mammalian Brain

Innate emotional and motivational systems shape Based on instincts and past experiences Involved in social emotions, playfulness, and maternal nurturance

Limbic System Includes: Thalamus Hypothalamus

- Basal Ganglia
- Amygdala
- Hippocampus





## **The Limbic System**

Thalamus

Relay station for senses (except smell)

#### Hypothalamus

Controls the pituitary gland, body temp & sleep / wake states HPA Axis and cortisol release

#### **Basal Ganglia**

Movement, fine motor such as eyes and facial

Amygdala

Emotions, facial expressions

#### Hippocampus

Location of new nerve generation & short-term memory

#### Basal Ganglia & Movement Control The power of eye movement exercises

## **Balance Hacks for Eye Movement Exercises**

P4

Visual Spotting Tactile Stimulation Fascial Tension Breath Rhythm



## **Eye Movement Exercises**

Eyes + Vestibular Head Turn Eye Tracking (Head moves) Eye Tracking (Hand moves) Infinity Tracking Saccades Peripheral Vision Training

#### **Neocortex** New Mammalian Brain

"Command Central"

One fourth brain volume but has 85% of the neurons.

Neocortex allows complex motor programming, language, reasoning & consciousness

#### **Neocortex** New Mammalian Brain

"Command Central"

One fourth brain volume but has 85% of the neurons. Neocortex allows complex motor programming, language and reasoning





To optimize performance & movement one must be able to <u>efficiently process</u> <u>sensory stimulation.</u>

To process sensory stimulation one must be able to access all aspects of the brain, starting with the brain stem.

# To proceed past the reptilian brain one must feel "safe"

The perception of safety is reflected in the autonomic nervous system state

#### The Autonomic Nervous System The Brain Stem



The **autonomic nervous system (ANS**), formerly the **vegetative nervous system**, is a division of the peripheral nervous system that supplies smooth muscle and glands, and thus influences the function of internal organs.

The autonomic nervous system is a control system that acts largely unconsciously and regulates bodily functions, such as the heart rate, digestion, respiratory rate, pupillary dilation, sweating, urination, sexual arousal.

This system is the primary mechanism in control of the fight or flight response.





Sympathetic Nervous System Parasympathetic Nervous System

Enteric Nervous System

## ANS | Sympathetic

Fight or flight response

Heart rate accelerator and blood pressure increase, liver glycogen is converted into glucose and peristalsis of the gastrointestinal tract is temporarily inhibited.

Sympathetic response with hypothalamic-pituitary-adrenal (HPA) axis, maintaining internal **homeostasis** (cortisol)

The "gas pedal" to heart rate

## ANS | Parasympathetic

*Rest and digest* response

Returns the body functions back to normal. Blood pressure lowers, heart rate slows down, gastrointestinal peristalsis is turned on again and the liver starts producing new glycogen

80% of Parasympathetic System is **Vagus Nerve** 

70% of Vagal branches are sensory / linked to emotion Vagus Nerve = **Interoception** 

The "brake" to heart rate

#### Which system is the one that controls our autonomic state?



Sympathetic Nervous System

Parasympathetic Nervous System



# Training the Parasympathetic Muscle



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## Meet the Vagus Nerve (CNX)

It is the longest nerve of the autonomic nervous system and comprises sensory and motor fibers.

- Innervates muscles of the throat
- Innervates organs of respiration
- Innervates organs of digestion
- Innervates the heart (SA node)

## Vagal Tone

An index for the functional state of the parasympathetic system

Is frequently used to assess heart function (heart rate variability), and is also useful in assessing emotional regulation and other processes that alter, or are altered by, changes in parasympathetic activity

The ability to re-establish baseline in the ANS after a sympathetic response



## Improving Vagal Tone

**Temperature stimulation** Cold showers / whole body cryotherapy **Vocal cord stimulation** Chanting / Singing / Gargling / Gag reflex **Diaphragm stimulation Breathing exercises Gut stimulation Probiotics / Fasting Movement stimulation** Yoga / Tai Chi / Meditation / Barefoot Training

# Once the client's ANS senses "safety", sensory processing will resume

## **Exteroceptive Sensory Processing**

External physical reality & identity of body as part of a whole

## **Somatosensory Cortex (S1)**

The primary somatosensory cortex is responsible for processing somatic sensations. These sensations arise from receptors positioned throughout the body that are responsible for detecting touch (mechanoception), proprioception (i.e. the position of the body in space), nociception (i.e. pain), and temperature.

Brodman's areas 3b, 3a, 1, and 2

Cutaneous information is predominantly processed in areas 3b and 1 whereas areas 3a and 2 mainly receive information from the deep body tissues



## S1 to M1 Influences

Clinical observations in humans report increased peripheral somatosensory inflow facilitates functional reorganization of M1

S1 can drive motor commands without the intervention of M1

Second important feature of S1 is that it is interconnected with other primary sensory cortices (e.g. visual and auditory; V1 and A1, respectively)

Rehab concept to fine tune sensations and movements in close cooperation with the motor cortex



How can you combine tactile, proprioception, visual and auditory?

### **Somatosensory Cortex (S2)**

The cutaneous fields areas 3b and 1 are connected with area 2, and the secondary somatosensory cortex

Further enhanced by visual input

Viewing the stimulated body site improves performance on tactile discrimination



## Interoceptive Sensory Processing


# orbital prot

temporal

The insula is critically involved in the processing, integration, and cortical representation of visceral and interoceptive information

ventral

B

frontoparietal Anterior Insular Cortex

frontoparietal

Anterior Cingulate Cortex

insula

SPS

frontoparietal

frontoparieta

tempora

orbital pretrontal

B'

insula

Å



## Sensory as the driver to stabilization

Reflexive foot to core

## Local vs. Global Stabilizers

#### **Local Stabilizers**

- Increase muscle stiffness / tension
- Controls neutral joint position (centration)
- Activity independent of direction of movement
- High proprioceptive input (joint position)

#### **Global Stabilizers**

- Generates force to control ROM
- More of eccentric contraction
- Deceleration of momentum
- Non-continuous activity

#### Advanced Concepts in Local Stabilization Joint Centration

# How does joint centration optimize force output and function?

# When there is a loss of hip joint centration which direction does the femoral head shift?

#### Anterior / superior shift of the femoral head

#### **Muscle Imbalances & Joint Centration**

Hip joint centration requires balance between psoas and glutes – facilitation or inhibition of one/other

TFL vs Psoas pulls fem head anteriorlyHamstrings vs. Glutes pushes fem head anteriorly

#### The Effects of External Rotation on Hip Labrum Tears

Most common anterior / anterior superior aspect of labrum

Associated with hip hyper-abduction, twisting, falling, motor vehicle accidents, chronic movement patterns (especially those that require hip external rotation or hyperextension such as soccer, karate or ballet) How do we address a loss in deep hip stability and joint centration?



Inhibit Mobilize Activate Integrate



#### **Step 3 | Pelvic Floor, Diaphragm & Deep 5 Rotators**

I. I.

#### **Step 4** | Integration with Ground & Gravity



### Lunch Break!

## Anatomy Review

Foot Assessment Practical Exam A Functional Approach Foot Correctives

#### **The Over-Supinated Foot**



Goal: Increase Mobility

Mobilize Foot Invertors - Soleus - Posterior Tibialis - Anterior Tibialis - Intrinsics Mobilize Hip External Rotators Ankle, Pelvis & T-Spine Mobility

#### **The Over-Pronated Foot**



**Goal: Increase Stability Mobilize Foot Evertors** - Peroneals - Lateral Gastroc **Mobilize Hip Internal Rotators Activate Foot Invertors** - Posterior Tibialis - Intrinsics **Activate Core Stabilizers** Foot to Core Sequencing

#### **The Anteriorly Shifted Talus**



Goal: Increase Centration Ankle

Posterior Talar Mobilization or Anterior Tibial Mobilization

Proprioception & Mechanoception Stimulation

#### **Tibial Femoral External Rotation**



Goal: Knee Alignment at Flexion

Inhibition of Tib Fem External Rotators - Lateral Gastroc - Bicep Femoris - TFL / ITB

Activation Tib Fem Internal Rotators - Medial Gastroc

- Semimembranosis / Tendinosis

# Foot Function & Fascial Lines

#### Fascial Connections are Fast!

#### Foot Fascial Connections...

....are fast ....are sensory driven ....are integrated ....are functional ....are based on tension ....transfer to gait

#### **3 Functions of the Foot in Gait**

Shock absorption Single leg stance Propulsion



#### **3 Key Foot Fascial Lines**

Deep Front Line Spiral Line Lateral Line

# What fascial line is the foundation to foot to core sequencing and fascial tensioning?



#### **Deep Front Line**

#### FHL, FDL, Posterior Tibialis

#### **Adductors** which insert on Ischiopubic Ramus

**Continuous with Obturator Fascia to Pelvic Floor** 

Continues up the Psoas and QL to the Diaphragm

#### What exercise do we do to activate the Deep Front Line?

# Short Foot doesn't always have to be done with the entire foot on the ground.



#### **Gait Transfer – Shock Absorption**

# What fascial line does the **Peroneus Longus and Tibialis Anterior make up?**



## Spiral Line

**Rhombo-serratus structures** 

Abdominal obliques.

**Tibialis anterior-peroneus longus sling** 


#### First Ray, Great Toe, Gait



#### **Gait Transfer – Propulsion**

What other fascial line does Peroneus Longus make up?



#### Lateral Line



## **Gait Transfer – Single Leg Stance**

#### Barriers to Movement Efficiency Footwear

Feature #1 – Control



### How much control?

#### Feature #2 - Cushion

### How much cushion?

# Feature #3 — Heel Toe Drop

#### How much drop?





Merrell Road Glove (0mm)



New Balance Minimus (4mm) Transitional



Asics GEL-Cumulus 14 (11mm) Traditional

#### What shoe is best for you? It depends

## **Barefoot Training Specialist®** Certification

- Take your barefoot training knowledge to the next level with the Barefoot Training Specialist<sup>®</sup> Certification
- To earn the Barefoot Training Specialist<sup>®</sup> Certification you must take the certification exam. This 50 question exam will test your knowledge of foot anatomy, fascial integration, foot typing and foot-specific programming.
- Benefits of the Barefoot Training Specialist<sup>®</sup> Certification include:
  - Promote yourself on the EBFA website as a Barefoot Training Specialist<sup>®</sup>
  - Access to the EBFA Online Education Portal with hundreds of research articles, case studies and webinars
  - Expand your referral base in corrective exercise, functional training and sports performance

# Further education by EBFA Global

BARE® Workout Barefoot Training Specialist® Level 2 BarefootRx® Specialist Level 1 Pelvic Balance Workshop Interoception Performance Specialist

For more info on live and online education www.ebfaglobal.com