



# GROW WITH EBFA™

September, 2014

Educational newsletter brought to you by the Evidence Based Fitness Academy Inc.

## Hello Health & Fitness Professionals!

Welcome to the latest issue of GROW with EBFA®!

As we approach the end of Summer, EBFA proudly brings you a strong Fall line-up of workshops across the globe. With our Master Instructors in full swing, EBFA is able to spread the power of barefoot training and gait assessment to health and fitness professionals across Asia and North America.

With the continued growth of EBFA Education, we will be hosting another Master Instructor Training November 7th - 9th in Northern California. If you are interested in learning more of what it takes to join a Team of Leaders in Barefoot Education please contact [education@ebfafitness.com](mailto:education@ebfafitness.com) or visit Page 5 of this Issue.

We hope you enjoy this latest issue of GROW!

*Dr. Emily*

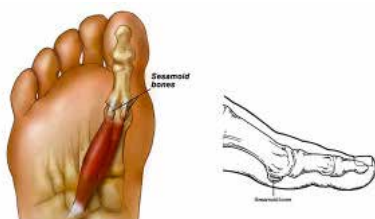
## Featured Article

### Foot Function & Fascial Lines: *Sesamoids, Short Foot & Stability* by Dr Emily Splichal, DPM, MS, CES

Welcome to another installment of EBFA's Blog Series: Foot Function and Fascial Lines. This series of articles explores the fascial integration between the foot and the rest of the body. We will show you that these fascial integrations are more complex than you think and expand beyond simple slings and lines.

This week's article is dedicated to fascial integration with the sesamoid bones of the great toe joint – and how this influences our ability to engage foot intrinsics, build a strong foot foundation and stabilize the pelvis proximally during gait.

#### The Sesamoids



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## Why Happy Feet Need the Windlass Mechanism

by Mike Salvatore, EBFA-MI

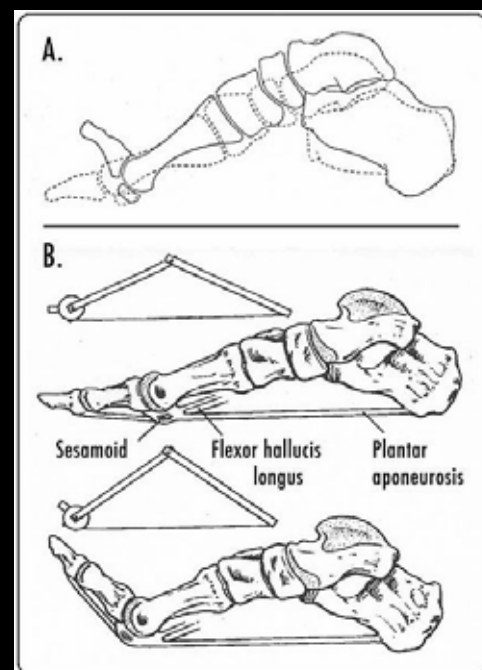


Figure 1

Source: <http://en.wikipedia.org/wiki/File:PF-PlantarMove.jpg>

Even if you're not sure what the windlass mechanism is, your feet are employing it every day. Or at least you should hope your feet are employing it, since an improperly activated windlass mechanism can leave you in pain, unstable, exhausted and plagued by agonizing foot problems.

#### What is the Windlass Mechanism?

The windlass mechanism is one of those handy biomechanical functions your body automatically activates to ensure proper functioning. This particular mechanism, first described by John Hicks in 1954, involves the functioning of your foot during a walk or run. Unlike earlier bipeds that had flatter, less supple feet, modern man's feet have evolved to accommodate and properly support



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long distance walking and running in drier and more open environments. The windlass mechanism involves the rising of the foot's arch and the subsequent tightening of your foot and compacting of its bones as you take a step to move forward (Figure 1). This allows the foot to function as a shock-absorber when your heel hits the ground and then switch to function as a rigid lever that helps propel you forward for your next step. A properly activated windlass mechanism gives you the stability you need to effectively walk, run, bicycle or engage in other activities that involve your feet.

The flattening of your arch and stretching of the plantar aponeurosis during the mechanism also saves you loads of energy (Figure 2). One study gauged the energy savings at more than 15 percent higher than those who walk or run without a properly activated windlass mechanism. The energy savings comes from the foot's ability to store energy as it flattens, or pronates. That energy is then released when the foot arches, or supinates, and we are propelled forward from the elastic properties in the foot's arch that act as a spring mechanism which instantly jump into action without any conscious muscle activation on our part.



### What Can Go Wrong

Expending unnecessary energy during a walk or run is not the only drawback that can result when the windlass mechanism is not properly activated. If your foot no longer transforms into the rigid lever needed

to help propel your forward, it can mess up your gait's timing and effectiveness along with your overall body mechanics.

On the flipside, if your foot is stuck in supination as a rigid lever, it will be unable to flatten the arch. This leaves your foot unable to absorb shock or store energy through elastic recoil. Either scenario can put undue repetitive stress on your fascia, resulting in tears in the plantar fascia and the painful condition of plantar fasciitis.

Risks of a windlass mechanism that is delayed in its activation include poor stabilization of your midfoot area and more tension on the ligaments throughout your foot. Delayed activation can result in overuse injuries, joint subluxation and more of that aforementioned pain.

### Making It Right

The treatment of heel pain, plantar fasciitis and instability due to an improperly activated windlass mechanism involves going to the source of the problem. Instead of merely treating the physical symptoms, treating the root cause of the issue can not only help eliminate symptoms but also ensure proper functioning going forward. The windlass mechanism relies on the dorsiflexion of the big toe, which is the extension of the toe back toward the body. Thus adding controlled dorsiflexion

Situated directly under the head of the first metatarsal you will find two small, oval bones. These two bones are referred to as sesamoids and actually lie within the tendons of the flexor hallucis brevis (FHB) muscle.

Acting much like the patella, the sesamoids functionally create a fulcrum to provide a mechanical advantage to the FHB during the propulsive phase of gait. As we shift from Late Midstance to Terminal Stance, the FHB engages to stabilize the great toe (and 1st MPJ) against the ground allowing us to push-off in the sagittal plane.



Of course we need to take this one step further as 1st MPJ stability is not only observed in the sagittal plane but also the transverse (and frontal) plane. To stabilize the great toe in the transverse plane we have to look even closer at the tendons of the FHB.

### Enter the Abductor and Adductor Hallucis

Closer examination of the FHB and the 1st MPJ demonstrates that there is an integrated relationship between the FHB and the abductor hallucis and adductor hallucis muscles – both transverse plane muscles.



Situated on the medial aspect of the FHB we find the abductor hallucis muscle (think short foot!) whose tendon actually joins that of the FHB (medial tendon) forming a conjoined tendon (or one tendon).

On the lateral side of the FHB we find the adductor hallucis muscle which is formed by both an oblique head (which originates from the peroneus longus tendon) and a transverse head. Together these two heads of the adductor hallucis

join the lateral tendon of the FHB as it inserts onto the proximal phalynx.

So this means that we have a conjoined tendon between the abductor hallucis and FHB – as well as a conjoined tendon between the adductor hallucis and the FHB. This medial / lateral balance between the abductor hallucis and the adductor hallucis muscle provides the transverse plane stability of the great toe and FHB as we transition into push-off.

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of the toe to a recovery program that additionally stretches the calf muscles can help reduce symptoms and restore biomechanics to their optimum functioning.

A Pilates practice that focuses on stretching and strengthening the foot and ankle complex can also help. Keeping the muscles, tendons and ligaments of your feet and ankles strong and supple may not only assist in restoring and maintaining a properly activated windlass mechanism, but additionally ensure your body enjoys proper functioning and stability in a wide scope of activities.

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***Are you ready to review a complex fascial integration in the foot?***



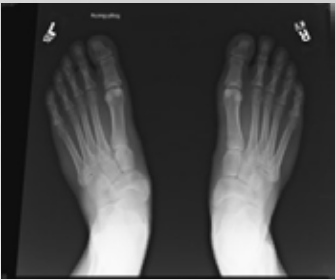
1. The adductor hallucis originates on the peroneus longus tendon (which is part of the lateral line and spiral line) and joins the FHB as a conjoined tendon.
2. The FHB has myofascial insertions from the posterior tibialis muscle (which is part of the deep front line) and joins the abductor hallucis as a conjoined tendon.
3. The abductor hallucis which is engaged during short foot exercise functionally picks up the navicular stimulating the posterior tibialis (deep front line) as well as the spiral line and lateral line as the posterior tibialis also has myofascial connections to the peroneus longus.

This complex myofascial integration of the foot with the rest of the body is all in the name of LOCOMOTION!


## So what do the sesamoids have to do with this?

Well there is what's referred to as sesamoid position. Sesamoid position is the transverse plane position of the sesamoids in relation to the midline of the first metatarsal.

Centered sesamoids (see below) offer the perfect balance between the abductor hallucis and adductor hallucis, allowing proper push-off.



In the case of bunions or deviation of the great toe what starts to happen is the sesamoid position shifts. When the sesamoids shift they begin to provide a mechanical advantage to the adductor hallucis muscle in the transverse plane (which is part of the pathomechanics behind bunion formation).



As the sesamoids shift laterally they bring along the FHB tendons, as well as the abductor hallucis tendon. Eventually the abductor hallucis tendon rolls under the 1st metatarsal head, taking it out of the transverse plane and making it a sagittal plane muscle.

## How does this influence short foot?

With the repositioned abductor hallucis tendon under the 1st metatarsal head it becomes difficult to engage short foot (and activate the reflexive core stability associated with short foot). Since we use short foot as a key part of barefoot strong programming there are a few tricks you will need to try to better help your client activate the abductor hallucis:

## 1. Rocktape the foot!

By using kinesiology tape you can assist in abduction of the hallux while stimulating the superficial proprioceptors.  
<http://www.rocktape.com>

## 2 Try the Bunion Bootie!

Bunion Bootie is one of my favorite bunion correction devices that are slim, sleek and can be used during barefoot exercises or even in shoes. This small device is more of a sock than a device.  
<http://www.bunionbootie.com>

### 3. Patience!

Remember that even though the client may not feel the engagement of the abductor hallucis be patient. The more foot intrinsic strengthening is integrated into the client programming the more the motor neuron activation will follow.

**For more great tips on barefoot training, short foot and fascial integration between the foot & core please visit [www.ebfafitness.com](http://www.ebfafitness.com)**



# Upcoming Master Instructor Training



## EBFA's MI Program Returns November 2014

-Dr Emily Splichal, Founder EBFA Fitness

### Do you have a passion for fitness and education?

We are looking to bring on a highly select group of Master Instructors to share the power behind our unique educational programming for health and fitness professionals.

The EBFA Master Instructor (MI) Team is made up of highly qualified, passionate instructors with extensive fitness industry experience. All EBFA MI's have been thoroughly trained to teach the core Certifications offered through the EBFA program. Our Master Instructors conduct certification trainings and continuing education workshops throughout the world.

### Do you want to join a team of leaders in barefoot education?

As the first and only fitness education company that focuses on programming from the ground up™, EBFA has become the leaders in barefoot education globally!

Started in 2011 by Podiatrist and Human Movement Specialist, Dr Emily Splichal, EBFA is her way of sharing with the health and fitness industry her passion for both medicine and movement. With Dr Splichal's unique educational background and insight into human movement as it relates to the foot & ankle and barefoot science, EBFA quickly became recognized for our evidence-based barefoot training programming including:

- Barefoot Training Specialist® Certification
- BARE® Workout Instructor Training
- Barefoot Rx® Certification
- Foot Strike & Functional Movement (Gait Assessment)

### Requirements for becoming an EBFA Master Instructor:

1. Candidate must hold a current, Nationally-Accredited (NCCA) Personal Trainer or Group Fitness Certification such as ACE, AFAA, NASM, NSCA or hold an advanced degree such as BS, ATC, LMT, MS, DPT, DC, DPM, MD.
2. Candidate must have a minimum 5 years experience in the fitness industry and demonstrate a passion for continuing education through either advanced fitness Certifications or attendance at fitness conferences.
3. Candidate must be fluent in English, but upon successful completion of the EBFA MI Program, courses can be taught in native language. EBFA will assist in the translation of all EBFA manuals, power points and supplementary educational materials.
4. Although prior teaching experience is not required, EBFA MI must demonstrate proficiency in public speaking and must embody the passion for the foot & ankle, barefoot science and human movement.

Upon successful completion of the EBFA MI Program, the MI will join a team of like-minded, passionate professionals who are ready to change the way the fitness industry looks at human movement, injury prevention and athletic performance - **from the ground up™!**

## EBFA Master Instructor Training

**November 7-9, 2014**  
**San Mateo, CA**

## Accepting Applications!

**For more information please contact:**

**[education@ebfafitness.com](mailto:education@ebfafitness.com)**

### EBFA Master Instructor Program Agenda

November 2014, San Mateo California



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- Barefoot Rx® Certification
- Foot Strike & Functional Movement (Gait Assessment) Certification

#### Quick Facts

**Date:**

Nov 7-9, 2014

**Location:**

San Mateo Athletic Club

1700 W. Hillsdale Blvd

San Mateo, CA 94402

**Cost:**

\$600 USD

(does not include travel, hotel)

**Contact:**

[education@ebfafitness.com](mailto:education@ebfafitness.com)

#### Once in a lifetime experience

This 3 day intensive Master Instructor Program is unique to any training or Certification you have attended. By integrating the concept of from the ground up™ programming, we guarantee that after these 3 days you will not look at human movement the same!

Experience the power behind the foot & ankle and barefoot science while deepening your understanding of the human gait cycle, energy transfer and footwear science.



# Upcoming Workshops

## US & Canada

**Sat. September 13, 10am - 5pm**  
**Barefoot Training Specialist® -**

**Roseville, CA**  
Elite Athletics  
10560 Industrial Avenue  
Roseville, CA 95678

**Sat. September 13, 10am - 4pm**  
**Barefoot Training Specialist® -**

**Denver, CO**  
Project MOVE  
4925 S. Santa Fe Drive #100,  
Littleton, CO 80120  
(434) 942-0178

**Sun. September 21, 11am - 2pm**  
**Barefoot Training for Power & Agility -**

**Little Falls, NJ**  
Parabolic Performance and Rehab  
Floyd Hall Arena  
One Hall Drive, 28 Clove Rd,  
Little Falls, NJ 07242

**Sat. September 27, 10am - 5pm**  
**BarefootRx® Rehab Specialist -**

**Warwick, RI**  
Healthtrax Warwick  
2191 Post Rd  
Warwick, RI 02886

**Sun. September 28, 10am - 4pm**  
**BARE® Workout Instructor Training -**

**Danvers, MA**  
KiKi Pilates  
10 Elm Street  
Danvers, MA 01923

**Sat. October 4, 10am - 5pm**  
**Barefoot Training Specialist® -**

**Dallas, TX**  
Location TBA

**Sat. October 25, 10am - 5pm**  
**Barefoot Training Specialist® -**

**Manhasset, NY**  
The Fitness Loft  
1447 Northern Blvd.  
Manhasset, NY 11030

**Sat. October 25, 10am - 5pm**  
**Barefoot Training Specialist® -**

**Toronto, Canada**  
AK Fitness  
44 Prince Andrew Place  
Toronto, Ontario M3C 2H4

**Sat. October 25, 9am - 4pm and**  
**Sun. October 26, 9am - 4pm**  
**Movement from the Ground Up -**

**Naperville, IL**  
mklab Pilates  
20 W. Jefferson  
Naperville, IL 60564

## International

**Sat. Sept. 6, 9am - 5pm**  
**Barefoot Training Specialist® -**

**Singapore**  
TMP Fitness & Recreation Club  
55 Newton Road, #05-02  
Singapore 307987

**Sun. Sept. 7, 9am - 5pm**  
**Foot Strike & Functional Movement -**

**Singapore**  
TMP Fitness & Recreation Club  
55 Newton Road, #05-02  
Singapore 307987

**Sun. Sept. 7, 9:30am - 5pm**  
**Barefoot Training Specialist® -**

**New Delhi, India**  
Athena Fitness  
Sector 7, Dwarka  
New Delhi, India

**Sun. Sept. 14, 9:30am - 5pm**  
**Barefoot Training Specialist® -**

**Bangalore, India**  
Your Day Studio  
Wilson Gardens  
Bangalore, India

**Sun. Sept. 14, 10am - 5pm**  
**Barefoot Training Specialist® -**

**Gurgaon, India**  
Fitness First  
3rd Floor, South Point Mall  
Gurgaon, India

**Mon. Sept. 15, 9:30am - 4:30pm**  
**Barefoot Training Specialist® -**

**Tokyo, Japan**  
Chiyoda-ku Tokyo Japan  
Closed station Suidobashi

**Sat. Sept. 21, 10am - 5pm**  
**Foot Strike & Functional Movement -**

**Seoul, Korea**  
KFTA  
Seoul, Korea

**Sat. Sept. 27, 9am - 5pm and**  
**Sun. Sept. 28, 9am - 5pm**

**Barefoot Training Specialist® -**

**Manila, Philippines**  
The Podium  
4th Level, #413A  
Manila, Philippines

**Sat. Oct. 4, 9am - 5pm and**  
**Sun. Oct. 5, 9am - 5pm**  
**Movement from the Ground Up -**

**Sydney, Australia**  
Goodlife Health Clubs  
4/1 Martin Place  
Sydney 2000 Australia

# Movement from the Ground Up Workshop

Fitness | Performance | Rehab

Are you ready to take "barefoot" beyond running?

**October 4th - October 5th**

**Goodlife Health Clubs  
Sydney, Australia**

**- 16 SPOTS LEFT! -**

**Register NOW!**

**[www.ebfafitness.com](http://www.ebfafitness.com)**

**October 11th - October 12th**

**Neuralign Personal Training  
Melbourne, Australia**

**- 10 SPOTS LEFT! -**

**October 25th - October 26th**

**MKLab, Pilates  
Chicago, Illinois**

**- 8 SPOTS LEFT! -**



FOOT ACTIVATION Small nerve training FOOT TO CORE STABILITY  
Footwear Science REFLEXIVE STABILITY Pre-activation training  
ING RESPONSE Footwear Science BAREFOOT

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**Leaders in Barefoot Fitness**