GROW WITH EBFA™

November, 2014

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

Hello Health & Fitness Professionals!

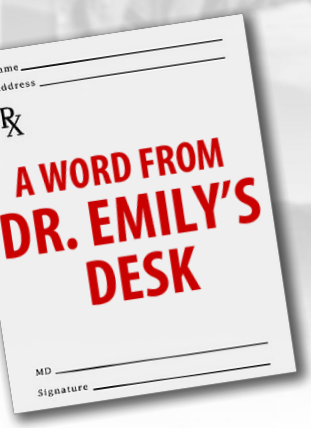
Welcome to the latest issue of GROW with EBFA®!

As we approach the end of 2015, EBFA is excited to announce that we are amping up for a jam packed 2015!

With our educational calendar already booked through July 2015 there are many opportunities for health and fitness professionals to take their understanding of barefoot science to a new level. We are proud to announce that all EBFA courses will be updated with new content and the latest research as it relates to pre-activation training, muscle tuning, the aging foot plus much more.

Want to learn what else is in store for EBFA in 2015, check out this YouTube video - HERE!

Dr. Emily



Featured Article

Short foot and Transfer of Learning

by Dr Jennifer Barlow, DPM, BTS-C

Cressey, West, Tiberio, Kraemer, and Maresh (2007) stated that there is little transfer from static to dynamic balance. Unstable surface training (UST) relies primarily on static balance (Cressey et al., 2007). Based on the findings of their study, these authors concluded that proprioceptive training is better accomplished on a stable surface (Cressey et al., 2007).

It is interesting to compare this to the findings of Moon, Kim, and Lee (2014). These authors found an immediate improvement in dynamic balance after performing the short foot exercise (SFE) in static stance on a stable surface. Dynamic balance in this case was measured by the limit of stability (LOS) test (Moon et al., 2014). The LOS test involved moving the center of pressure (COP) in eight directions as far as possible while standing on a support base (Moon et al., 2014). This study showed an increase

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The Functional Impact of Bunions

by Dr Emily Splichal, DPM, MS

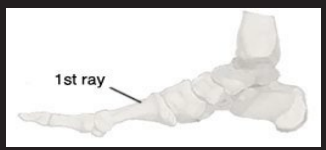
When you hear the word "bunions"- what comes to mind?

Do you picture the foot of a young athlete or that of a stiletto-loving woman? Often associated with high heels or blamed on "genetics", bunions are actually more often due to improper biomechanics and faulty movement patterns.

In the below article we will explore the impact bunions have on functional movement – from the way we stabilize our core to the way we push off with each step!

To fully appreciate the functional impact of bunions, we must first understand both the biomechanics of the first ray as well as the fascial lines crossing the bottom of the foot.

The First Ray



The formation of bunions is associated with the stability (or rather instability) of the first ray and the balance of muscles around the 1st MPJ. The bones which make up the first ray include:

-medial cuneiform
-first metatarsal
-hallux (great toe)

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When our foot loses stability of the 1st ray, specifically at the metatarsal / cuneiform joint, the long metatarsal is able to swing out medially forming the structure we recognize as bunions.

As the metatarsal / cuneiform joint deviates medially, the soft tissue structures around the 1st MPJ begin to deviate laterally.

What causes first ray instability?

If you guessed pronation or calcaneal eversion you are correct.

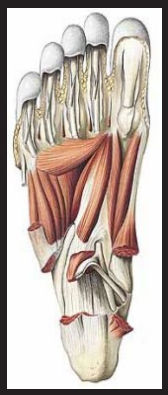
Some additional drivers of first ray instability include tibial:femoral external rotation or TFER. This was discussed in the blog post Subluxing Peroneals. In my office I find this TFER to be highly over-looked but one of the strongest drivers of bunion formation and foot dysfunction.

The First MPJ

To further understand the impact of bunions we must now explore the stability of the 1st MPJ or great toe joint.

Transverse plane stability of the 1st MPJ is a balance between the adductor hallucis muscle laterally and the abductor hallucis medially. What is unique about these two muscles is that they both share a tendon with another intrinsic muscle – the flexor hallucis brevis.

The flexor hallucis brevis muscle is unique in that it has two small sesamoid bones lying in the tendons.



If we take a closer look at the picture on the left we can appreciate how the medial tendon of the flexor hallucis brevis shares a tendon with the abductor hallucis, and the lateral tendon of the flexor hallucis brevis shares a tendon with the adductor hallucis.

How 1st MPJ transverse plane stability impacts function has to do with what's called sesamoid position. In the above picture we can see that the flexor hallucis brevis (and therefore sesamoids) are sitting directly under the 1st metatarsal head or 1st MPJ. This allows a perfect balance between the abductor and adductor hallucis.

If we go back to the bunion picture (top), we can appreciate that the sesamoids have shifted laterally away from the 1st metatarsal head.

How does this affect functional movement? The answer has to do with our fascial lines and how we stabilize proximally!

in LOS after performance of the SFE indicating and improvement in dynamic stability (Moon et al., 2014). It was thought that this was due to stimulation of plantar proprioceptors (Moon et al., 2014).

A similar result was seen in Lynn, Padilla, & Tsang (2012). These authors tested both static and dynamic balance after training with the SFE or towel-curl exercise (TCE). Static balance was tested by standing in single leg stance for 30 seconds, while dynamic balance was tested via the Y balance test (Lynn et al., 2012). Training for both exercises was performed in the static position on a stable surface over a four week period (Lynn et al., 2012). While no changes were found in static balance, all groups noted a decrease in mediolateral COP on the dominant limb. On the non-dominant limb, the SFE group decreased the COP much more (Lynn et al., 2012). This suggested that regardless of performing intrinsic foot muscle exercises, performing dynamic tasks in single leg stance alone may improve intrinsic muscle function on the dominant limb (Lynn et al., 2012).

Thus, there can indeed be transfer from a static to a dynamic balance task. It would seem from the above mentioned articles that plantar proprioception may be the missing ingredient.

Some earlier evidence at first glance seems to be to the contrary. Rothermel, Hale, Hertel, and Denegar (2004) looked at the effect of incorporating the short foot position on a balance training program. These authors compared a traditional balance training program (TRAD) to programming emphasizing foot positioning (POS) (Rothermel et al., 2004). Again, the positioning specifically was the performance of the short foot exercise. As far as what constituted a traditional program, this was described as different single leg stance tasks on various surfaces and both visual and non-visual conditions (Rothermel et. al., 2004). Surfaces included a hard floor and foam pad.

Participants were tested for balance both before and after the 12-session program completed over 4 weeks. Only one leg was trained in each subject, but both legs were tested. In the POS group, subjects were first taught the short foot exercise. They did this first sitting, then standing in double leg stance, then finally in single leg stance. They then were instructed to perform the balance exercises while holding this position.

Results indicated that the TRAD group improved more than the POS or control groups (Rothermel et al., 2004). This occurred in both the trained and untrained limbs. The most improvements were seen on the trained leg in the non-visual or eyes closed condition (Rothermel et al., 2004).

What could be the reason for this? The authors offered several explanations. One was that in the POS group, subjects had to focus more on holding the short foot position rather than maintaining balance (Rothermel et al., 2004). The other was that with learning a new motor program with the short foot exercise, the established program for postural control may have been interfered with (Rothermel et al., 2004). Or, conscious activity may have interfered with subconscious activity normally involved in postural control (Rothermel et al., 2004). This represents negative transfer (Magill & Anderson, 2014).

Of course, negative transfer is generally temporary in motor learning (Magill & Anderson, 2014). Only a longer study looking at what happened to the POS group down the road would determine if this was in fact the case.

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Foot Function and Fascial Lines

In the plantar foot the Deep Front Line (which is our deep stabilizing fascial line) consists of the deep posterior leg compartment including the posterior tibialis, flexor hallucis longus and flexor digitorum longus. For the purpose of this article we are going to focus on the posterior tibialis.

Running posterior to the medial malleolus and along the medial aspect of the foot, the Posterior Tibialis inserts onto the navicular. After attaching to the navicular the Posterior Tibialis fans out and has 9 osseous and fascial attachments which includes:

- every tarsal bone (except the talus)
- every metatarsal (except the 1st)
- peroneus longus tendon
- flexor hallucis brevis muscle

In EBFA education and programming we focus on how short foot specifically strengthens the intrinsic muscles of the foot and activates this stabilizing Deep Front Line.

Short Foot and the Deep Front Line

Short foot is a foot activation exercise that was first introduced by Janda et al.

This exercise targets the abductor hallucis on the medial side of the foot.

Because the abductor hallucis shares a tendon with the flexor hallucis brevis, and the flexor hallucis brevis has an attachment to posterior tibialis – we are able to tap into our Deep Front Line through short foot!

How bunions impact proximal stability has to do with the abductor hallucis and sesamoid position.

Remember we said in a bunion the sesamoids begin to shift laterally away from the head of the 1st metatarsal. As the sesamoids shift laterally they bring along the flexor hallucis brevis muscle (as well as the abductor hallucis!)

This lateral shift of the abductor hallucis pulls the muscle under the 1st metatarsal making it now a sagittal plane muscle (not a transverse plane muscle as it should be). It is this shift in the sesamoids driven by the bunion formation that impedes integrated proximal stability – from the ground up!

As we interfere with Deep Front Line stability, we subsequently interrupt Spiral Line and Lateral Line stability (since they are all integrated through the posterior tibialis muscle). All movement is integrated – integrated movement that starts with the foot!

So what can we do?

Short foot is one of the exercises I recommend to keep the foot strong and integrated with the core proximally. But what do we do if our clients have bunions and we cannot get them to activate the abductor hallucis through short foot?

I often talk about a product called Bunion Bootie.
http://www.bunionbootie.com

This snazzy little product slips over the great toe and pulls it medially, allowing better engagement of short foot. By frequent use of Bunion Bootie – along with short foot exercises, your client will hopefully be able to restore foot to core integration.

Will this correct a bunion?

Not necessarily.

After a certain progression in bunion formation no bunion can be "cured" with exercises and/or toe stretchers. Since a bunion is actually an imbalance around the metatarsal / cuneiform joint or first ray – the only way to re-stabilize proper alignment is through surgery.

However, for those clients who never want surgery but want to remain functionally integrated with their foot – Bunion Bootie and short foot is your answer!

To learn more about the sesamoids, 1st MPJ and fascial lines please check out my other blog on Foot Function & Fascial Lines!

Are you Barefoot Strong?

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EBFA Master Instructor Program

EBFA Hosts Third MI Training of 2014

On November 7 - 9, EBFA hosted it's third Master Instructor Training of 2014. Twelve professionals from across the United States and Spain traveled to sunny California for this three-day training. Upon successful completion of the Master Instructor exam process these professionals will join the current team of 28 Master Instructors throughout the USA, Canada and Asia.

If you are interested in learning more about the EBFA MI Program or applying to join the Team of Leaders in Barefoot Education please visit: http://evidencebasedfitnessacademy.com/master-instructor-program.html

EBFA Barefoot Training Certifications

BARE® is the only barefoot balance training workout that is uniquely designed to improve balance, hip strength and core endurance.

Find out more by visiting http://barefootstrong.com

Fully prepares fitness professionals to better integrate barefoot training and foot fitness into their client's workout and running programming.

For more information visit http://ebfafitness.com/bts-certification.html

Explore the benefits of barefoot training in the rehab setting.

For more information visit http://ebfafitness.com/brx-certification.html

Upcoming Workshops

US & Canada

Sat. December 6, 11am - 5pm
Barefoot Training Specialist® - Manitou Springs, CO
Manitou Bindu
513 Manitou Ave
Manitou Springs, CO 80829

Sat. December 6, 9am - 4pm
Barefoot Training Specialist® - Denver, CO
Project MOVE
4925 S Santa Fe Dr #100
Littleton, CO 80120

Sat. February 7, 9am - 4pm and
Sun. February 8, 9am - 4pm
Movement from the Ground Up - Palm Springs, Florida
Excellent Bodywork
649 US Highway One, Suite 17
North Palm Beach, FL 33408

Sat. February 14, 10am - 5pm and
Sun. February 15, 2015, 10am - 5pm
Foot Strike & Functional Movement - Chicago, IL
MK Lab
20 W Jefferson Ave,
Naperville, IL 60540

Sat. February 21, 10am - 5pm and
Sun. February 22, 10am - 5pm
Movement from the Ground Up - Ramsey, NJ
Kinetic PT
171 Lake Street
Ramsey, NJ 07446

Sat. April 18, 10am - 5pm
BarefootRx® Rehab Specialist - East Brunswick, NJ
American Institute of Alternative Medicine
555 Route 18
East Brunswick, NJ 08816

Fri. May 8, Sat. May 9 and
Sun. May 10, 9am - 6pm
Barefoot Training Summit Denver, CO
Location, TBA

Thurs. June 11, 10am - 5pm
Barefoot Training Specialist® - Phoenix, AZ
FAI Conference
Phoenix, AZ

Fri. June 12
Functional Aging Conference - Phoenix, AZ
FAI Conference
Phoenix, AZ

Thurs. June 25
Western Foot & Ankle Conference Anaheim, CA
Disneyland Hotel & Convention Center
Anaheim, CA

International

Sun. November 30, 9am - 5:30pm
Barefoot Training Specialist® - Busan, Korea
Movement Personal Training Center
2ka 260-2, Seodaeshin-dong,
Seo-ku, Busan, Korea

Sun. December 7, 9am - 5pm
Barefoot Training Specialist® - Petaling Jaya, Malaysia
FIT Malaysia
No. 2-8, 2nd Floor,D19 Business Centre,
Jalan PJU 8/3 Bandar Damansara Perdana,
47820 Petaling Jaya, Selangor, Malaysia

Sat. December 13, 9:30am - 4:30pm
Barefoot Training Specialist® - Kolkata, India
Kolkata, India

Sun. December 14, 9:30am - 4:30pm
Barefoot Training Specialist® - Osaka, Japan
Osaka, Japan

Fri. Jan. 9, 10am - 5pm
Barefoot Training Specialist® - Dubai, U.A.E.
The Warehouse Gym
Umm Suqeim RD, Al Quoz Ind 3
Dubai, United Arab Emirates

Sat. January 10, 10am - 5pm
Movement from the Ground Up - Dubai, U.A.E.
The Warehouse Gym
Umm Suqeim RD, Al Quoz Ind 3
Dubai, U.A.E.

Sun. January 11, 10am - 5pm
BarefootRx® Rehab Specialist - Dubai, U.A.E.
The Warehouse Gym
Umm Suqeim RD, Al Quoz Ind 3
Dubai, U.A.E.

Sun. January 17, 10am - 5pm
BarefootRx® Rehab Specialist - Singapore
Singapore

Sat. January 24, 10:30am - 5:30pm and
Sun. January 25, 10:30am - 5:30pm
Movement from the Ground Up - Brisbane, Australia
Brisbane, Australia

Movement from the Ground Up Workshop

Fitness | Performance | Rehab

Are you ready to take "barefoot" beyond running?

January 9th - 10th, 2015
The Warehouse Gym
Dubai, U.A.E.

January 24th - 25th, 2015
Fitness First
Brisbane, Australia

February 7th - 8th, 2015
Excellent Bodywork
Palm Beach, FL

February 21st - 22nd, 2015
Kinetic PT
Ramsey, NJ

Register NOW!
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