



GROW WITH EBFA™

May, 2014

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

Greetings Health & Fitness Professionals!

We hope this month's issue finds you all in good spirit! As we approach the official start of Summer, EBFA is going full force with the launch of our Master Instructor Program and global outreach in barefoot education.

With workshops being held in over 8 countries, this Summer is the perfect opportunity to finally attend an EBFA Certification workshop. Whether you are in Asia, Europe, South America or the USA - there is a workshop for you!

To find an EBFA workshop near you, visit Page 5 of this month's GROW with EBFA®!

Dr. Emily



Featured Article



Decelerate Faster with Small Nerve Training

-By Dr Emily Splichal

The average adult takes between 5,000 – 8,000 steps per day with 1 to 1.5x body weight in impact forces being transmitted with each step. Often considered bad or harmful, ground reaction forces are actually an important component to functional and efficient movement.

In my workshops I describe efficiency as the ability to take in these impact forces, store them as potential energy and then release them as elastic energy. Much like a kinetic energy curve, the energy in or loading phase would be deceleration, while the energy out or unloading phase would be acceleration.

The efficiency of this deceleration / acceleration dance that
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Featured Barefoot Training Facility



Empowered Wellness - Rochester, MN

Katie Button-Swenson and
Emily Coates-Watkins, BTS-C

In January of this year I had the pleasure of meeting Katie & Emily, two wonderful fitness professionals and the proud owners of Empowered Wellness & Fitness in Rochester, MN.

This barefoot-only studio not only makes fitness a priority, but also community and self-empowerment. With group classes and personal training opportunities, there is something for everyone - including all ages and all fitness levels.

Connect with us



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1. How do Empowered Wellness members and clients respond to the concept of working out barefoot?

Most of our members and clients embrace the concept of working out barefoot, especially when we provide them the biomechanical and physiological reasoning behind it.

We have noticed that some members who initially tell us they have foot issues eventually end up feeling less pain when training barefoot. And once they start, they don't go back! Clients say they feel more powerful in regular group fitness classes with a strong foot foundation.

We've also noticed a lot of improvement in our clients'/members' balance as well.

2. What are future plans for Empowered Wellness to further pursue barefoot movement and programming?

At Empowered Wellness & Fitness Studio we strive to bring scientifically sound, evidence-based fitness programming to our community in order to help our members achieve their goals in a safe and effective way.

We currently incorporate foot fitness into personal and small group training programs, core strengthening group fitness classes and provide barefoot education through our weekly in-studio announcements and social media publications. We hope to bring the rest of our Crew on board with barefoot training so as a team, we can weave foot strengthening exercises and barefoot education into more of our group fitness classes, exercise programs, health and fitness education provided to our members.

To learn more about Empowered Wellness & Fitness Studio or to sign up for the great newsletters please visit www.empoweredwellnessfitness.com.

our foot or body does over 8,000 times a day, 56,000 times a week and 200,000 times a month is limited by one key step – the initiation of deceleration. Aka as initiation of loading response!

Many, if not most, of the injuries I see in my office can be related to a delay in the loading of impact forces or to uncontrolled deceleration. Imagine if we were able to teach this type of patient to initiate deceleration faster - there may be a drastic decrease in their injury risk!

What causes this delay in deceleration?

Why are deceleration or impact-related injuries so prevalent? One word - SHOES!

Why are shoes associated with a delay in the deceleration of impact forces?

We were always taught to believe shoes were beneficial to how our body loads impact forces? Isn't that why there are shock absorbing shoes?

The reason that shoes are associated with a delay in the initiation of impact forces has to do with the science of the bare foot.

The science of the bare foot has to do with the science of neuromuscular control or responses!

The science of neuromuscular responses has to do with how quickly our body gets the information, processes it and responds to it.

So if we are seeing an "epidemic" in delayed deceleration, can we actually train our body to react faster to impact forces? You better believe it!

And guess what it's called? Barefoot training.

Neuromuscular Responses

When we look at the neuromuscular (NM) control of loading and unloading of impact forces, there are two types of responses – Reactive & Pre-active.

Just as the name suggests, a Reactive NM response is when the nervous system is responding to an outside stimulus (such as a stretch reflex to the peroneal tendons when you are about to roll your ankle), processes it in the central nervous system and then sends out a motor response (signal to peroneals to contract concentrically to pull foot out of inversion).

On the flip side, Pre-activation NM responses are when the body is essentially responding to stimuli before the foot even encounters the ground. This anticipatory NM control is based on pre-programmed motor patterns that are stored in the cerebellum or subconscious and has been demonstrated by Nigg et al's research.

When we consider NM responses and the deceleration or loading of impact forces *time* is important. Above I said that the secret to faster deceleration has to do with the bare foot. What is so special about the bare foot and deceleration?

The Science of Small Nerves

In the foot and ankle there are two types of nerves - large nerves & small nerves. The large nerves are found in our muscle tendon junction, ligaments, joint capsules and hairy skin; whereas the small nerves are found in the skin on the bottom of the foot.

What makes the small nerves special is that they are sensitive to stimuli such as texture, skin stretch, pressure and vibration. Vibrations are how your body detects impact forces. So to get an accurate representation of impact forces the small nerves which detect vibration need to be stimulated.

Another super cool feature about these nerves is they are fast!

These small nerves on the bottom of the foot are faster than the large nerves in our ankle ligaments, tendons and joint capsule. In fact it is these small nerves that are also associated with pre-activation training!

So if the nerves on the bottom of our feet are faster than those outside the plantar foot, and these nerves are associated with the pre-activation system - what happens when we put on shoes?

Footwear & Large Nerve Responses

As soon as we slide on our shoes, we dampen our small nerves and enter what is called a large nerve environment. This means

that we now become reliant on our tendons, ligaments and joint capsules to protect our joints and to cue us to decelerate impact forces. This blocking of the small nerves causes a delay in deceleration as it is the small nerves that actually sense the vibrations and our impact forces.

But if we have to wear shoes (outside of a few exceptions) what can we do to tap into these small nerve response and the pre-activation system? Train barefoot!

Barefoot before Shod!

At EBFA we design our programming and Certifications around the concept of barefoot before shod. This means that by stimulating or activating your foot bare - before you put on your shoes - you are priming your nervous system to respond faster!

This primed nervous system translates to faster deceleration, improved stability, decreased risk of injury and more efficient movement!

EBFA has created a series of exercises and movements that can be done for just 5 minutes before you run, workout or start your day!

To learn more about EBFA barefoot education and our workouts please visit:

www.ebfitness.com or www.barefootstrong.com

GUEST ARTICLE

Benefits of Barefoot Squatting

by Kevin C. Moore, www.reembody.me

Squats are cool. Some of you probably disagree with that, but I'm going to do my best to convince you otherwise. For those already onboard the awesome-squat train, I'm about to make your squats safer, smarter and more effective through the geometry of that super-sexy skeleton of yours.

You Are Designed for Squatting

Squatting is not something you have to learn; it's built into our physiology. If I could snap my fingers and suddenly remove all the muscle tissue from a standing, posture-neutral body, (1) that would be horrifying and (2) that body would collapse into what is essentially a squat position before toppling forward.

Improving your squat mechanics is about removing the stuff that's in the way of that collapse so that you can "fall" smoothly, allowing a predetermined set of tissues to store the acceleration due to gravity as eccentric muscular tension. You may have heard before that running is a sort of forward-falling; This is similar.

A Good Squat Starts at Your Feet

Your feet are not simply a couple bricks for wrapping in overpriced, brightly colored foam; they are an amazing combination of hard core load-bearing structures and delicate sensory tissues. Your feet are also the first line of defense between you and gravity,

capable of converting violent gravitational acceleration (21.9 mph/s, by the way, or the approximate acceleration of the 2011 Ferrari 458) into kicking ass and taking names.

Despite this, an abundance of squatters and squat coaches have become obsessed with knees, devoting a ton of their focus to which direction the knees are pointing and exactly which toes they track over. Because of that, what I'm about to say may come as a shock:

It doesn't matter.

From this moment forward you can stop thinking about your knees while you squat. Your knees will do exactly what they are supposed to do, I promise, if we all decided to stop fixating on them.



Getting Your Joints Organized

The knee is what I like to call an "intermediary joint"; situated between the foot and the pelvis, the knee acts as an adapter between the two, translating the direction of force coming from

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the subtalar joint in the foot to be used as propulsion by the hip.

The subtalar joint is the most important joint you didn't know you had; it's sort of like the body's steering wheel. It's just below the ankle, where the calcaneus (heel bone) and the talus (ankle bone) meet. It does two things, roll in and roll out:



LEFT: inversion, MIDDLE: eversion, RIGHT: a dorsiflexed ankle

Eversion (rolling in) is the first component of a squat: the foundation on which everything that follows is based. Without it, what you're doing isn't really a squat so much as it is a slow, repetitive crushing of all your joints. This is because eversion of the subtalar joint is what creates dorsiflexion of the ankle joint.

Proper eversion begets proper dorsiflexion, which, in turn, creates one of the most powerful motions in the human skeletal system: internal rotation of the tibia.



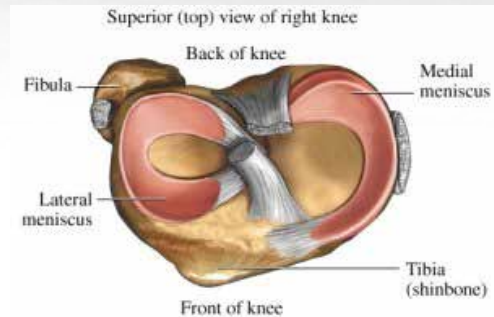
What looks to the untrained eye like the simple hinging of a type-3 lever is actually a coiling action, driven by that initial eversion of the subtalar joint.

The tibia is a full one half of the knee joint. At this stage of our hypothetical squat, it is currently rotating in, and that is exactly what it's supposed to be doing. The other half of the knee joint—the femur—needs to rotate in the opposite direction. Is that surprising?

By following the longitudinal axes of the ligaments, it's clear that this structure is designed to coil: the human knee has much more in common with a spring than a hinge.

And getting that counter-rotation is actually pretty easy. Remember how we rotated the tibias just by everting the heels? Well, we rotate the femurs just by shifting the center of gravity: in this case, forward a couple centimeters.

When you attempt to move your knees, what the vast majority of people do is move their tibias in a horizontal spread. But, since the knee doesn't move horizontally, it interprets that force as a rotation in the wrong direction. The subtalar joint, however, does move horizontally, so what looks like "knees out" is actually subtalar inversion—a lot of it. This overloads the peroneals, disconnects the weight bearing structures of the feet from the ground and further prevents the knee from doing what it is designed to do.



Furthermore, the overstretched peroneals drag on the IT band which, in turn, prevents the femurs from laterally rotating, which locks the center of gravity over the rear foot.

No good squat can come from that.

PUTTING IT TOGETHER

Forget the "knees out" cue—not because "knees out" is wrong, but because what you do when you attempt to follow that instruction isn't what is intended.

To prepare for your squat, actively roll your heels in, flattening the arches of your feet—just a little will do. This will make the knee joint appear to deviate (toward each other). This is totally ok.

Next, while maintaining this new heel/knee position, shift your pelvis forward. You will notice that your knees automatically begin to rotate away from each other. Continue this forward shift until your weight is centered just behind the toe box, and equally between both feet with comfortable contact remaining between the heels and the floor.

Now as you drop, the resulting backward shift of your center of gravity will be countered and absorbed by your subtalar joints and ankles instead of your knees; your glutes will eccentrically store 21.9 mph/s of acceleration and you'll pop back up.

Happy squatting.

Remember, a squat may be a natural human movement, but that doesn't mean that they aren't challenging. Be patient with your practice and use common sense!

Upcoming Workshops

US & Canada

Sat. June 14, 10am - 5pm

BarefootRx® Rehab Specialist - Truckee, CA

Truckee Chiropractic
11464 East Ridge Road
Truckee, CA 96161

Sun. June 15, 12pm - 3pm

Run Injury Free - Truckee, CA

Truckee Chiropractic
11464 East Ridge Road
Truckee, CA 96161

Sat. June 21, 1pm - 6pm

Foot Strike & Functional Movement - Rockville Centre, NY

Sky Athletic Club
310 Merrick Ave.
Rockville Centre, NY 11570

Sun. June 29, 9:30am-12:15pm

Movement From the Ground Up - Chicago, IL

Perform Better Summit
McCormick Place Convention Center
2301 S. Martin Luther King Dr.
Chicago, Illinois 60616

Fri. July 11, 3pm-3:50pm

Barefoot Training for Speed & Agility- Las Vegas, NV

NSCA National Conference
Paris Hotel
3655 S Las Vegas Blvd
Las Vegas, NV 89109

Sun. July 13, 9am-3pm

Barefoot Training Specialist® - Mountain View, CA

Evolution Trainers
2044 Old Middlefield Way
Mountain View, CA 94043

International

Sat. May 24, 8:30am - 5pm

Barefoot Training Specialist® - Kerala, India

Location TBA
Kerala, India

Sat. May 31, 8:30am - 5pm

Barefoot Training Specialist® - Mumbai, India

Location TBA
Mumbai, India

Sat. June 7, 9:30am - 6:30pm

Movement From the Ground Up - Barcelona, Spain

Avinguda Guiera, 6
08290 Cerdanyola del Vallès,
Barcelona, Spain

Sun. June 8, 9:30am - 6:30pm

Movement From the Ground Up - Barcelona, Spain

Avinguda Guiera, 6
08290 Cerdanyola del Vallès,
Barcelona, Spain

Sun. June 8, 9am - 6pm

Barefoot Training Specialist® - Seoul, Korea

KFTA Studio
Seoul, Korea

Sat. June 14, 10am - 5pm

Foot Strike & Functional Movement - Kuala Lumpur, Malaysia

FIT Malaysia
No. 2-8, 2nd Floor,
D19 Business Centre, Jalan PJU 8/3
Bandar Damansara Perdana,
47820 Petaling Jaya, Selangor,
Malaysia 47820

Sat. June 28, 10am - 5pm

Barefoot Training Specialist® - Singapore

Location TBA
Singapore

Sat. July 5, 9am - 5pm

Barefoot Training Specialist® - Manila, Philippines

FIT Manila
Manila, Philippines

Sun. July 6, 9am - 5pm

Barefoot Training Specialist® - Manila, Philippines

FIT Manila
Manila, Philippines

Sat. July 26, 10am - 5pm

BARE® Workout Instructor Training - Kuala Lumpur, Malaysia

FIT Malaysia
No. 2-8, 2nd Floor,
D19 Business Centre, Jalan PJU 8/3
Bandar Damansara Perdana,
47820 Petaling Jaya, Selangor,
Malaysia 47820

Sat. Aug 8, 9am-5pm

Barefoot Training Specialist® - Buenos Aires, Argentina

Valpo Center
Mitre 110
(6450) Pehuajo
Buenos Aires, Argentina

Sun. Aug. 9, 9am-5pm

Barefoot Training Specialist® - Buenos Aires, Argentina

Valpo Center
Mitre 110
(6450) Pehuajo
Buenos Aires, Argentina

Recently Certified

BarefootRx® Certified

Dr Jennifer Barlow - Benicia, CA
John Bauer - Roseville, CA
Daniella Dayoub - Palo Alto, CA
Susan Halet - San Mateo, CA
Marda Mills - Naperville, IL
Dr Samantha Bark - Sunbury, OH
Chong Yee Aw - Singapore
Douglas McAndrew - Singapore
Kimberly Tan - Singapore
Lynn Ong - Singapore
Sukitha Kumari Herath - Singapore

Barefoot Training Specialist® Certified

Katie Button-Swenson - Rochester, MN
Emily Watkins - Rochester, MN
Manish Dagar - Gurgoan, India
Anoop Jain - Gurgoan, India
Pankaj Janghu - Gurgoan, India
Sumant Khachi - Gurgoan, India
Sarfraaz Khan - Gurgoan, India
Mahesh Kumar - Gurgoan, India
Pranav Kant Mishra - Gurgoan, India
Deepu Rajput - Gurgoan, India
Simon Fayers - Kuala Lumpur, Malaysia
Errol Fung - Kuala Lumpur, Malaysia
Karishma Jhaveri - Kuala Lumpur, Malaysia
Ng I Miin - Kuala Lumpur, Malaysia

Upcoming Webinar

Run Injury Free!

Activate the Innate Loading Response

Thursday, June 12, 2014 8pm-9pm EDT

Reserve your Webinar seat now!

Register Here:

<https://www3.gotomeeting.com/register/139999286>

From cardiovascular benefits to weight loss, running is one of the most common forms of exercise. But did you know that over 70% of runners will experience an overuse-related injury?

The cause for these injuries? A delay in the loading response! Join Dr Emily as she explores the innate loading response and how to decrease risk of running-related injuries by tapping into this neuromuscular response system.

Learn simple techniques you can apply on your runners or yourself right away!

Past Archives

Make sure to view all of our past webinars on our Archive

www.youtube.com/ebfafitness

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://evidencebasedfitnessacademy.com/bts-certification.html>



Explore the benefits of barefoot training in the rehab setting.

For more information visit <http://evidencebasedfitnessacademy.com/brx-certification.html>

Not a subscriber? Sign up now to get free monthly education from EBFA!



Leaders in Barefoot Fitness