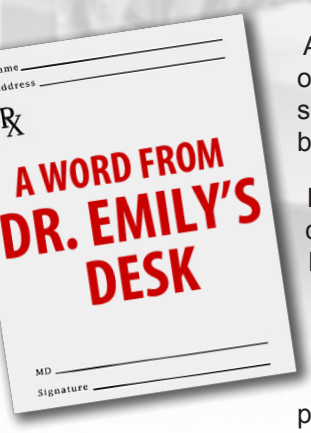
GROW WITH EBFA™

August, 2013

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



Hello Health & Fitness Professionals!

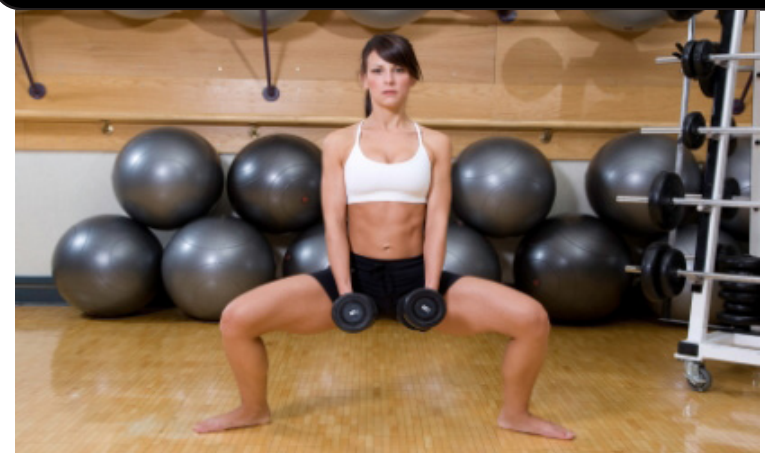
As we begin to ramp up for Back to School and Fall, this is one of the busiest seasons for training camps. From high school to college and beyond, athletes are busy getting their bodies back in shape for Game Day.

Performance and injury prevention are at the forefront of the coaches programming as these athletes return to practice. In this month's issue of GROW, we explore the many benefits of barefoot training in the strength & conditioning industry.

Could barefoot training play a role in injury prevention and performance? Find out below!

Dr. Emily

Featured Article



Barefoot Training: The Secret to Power?

By Dr Emily Splichal

Power. The ability to generate the greatest amount of force in the shortest amount of time (NASM).

When we think of a sprinter coming out of the starter blocks, or a muay thai fighter performing a roundhouse kick we typically look at their hips and glutes as the center of power generation. But as closed chain movements with the foot as

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Featured

Barefoot Training Specialist®

Abby Thwing

Portland, Oregon

1. How has the Barefoot Training Specialist® Program changed the way you look at human movement and corrective exercise?

As a result of the Barefoot Training Specialist® Program I have gained a greater respect and fascination for the beautiful complexity of not only the synthesis of the human body, but also the anatomy of the foot and ankle.

Often ignored by many, the foot and ankle play such an integral role to how the rest of the body works most optimally and correctly. I feel like my eyes have been opened, and now when people approach me after my fitness classes with questions about certain issues, I immediately start asking them questions from "the ground up". It can be a little annoying now too though, because whenever I'm in a public place,

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I start watching the way people walk and start trying to identify their foot type...and pondering things like, “Hmmm, valgus knees... I wonder if their hips hurt”.

2. Overall how have your clients responded to the assessments and programming taught in the Barefoot Training Specialist® Program? Any specific client results you want to share?

As a group exercise instructor, I have introduced to my participants the importance and cognizance of the movement and strength of the feet and ankles. When I talk to people on a one-on-one basis, so many of them agree that the tenets we learned in the program make so much sense, and they seem really open to embracing the concepts and learning more.

Also, I wear Vibrams as I work out, and when people ask me more about why I wear the FiveFinger shoes, the BTS Program has giving me a more scientific knowledge base from which to provide people with an educated answer.

3. Would you recommend the Barefoot Training Specialist® Program to your colleagues? Why or why not?

I definitely would recommend the Barefoot Training Specialist® Program to my colleagues. So often I overhear other trainers give advice to their clients that I feel could use a little “barefoot update”, which may really help these individuals improve their performance, change the way they move, or find relief from pain.

I think the information presented during the workshop gives people in the fitness industry a fresh set of eyes through which to see and analyze their clients, understand the way they move, and subsequently tools to maximize their potential. I’m so glad that this information is becoming more readily available and widely known, and I’m excited to keep spreading the word!

the only contact point between the body and the ground, could the foot play a key role in the amount of power generated?

When I first started exploring the benefits of barefoot balance training, my initial draw was to the kinematic changes that this training technique had on lower extremity alignment. However, the more I began to apply this training technique the more I began to see other benefits. One of the most fascinating benefits noted was in muscle recruitment and activation patterns - or in other words neuromuscular activation!

From a subjective perspective, clients and athletes were associating their barefoot training with increased squat strength, faster run times and decreased low back pain.

Were these benefits only related to improved lower extremity kinematic alignment?

Or could it have been that they were recruiting more muscles fibers due to to enhanced muscle activation pathways?

As I began to investigate the concept of neuromuscular activation and muscle recruitment patterns, I came across the work of Dr Benno Nigg. Nigg is the Co-Director of the Human Performance Laboratory and a biomechanics professor at University of Calgary in Alberta, Canada. He has spent more than 40 years researching human locomotion as it relates to shoes, orthotics and sports surfaces.

Nigg has done numerous research studies on the concept of plantar foot sensation as it relates to muscle activation patterns during gait. What Nigg found was that the skin on the bottom of the foot acts like a “load sensor”, providing critical information on impact patterns, joint kinematics and motor control.

Nigg found that as pressure shifted to different parts of the foot, reflex-type activation patterns occur to the muscle of the feet and lower extremity. One of the most fascinating of these activation patterns occurs when we shift forward onto the ball of the foot and the tibial nerve is stimulated. This tibial nerve stimulation activated the gastrocnemius and soleus muscle. What’s cool though, is that this tibial nerve stimulation not only activated the calves - but also the extensor activity of the rectus femoris.

This means that plantar cutaneous feedback does not only influence the muscles that surround the foot, but can activate those of the hip and thigh. Another researcher who has demonstrated the association between plantar foot stimulation and proximal muscle activation was Dr Vladimir Janda.

Through his research, Dr Janda demonstrated that upon proper foot activation (i.e. short foot), there was a reflex co-activation in the deep hip stabilizers and the pelvic floor. He further supported the benefit of peripheral proprioceptive stimulation for proximal stability in all closed chain functional movements.

Both Nigg and Janda support that muscle activation pathways of the human body are highly interconnected - and truly do begin with

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the foot - or more specifically with the plantar foot.

So perhaps the benefit of barefoot training is more that just strengthening the muscles that maintain proper foot posture and lower extremity alignment. Perhaps it has to do more with muscle activation patterns and proximal reflex pathways.

If fitness professionals and coaches were to integrate barefoot training techniques into their client and athlete programming, would they note an increase in speed, agility and quickness? Would they note an increase in strength? And will they note a decrease in injuries?

It is concepts such as this, that led to the advent of EBFA's barefoot training courses and research in barefoot science.

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To learn more about the role of barefoot training in power and performance please check out EBFA's newest course:

"Barefoot Training for Power & Agility".

Coming soon in NYC, San Francisco, New Jersey & India!

Featured Evidence Based Exercise

Toe Spread

From minimalist movement to barefoot training, one of the greatest benefits of getting out of the orthotics and motion controlled shoes is the activation of the often lazy plantar foot muscles.

As the health and fitness industry begins to embrace the many benefits of intrinsic foot strength, researchers are starting to question which foot exercises may be the most beneficial. Or in other words, which foot exercises could we consider evidence-based.

As we look at the intrinsic foot musculature, the most important or most influential intrinsic muscle would have to be the abductor hallucis. Originating on the plantar medial aspect of the calcaneus and inserting into the proximal phalynx of the great toe, this plantar muscle abducts the hallux, creates an inversion moment to the subtalar joint and supports the navicular bone.

I always talk about the short foot exercise as the most effective exercise to target this muscle, but a recent 2013 study by Kim et al. questions the benefit of short foot – and actually explores the benefit of perhaps another exercise. The exercise in question is referred to as toe-spread.

In the study Kim et al. demonstrated that when performing the toe spread exercise, there was an almost 45% greater muscle recruitment of the abductor hallucis. Kim et al. further found that the ability to perform a toe-spread exercise was limited in those subjects with a bunion. It is important to note that those subjects with a bunion were able to perform short foot.

Why was this difference observed? Well in those patients with a bunion deformity, the associated muscle imbalance actually causes the abductor hallucis muscle to slip plantar to the first metatarsal – this means this muscle is no longer an abductor of the hallux but a flexor.

This is important to note as many of our clients, patients and athletes may have a bunion deformity and we need to choose the most appropriate exercise to target their foot type and abductor hallucis alignment. It should be noted that in subjects with a bunion, the abductor hallucis can still function as a subtalar joint invertor and supporter of the navicular bone.

Reference:

Kim et al. Comparison of muscle activities of the abductor hallucis and adductor hallucis between the short foot and toe-spread out exercise in subjects with mild hallux valgus. J Back Musc Rehab, 2013. 26: 163-168.

Guest Interview

Barefoot Training and Athletic Performance – *A Coach's Perspective*

Imagine a training technique so diverse that it can benefit everyone from participants in a group exercise class and patients in a rehab setting to athletes looking to improve their speed and agility.

Barefoot training is one of the best examples of a training technique where the benefits cross all aspects of health, fitness and performance.

As EBFA paves the way in barefoot education and barefoot programming it is our mission to not only education fitness professionals but also cross over into the medical and sports performance industries.

This year EBFA had the opportunity to present on barefoot science at the 46th Annual NSCA National Convention and the Okanagan Strength & Conditioning Conference. It was very encouraging to hear the coach's perspectives and excitement in the application of barefoot science with their athletes.

As EBFA continues to spread education to the strength and conditioning industry, we wanted to get catch up with two of our favorite coaches and fans of barefoot training with their athletes – Chris Flo and Michael Torres.

Hi Coach Flo and Torres. Thank you so much for taking the time to talk barefoot with EBFA! As we explore the benefit of barefoot training as a form of neuromuscular training for athletes, it seems almost natural for the technique to creep it's way into the training floors.

Do either of you currently apply barefoot training techniquees with your athletes?

Coach Flo: All our athletes train without shoes on.

The reason we do this is because the absence of shoes allows us to see any compensations within the ankle and foot. Many of our athletes will preset collapsing arches or flat feet during our assessment. We will notice that due to the dropping arch they will increase the valgus stress on the knee causing pain along the medial patella and or mcl.

This is just one of many biomechanical deviations we find by having them train without shoes. True story, many of my athletes now come to sessions in just flip flops because they know they won't be needing shoes.

Coach Torres: I have been integrating barefoot training with athletes for some time now, the reason being first and foremost the simplicity of their ability to feel how their own body responds to various stress.

As I learned more through research and education such as the courses provided by the Evidence Based Fitness Academy, I found it more and more critical to engage training in this way.

In the performance world coaches often talk about training from the ground up and understanding force production, however they place a layer of preverbial noise between the athlete and the ground so I don't feel they can truly appreciate the relationships between the body and ground.

That's awesome that you both apply barefoot training with your athletes. I knew I liked you both for a reason! Just kidding.

So as you both begin to integrate barefoot training with your athletes – how have they been responding? Do they embrace this change?

Coach Torres: Athletes in general often start with many questions on why I have them take off their socks and shoes, but usually the questions are answered by their own awareness just in completing basic balance exercises or the first time they add a significant load through the body.

I have seen some dramatic changes with having barefoot training as a foundation to working with athletes - specifically over the course of two years as a Head Coach for a High School Track and Field team. We reduced non-compete injuries by over 60% and produced back-to-back seasons with 100% personal records set, numerous state qualifying appearances, and other areas of achievement.

I personally attribute the success to not only having a well-balanced training program, but demanding awareness of foot health and barefoot training.

Coach Flo: One of the number 1 things my athletes say is that they feel their feet gripping the inside of their shoes when

LEADERS IN BAREFOOT FITNESS

they play sports now. They also say that they feel more balanced when cutting or running.

I don't know if this is because of the training without shoes, the balance work we do at Flo, or a combo of both. I'd say its the combo but their is no way to test it really.

The same holds true with feeling stronger and faster, I feel it's a combo of the barefoot training and good programming on our part.

These are exactly the benefits we are promoting to coaches – that there is a benefit to being more aware from the ground up.

Do you see barefoot training concepts becoming more prevalent in the sports performance and strength conditioning industry?

Coach Flo: I can see barefoot training becoming big but only in small studios. Unfortunately many of the big facilities will see it as a hazard. If an athlete drops a weight on their foot it can be an insurance nightmare.

With the proper education I believe we can make athletes understand the importance of using their feet to add to their performance. If I can be totally honest, I think if someone like LeBron James or some big time sports star said that barefoot training was their key to success it would create boost in the amount of people doing it.

Coach Torres: In the future I hope that others like myself, my company Integrated Performance, and my colleagues that are currently utilizing barefoot training as part of a high performance program will lead the change in the concept of barefoot science and performance training.

There is no question that barefoot training is not just beneficial to sport performance but a critical element that should be integrated into programming for optimal results.

I feel a lack of barefoot training sets the athlete up for a higher injury risk, so no matter how great your program is, if the athlete gets hurt (especially in a non- contact movement) then what good is the program really?

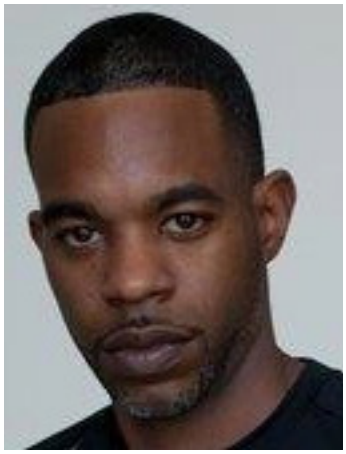
Great, thank you both so much for your time and sharing with EBFA your perspective on barefoot training and sports conditioning.

To learn more about the benefits of barefoot training and athletic performance, please check out EBFA's course **Barefoot Training for Power & Agility.**

Special thank you to Coach Chris Flores of Flo Fitness and Michael Torres of Integrated Performance Institute.

Chris Flo is the owner of Flo Fitness in Westfield, NJ a private workout facility where student athletes can train, secure in the knowledge that they're in good hands. ww.flofitnessllc.com

Michael Torres is a USA Track and Field Certified Coach having worked with athletes of all ages, as well serves as a consultant for professional athletes on the US Olympic team. www.iperformanceinstitute.com



Upcoming Workshops

US & Canada

Fri. Sept 20, 2013 1:30pm-5:30pm
Barefoot Rx - Evidence-Based Barefoot Rehab Techniques - NYC, NY
Kinected
151 W. 19th St, 2nd Fl
New York, NY

Sat. Sept 21, 2013 1pm-4pm
Barefoot Training for Power & Agility - NYC, NY
Lucille Roberts
50 East 42nd Street
New York, NY 10017

Fri. Sept 27, 2013 2:45pm-4:15pm
Bells and Bare Feet - Marina del Ray, CA
MINDBODY FitPro
Marriott Hotel
4100 Admiralty Way
Marina Del Rey, CA 90292

Fri. Sept 27, 2013 4:30pm-6pm
The Sixth Sense of Fitness - Rethinking Proprioceptive Training - Marina Del Ray, CA
MINDBODY FitPro
Marriott Hotel
4100 Admiralty Way
Marina Del Rey, CA 90292

Sat. Sept 28, 201310am-1pm
Barefoot Training for Power & Agility - Seattle, WA
Elite Performance Center
413 Fairview Ave N
Seattle, WA 98109

Sun. Sept 29, 2013 12pm-3pm
Barefoot Training for Power & Agility - San Mateo, CA
San Mateo Athletic Club
Bldg. 5, 1700 W. Hillsdale Blvd.
San Mateo, California 94402

International

Sat. Sept 7, 2013 9am-5pm
Barefoot Training Specialist® - Sweden
SALT Studio
Hotellvägen 1
Saltsjobaden, Sweden 133 36
wlundqvist@hotmail.com

Sun. Sept 8, 2013 9am-5pm
Barefoot Training Specialist® - Netherlands
Mindful Motion Center
Bezuidenhoutseweg 30
2594AV, Den Haag, Netherlands
www.mindfulmotioncenter.com

Fri. Oct 11, 2013 11:45am-12:45pm
Science of the Single Leg Stance
Asia Fitness Convention 2013
Bangkok, Thailand
www.asia-fitness.com

Fri. Oct. 11, 2013 3pm-4:30pm
Watch that Walk Functional Gait Assessment
Asia Fitness Convention 2013
Bangkok, Thailand
www.asia-fitness.com

Fri. Oct. 11, 2013 5pm-6pm
The Sixth Sense of Fitness Rethinking Proprioceptive Training
Asia Fitness Convention 2013
Bangkok, Thailand
www.asia-fitness.com

Sat. Oct. 12, 2013 4:45pm-6pm
Functional Foot & Ankle
Asia Fitness Convention 2013
Bangkok, Thailand
www.asia-fitness.com

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EBFA in the Community

EBFA joins Xero Shoes® for a free educational webinar!

Dr Emily and Steven Sashen got together for a Live Q & A webinar. They answered questions about preventing barefoot running injuries, the transition to barefoot or minimalist running and more.

If you'd like to watch it, go to http://xeroshoes.com/ask-the-barefoot-experts/?live to view this valuable event.

Recently Certified

Barefoot Training Specialist®

Dr. Jacob D. Perkins- Bellevue, WA

Niko Lazarakis - Seattle, WA

Adina DeSantis- Seattle, WA

Karlie Steiner-Bailey- Seattle, WA

Pratik Rao- Bangalore, India

Mohammad Adil- New Delhi, India

Ahmad Nasir- New Delhi, India

Riesal Mikael Idries- Singapore

Upcoming Webinar

Primal Rehab for Reflexive Core Stability

Thursday, September 12, 2013 8PM - 9PM EDT

Reserve your Webinar seat now!

Register Here: https://www3.gotomeeting.com/register/334553542

Join Stop Chasing Pain's Dr Perry Nickelston as he explores how dysfunctional sequencing of the intrinsic core impacts choreography of movement and contributes to musculoskeletal pain.

Learn the role of the diaphragm, pelvic floor, transverse abdominals, multifidi in IAP stabilization, as well as the integration of the thoracolumbar fascia, internal obliques and deep neck flexors to lumbo pelvic hip complex mechanics.

Understand how to use ground-based neuro-developmental patterns to reset core strength and take the EMERGENCY BRAKE off movement!

Past Archives

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www.youtube.com/ebfafitness

EBFA Photo Gallery

Join EBFA at MINDBODY FitPro September 27-29, 2013!

For more information visit http://www.mindbodyfitpro.com/

Join EBFA October 18-22, 2013 at Pilates Empowerment Summit!

For more information http://www.pilatesempowermentsummit.com/

Join EBFA at Asia Fitness Convention October 11-13, 2013!

For more information visit asia-fitness.com

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