



Course Title: Barefoot Balance Training:
Improve Posture and Build Strength with Barefoot Science

Produced by: **Fitness Learning Systems**
1012 Harrison Ave #3 Harrison OH 45030
www.fitnesslearningsystems.com 1-888-221-1612

Course Type: **e-Learning Home Study**

Credit hours: IACET (International Association for Continuing Education and Training) 0.3
(3 Hours) Approved and Accepted by several additional organizations.

Author:

Dr. Emily Splichal, DPM, MS, MPH, CPT
Evidence Based Fitness Academy

Dr Emily Splichal, Podiatrist and Human Movement Specialist, is the Founder of the Evidence Based Fitness Academy. With over 10 years in the fitness industry, Dr Splichal has dedicated her medical career towards studying postural alignment and human movement as it relates to foot posture and foot strength. Dr Splichal is expert lecturer and TV personality with appearances on Oprah Winfrey, The Today Show & Good Day NY. Dr Splichal is sought after for her expertise in barefoot training, foot health and postural alignment.

Degrees/Certifications: Doctor of Podiatry Medicine (DPM), Master's in Public Health (Fall Reduction), M.S. Human Movement, NASM-CPT, ACSM- Exercise Specialist

Course Summary:

Welcome to one of the Evidence Based Fitness Academy's most popular workshops now available for Home Study. Join Dr. Emily Splichal as she explores the science of balance training combined with barefoot training, bringing you one of the most effective techniques for correcting movement dysfunction, improving athletic performance, and building total body strength.

This course will review the integrated function between the foot and ankle distally and the hip proximally, the science behind the single leg stance and the benefits of training without shoes. Like all courses from the Evidence Based Fitness Academy, all techniques taught within this course are based on the latest research and maintain an evidence-based approach.

Objectives:

After completing this course you will be able to:

1. Discuss the importance of balance and barefoot training.
2. Describe 2 factors necessary to integrate barefoot balance training into a client's program.
3. Identify 4 bones and 2 joints associated with the rearfoot.
4. Discuss the role of 6 extrinsic muscles and 5 intrinsic muscles in influencing the subtalar, ankle, and foot joints.
5. Explain 2 kinematic influences on foot, ankle, and hip function.
6. Identify and discuss 4 muscles/muscle groups associated with the hip and how these muscles could affect dysfunction in the hips and feet.
7. Describe how single leg stance training affects stabilization, function, activation and balance in the foot, knee, hip and pelvis.
8. Discuss the role of neuromuscular influences, maintaining balance, plantar receptor sensitivity, and training surfaces on barefoot balance training.
9. Explain how to safely and effectively perform a neuromuscular warm-up, 5 static stabilization exercises, and 6 dynamic stabilization exercises for barefoot balance training.

Outline:

Fast Track Menu

Why is Balance Training Important?

Why is Barefoot Training Important?

The Secret Behind Barefoot Balance Training

Lower Extremity Kinematics

Bones in Rearfoot

Joints in Rearfoot

Muscular Anatomy

Extrinsic Muscles

Tibialis Anterior

Peroneus Brevis / Longus

Gastrocnemius / Soleus

Tibialis Posterior

Intrinsic Muscles

Abductor Hallucis

Flexor Digitorum Brevis

Quadratus Plantae

Interossei

Plantar Fascia

Kinematic Influences: Coupled Motion

The Hip

Tensor Facia Latae (TFL)

Adductors

Gluteus Medius

Gluteus Maximus

Barefoot Balance Training Considerations

Kinematic Influences: Excessive ROM

The Science of the Single Leg Stance

Foot

Knee

Hip

Pelvis

The Science of Barefoot Balance Training
 Neuromuscular Influences
 Maintaining Balance
 Plantar Receptor Sensitivity
 Training Surface
Barefoot Balance Program Design
 Neuromuscular Warm-Up
 Static Stabilization
 Single Leg Stance: Leg Abduction
 Single Leg Stance: Glute Pendulum
 Single Leg Stance: Single Leg Squat
 Single Leg Stance: Floor Tap
 Plie' Squat to Single Leg Stance
 Dynamic Stabilization
 Side Lunge to Single Leg Stance
 Side Lunge into Leg Abduction
 Bowler's Squat to Single Leg Stance
 Reverse Lunge to Single Leg Stance
 Reverse Lunge into Floor Tap
 Plie' Squat Single Leg Stance into Side Lunge
Sample Barefoot Balance Program

Bibliography:

1. DiStefano, L. Gluteal muscle activation during common therapeutic exercises. *J Ortho & Sports Physical Therapy*, 2009. 39(7): 532-540.
2. Geraci, MC. Evidence-based treatment of hip and pelvis injuries in runners. *Phys Med Rehabil Clin N Am*, 2005. 16(3): 711-47.
3. Guilliani, J. Barefoot-simulating footwear and associated with metatarsal stress injury in 2 runners. *Orthopedics*, 2011. 34(7): 320-323.
4. Ireland, M. et al. Hip strength in females with and without patellofemoral pain. *JOSPT*, 2003. 33(11): 671-676.
5. Lieberman, DE et al. Foot strike patterns and collision forces in habitually barefoot versus shod runners. *Nature*, 2010. 463(7280): 531-535.
6. Madhavan, S. et al. Movement accuracy changes muscle activation strategies in female subjects during a novel single-leg weight-bearing task. *J Injury Function & Rehab*, 2009. 1(4): 319-328.
7. McPoil, T.G. et al. Relationship between neutral subtalar joint position and pattern of rearfoot motion during walking. *Foot and Ankle*, 1994. 115, 141-145.
8. Nawoczenski, D. The effect of foot structure on the three-dimensional kinematic coupling behavior of leg and rearfoot. *Phys Therapy*, 1998. 78(4): 404-416.
9. Nilsson, J. Ground reaction forces at different speeds of human walking and running. *Acta Physiol Scand*, 1989. 136(2): 217-227.
10. Robbins, S. Running-related injury prevention through innate impact-moderating behavior. *Medicine and Science in Sports and Exercise*, 1989. 21(2): 130-137.
11. Robbins, S. Sensory attenuation induced by modern athletic footwear. *J Testing and Evaluation*, 1988. July: 412-416
12. Robbins, S. Running-related injury prevention through barefoot adaptations. *Med Sci Sports Med*, 1987. 19(2): 148-156.
13. Sekizawa, K. Effects of shoe sole thickness on joint position sense. *Gait & Posture*, 2001. 13(3): 221-228.

14. Snyder, K. et al. Resistance training is accompanied by increases in hip strength and change in lower extremity biomechanics during running. *Clin Biomech*, 2007. 24- 26-34.
15. Tiberio, D. The effect of excessive subtalar joint pronation on patellofemoral mechanics: a theoretical model. *Journal of Orthopaedic and Sports Physical Therapy*, 1987. 99: 160-165.
16. Wen, Dennis. Risk factors for overuse injuries in runners. *Current sports medicine reports*, 2007. 6(5): 307-313.
17. Williams, D. Arch structure and injury patterns among runners. *Clinical Biomechanics*, 2001. 16: 341-347.