



Title:

Certified Running Gait Analyst: Level I

Course Description:

Running has one of the highest injury rates for any sport with upwards of 80%^{1,3} of runners experiencing an injury each year. Due to these high injury rates, it is likely that most outpatient sports and orthopedic rehabilitation professionals will encounter running patients in their career.

To treat a runner you must look at them as a whole athlete. It takes more than resolving impairments to get them back to their sport. Changes in gait⁶ can play a significant role in injury onset. This course focuses on five of the most common running gait impairments and advanced gait re-training^{2,7,8,9,10} and training principles to address these common impairments in running form.

Course participants will learn how to set themselves apart by developing complete plans of care for running athletes by covering common impairments, gait modifications, gait re-training, training principles, injury prevention, and equipment recommendations.

Course Learning Objectives:

1. By the end of the course, the participant will be able to infer 3 reasons why runners develop Running Related Musculoskeletal Injuries
2. By the end of the course, the participant will be able to interpret ACE Running movement screen results and prescribe exercises based off of individualized results
3. By the end of the course, the participant will be able to interpret ACE Running Foot screen results and prescribe exercises based off of individualized results
4. By the end of the course, the participant will be able to interpret ACE Running motor control screen results and prescribe exercises based off of individualized results
5. By the end of the course, the participant will develop a plan of care utilizing presented motor learning principles and tools to gait re-train a patient for each of the 5 classifications of running gait deviations discussed in this course
6. By the end of the course, the participant will be able to infer 2 of the most common mobility restrictions contributing to collapsing running gait deviation
7. By the end of the course, the participant will be able to infer 3 of the most common motor control impairments contributing to collapsing running gait deviation
8. By the end of the course, the participant will be able to infer the most common mobility restriction contributing to over striding running gait deviation
9. By the end of the course, the participant will be able to infer 2 of the most common motor control impairments contributing to collapsing running gait deviation
10. By the end of the course, the participant will be able to infer the most common mobility restriction contributing to Bouncer running gait deviation
11. By the end of the course, the participant will be able to infer 2 of the most common motor control impairments contributing to Bouncer running gait deviation
12. By the end of the course, the participant will be able to infer 2 of the most common mobility restrictions contributing to weaver running gait deviation



13. By the end of the course, the participant will be able to infer 3 of the most common motor control impairments contributing to weaver running gait deviation
14. By the end of the course, the participant will be able to infer 2 of the most common mobility restrictions contributing to collapsing running gait deviation
15. By the end of the course, the participant will be able to infer 3 of the most common motor control impairments contributing to collapsing running gait deviation
16. By the end of the course, the participant will be able to infer 3 of the most common mobility restrictions contributing to Glute Amnesiac running gait deviation
17. By the end of the course, the participant will be able to infer 4 of the most common motor control impairments contributing to Glute Amnesiac running gait deviation
18. By the end of the course, the participant will develop a comprehensive gait re-training program for a runner in each of the 5 common running gait deviation categories based upon gait analysis data

Presentation Type: Live Course – 17 hours

References:

1. Dingenen, Bart, et al. "Are two-dimensional measured frontal plane angles related to three-dimensional measured kinematic profiles during running?." *Physical Therapy in Sport* (2017).
2. Van Gent RN, Siem D, van Middelkoop M, van Os AG, Bierma-Zeinstra SMA, Koes BW. Incidence and determinants of lower extremity running injuries in long distance runners: a systematic review. *Br J Sports Med*. 2007;41(8):469-80; doi:10.1136/bjism.2006.033548.
3. Heiderscheid BC, Chumanov ES, Michalski MP, Wille CM, Ryan MB. Effects of step rate manipulation on joint mechanics during running. *Med Sci Sports Exerc*. 2011;43(2):296-302. doi:10.1249/MSS.0b013e3181e3181e4.
4. Lun V, Meeuwisse WH, Stergiou P, Stefanyshyn D. Relation between running injury and static lower limb alignment in recreational runners. *Br J Sports Med*. 2004;38(5):576-80. doi:10.1136/bjism.2003.005488.
5. Novacheck, Tom F. "The biomechanics of running." *Gait & posture* 7.1 (1998): 77-95.
6. Ristolainen, L., et al. "Training-related risk factors in the etiology of overuse injuries in endurance sports." *The Journal of sports medicine and physical fitness* 54.1 (2014): 78-87.
7. Wille CM, Lenhart RL, Wang S, Thelen DG, Heiderscheid BC. Ability of sagittal kinematic variables to estimate ground reaction forces and joint kinetics in running. *J Orthop Sports Phys Ther*. 2014;44(10):825-30. doi:10.2519/jospt.2014.5367.
8. Willson JD, Sharpee R, Meardon SA, Kernozek TW. Effects of step length on patellofemoral joint stress in female runners with and without patellofemoral pain. *Clin Biomech (Bristol, Avon)*. 2014;29(3):243-7. doi:10.1016/j.clinbiomech.2013.12.016.
9. Willy, R. W., et al. "In-field gait retraining and mobile monitoring to address running biomechanics associated with tibial stress fracture." *Scandinavian journal of medicine & science in sports* 26.2 (2016): 197-205.
10. Willy RW, Davis IS. Varied response to mirror gait retraining of gluteus medius control, hip kinematics, pain, and function in 2 female runners with patellofemoral pain. *J Orthop Sports Phys Ther*. 2013;43(12):864-74. doi:10.2519/jospt.2013.4516.
11. Willy RW, Scholz JP, Davis IS. Mirror gait retraining for the treatment of patellofemoral pain in female runners. *Clin Biomech (Bristol, Avon)*. 2012;27(10):1045-51.



Timed Outline:

Certified Running Gait Analyst Day 1	Segment	Start Time
Introduction <ul style="list-style-type: none">• Why People get Injured<ul style="list-style-type: none">○ Physiological○ Technique○ Over-training• Classification Review• Making the decision of when to assess and correct gait	60 min	8:00am
ACE Running Movement Screen –Functional Movement Lab and lecture <ul style="list-style-type: none">• Evidence Based Movement Screens• Regional Interdependence• Top tier movements• Corrective exercises	210 min	9:00am
Lunch	60 min	12:30pm
ACE Running Movement Screen – Foot and Stability Lab and lecture <ul style="list-style-type: none">• Foot Assessment• Stability Assessment• Corrective Exercises	90 min	1:30pm
Gait Retraining and Run Practice <ul style="list-style-type: none">• Motor learning principles• Tools of the trade (paper towel rolls, metronomes, tech solutions)• Creating Run Practices	30 min	3:00pm
Over-strider <ul style="list-style-type: none">• Common Impairments<ul style="list-style-type: none">○ Mobility○ Motor Control• Corrective Programs<ul style="list-style-type: none">○ Mobility○ Motor Control• Common Running Impairments• Specific Gait Re-training techniques	60 min	3:30pm
Live Case Study 1 <ul style="list-style-type: none">• Evaluate Running• Gait re-training plan	90 min	4:30pm
Total	9 hours	6:00pm



Certified Running Gait Analyst Day 2	Segment	Time
Movement Screen Review <ul style="list-style-type: none"> • Lab practice full screen 	30 min	8:00am
Collapser <ul style="list-style-type: none"> • Common Impairments <ul style="list-style-type: none"> ○ Mobility ○ Motor Control • Corrective Programs <ul style="list-style-type: none"> ○ Mobility ○ Motor Control • Common Running Impairments • Specific Gait Re-training techniques 	90 min	8:30am
Weaver <ul style="list-style-type: none"> • Common Impairments <ul style="list-style-type: none"> ○ Mobility ○ Motor Control • Corrective Programs <ul style="list-style-type: none"> ○ Mobility ○ Motor Control • Common Running Impairments • Specific Gait Re-training techniques 	60 min	10:00am
Live Case Study 2 <ul style="list-style-type: none"> • Evaluate Running • Gait re-training plan • Comparative analysis for gait re-training 	90 min	11:00am
Lunch	60 min	12:30pm
Bouncer <ul style="list-style-type: none"> • Common Impairments <ul style="list-style-type: none"> ○ Mobility ○ Motor Control • Corrective Programs <ul style="list-style-type: none"> ○ Mobility ○ Motor Control • Common Running Impairments • Specific Gait Re-training techniques 	60 min	1:30pm
Glute Amnesiac <ul style="list-style-type: none"> • Common Impairments <ul style="list-style-type: none"> ○ Mobility ○ Motor Control • Corrective Programs <ul style="list-style-type: none"> ○ Mobility ○ Motor Control • Common Running Impairments • Specific Gait Re-training techniques 	60 min	2:30pm
Live Case Study 3 <ul style="list-style-type: none"> • Evaluate Running • Gait Re-training plan 	90 min	3:30pm
Total	8 hours	5:00pm



Speaker Information:

- *Doug Adams, PT, DPT, SCS, OCS, CSCS* *ACE Running Wilmington, DE*
Doug Adams is a Physical Therapist who graduated from Auburn University with an undergraduate degree in Exercise Science and then completed his Doctorate of Physical Therapy in 2008 from the University of Delaware. He went on to complete a sports residency at the University of Delaware, becoming a Board Certified Specialist. Doug's interests in Physical Therapy include ACLs, Swimmer's Shoulder, Pre-Participation Screens, Return to Play Testing, and Leadership/mentorship. He has lectured on these topics both locally and nationally, as well as published on ACLs. Doug, along with his colleague and brother-in-law Ari Kaplan, are the Co-Founders of the Association of Clinical Excellence, an education company focused on building the physical therapy community and developing the complete professional. The Association of Clinical Excellence (A.C.E.) has three primary areas of developmental focus: Leadership, Clinical Skills, and Personal Mastery. He co-published his first book, *Modern Day Management: A Short Guide to Successful Meetings* in March of 2015.
- *Scott Greenberg PT, DPT, CSCS* *UF Student Health Care Gainesville, FL*
Scott graduated from the University of Florida with a degree in Exercise and Sports Science in 1996 and then earned his Doctorate in Physical Therapy in 1999 from Slippery Rock University. Since that time, Scott has specialized in sports medicine with an emphasis on running-related injuries. Currently, Scott acts as the Site Coordinator for UF Health Rehab at the UF Student Health Care Center and Haile Plantation locations where he is responsible for providing the rehabilitation to the UF student athletes and the University of Florida Running Medicine Clinic. He is also the running injury and biomechanics consultant to the University of Florida Track and Cross Country teams while also providing the foot and ankle care to the University of Florida Athletic Association athletes. He has spent time working with youth athletes to improve their speed and agility in a sport specific manner. He is a Certified Endurance Running Specialist through USTFCCA, a certified level 1 coach through USA Track and Field as well as a Certified Strength and Conditioning Specialist. Scott is a nationally recognized lecturer in the area of running medicine. Scott is also the Vice Chairman of the Sports Physical Therapy Section's Running Special Interest Group. He currently resides in Gainesville, Florida with his wife and two daughters.

Teaching and Evaluation Methods:

- Video based lectures will be used to present evidence based information to course participants
- A series of Case Studies will be used to discuss real world application of the concepts presented in the lectures
- A comprehensive review of the most current literature will be discussed with the use of visuals and graphics to relay the information in an approachable fashion

Recommended Participant Level:

Beginner to Intermediate level