



Title: Return to Running

Duration: 3 hours

Exam requirements: assessment

Number of CEUs: 3 hours

Opportunity for interaction with instructors: Discussion boards through comments section

Title:

Return to Running

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.

This is an online 3 hour course and covers topics from load progression, gait retraining, individual modification, and return to sprinting. The information from this course applies to any athlete that runs.

Course Learning Objectives:

1. By the end of the course, the participant will be able to define intensity based training
2. By the end of the course, the participant will be able to identify the criteria to begin an ACL return to run progression
3. By the end of the course, the participant will be able to define stiffness as it relates to running biomechanics
4. By the end of the course, the participant will be able to define heart rate variability b
5. By the end of the course, the participant will be able to identify the role of motor learning principles in changing running gait

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. [L]
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- rate manipulation on joint mechanics during running. *Med Sci Sports Exerc.* 2011;43(2):296-302. doi:10.1249/MSS.0b013e3181ebedf4. [L] [SEP]
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 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, Heiderscheit 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. [L] [SEP]
 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. [L] [SEP]
 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. [L] [SEP]

Speaker Information:

- *Doug Adams, PT, DPT, SCS, OCS, CSCS*
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ACE Running,

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.

Teaching and Evaluation Methods:

- Video based lectures will be used to present evidence-based information to course participants
- A Case Study 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
- Assessment of learning at end of course



Recommended Participant Level: Beginner to Intermediate level

Return to Run Outline
Return to run principles and running stress
Individualized return to run variations and individualized treatment
Return to running for ACL injuries / load acceptance programs
Progressive sequencing and treatment