



CENTER FOR HUMAN PERFORMANCE

Motion Analysis Laboratory
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MOTION ANALYSIS OF RUNNING (Information Sheet)

Running is by far the most popular sport in the world today with millions of runners of all shapes and levels engaged in some form of running activity. As a result, the rate of injury is high with nearly half of runners sustaining an injury serious enough to alter performance or practice habits.

A key component of running is the running shoe and thus the Center for Human Performance focuses its 3D motion analysis on the geometry and forces involved during running with different types of footwear. Our research has shown us runners have different anatomy and biomechanics and thus not all shoes "fit" best for everyone. Using our sophisticated instrumented tools, we can reliably determine how your shoe and overall biomechanics affect the way you run and your risk of running-related injuries.



WHAT TO EXPECT FROM A RUNNING MOTION ANALYSIS

- During a motion analysis session, the athlete will be asked to wear sliding shorts and a baseball cap to allow for motion analysis preparation. A kinesiologist will then place 40 reflective markers on the skin overlying specific bony landmarks of the athlete's entire body.
- The kinesiologist will ask the athlete to stand in the middle of motion analysis laboratory for a few seconds while 10 special motion capture cameras record the locations of each marker.
- Once all the marker locations have been verified, the athlete will be allowed ample time to warm-up by walking and jogging in and out of the capture volume.
- After the warm-up period, the athlete will then run over a force plate that measure ground reaction forces 5-10 times with each shoe to be assessed.
- The staff will capture the movements of the markers with the motion analysis system while the athlete runs in the lab.
- The athlete will have the option to be captured and analyzed in a variety of conditions specified (ie, different shoes, running speeds, etc).
- The entire session should take 1 to 1.5 hours to complete, after which the athlete can view his 3D "stick figure" in motion on the computer screen.
- Depending on the nature of the visit, a report summarizing the biomechanical findings will be sent out to the player, coach, trainer, or in some instances, his physician. A CD of his 3D stick figure and videos from the session will also be produced and sent, usually within a week or two.

To schedule an appointment, please call the Center at (858) 966-8415 or visit www.sdchp.com.