

Low Back Pain

For information on all types of injuries visit:
<http://www.cssphysio.com.au/Doctors/forDoctors.html>



Altered Hip Function is a Major Factor in LBP – A Study in Golfers

Close to 50% of my work is dealing with acute or chronic low back pain (LBP). Over the years, I have come to recognise common patterns that are more prevalent in those with recurrent symptoms. One common pattern is excessive flexion and rotation through the lumbar spine, with inefficient use of the more mobile and stronger hip joints. Such patterns are also seen in professional athletes with LBP.

Limited hip mobility has been shown to be a common cause of LBP in golfers. In particular, limited hip internal rotation in the lead leg has been shown to be significantly more common in golfers with LBP compared to those without. Studies have also shown that rehab targeting hip internal rotation, as well as core strengthening, is very effective in relieving LBP in golfers.

Muscle imbalances in strength & length have been shown to be important contributors to hip motion deficits. Common examples include:

- Weak hip external rotators relative to internal rotators
- Weak abductors relative to adductors
- Weak extensors relative to flexors
- Tight hamstrings
- Tight hip flexors

Ways in which limited hip mobility may affect the lumbar spine include:

- Loss of efficient transfer of kinetic energy from the lower limbs to the lumbopelvic

kinetic chain, resulting in excessive lumbar rotational stress.

- Limited hip rotation is likely to lead to a compensatory increase in lumbar rotation. The lumbar spine is not meant to twist - its functions are to be mobile in bending / extension, but has little rotatory mobility. Even a small increase will heighten the risk of annular tearing and facet joint impaction injury.
- Hip extensor strength deficits have been shown to contribute to LBP in female athletes.
- Hip abductor weakness can lead to excessive pelvic drop & lumbar shear. Alternatively, it may lead to a compensatory increase in activity in the lateral trunk stabilisers, leading to overload in the spine and trunk muscles.
- Hamstring tightness is associated with posterior pelvic tilt and increased lumbar kyphosis.
- Hip flexor tightness is associated with anterior pelvic tilt & increased lumbar lordosis.
- Weakness in the gluteals can lead to compensatory shortening through the hip flexors and hamstrings. This is because these muscles, as synergists, work to compensate for the reduced pelvic rotation, hip extensor & hip stability function of the gluteals.

This study published in the January edition of AJSM looked at 30 asymptomatic professional golfers, 15 with hip internal rotation deficits, and 15 without. All were right handed. The authors used 3D biomechanical analysis of the lumbar spine, pelvis & hip, as well as muscle strength & length measures. Their main findings were that golfers with reduced hip rotation had:

- A compensatory increase in lumbar rotation.
- Muscle imbalances – weaker external compared to internal rotators, weaker gluteals, and tightness in hamstrings & / or iliopsoas.
- A compensatory increase in lumbar flexion & right side flexion (during the downswing). The authors theorized that the increased lumbar flexion could have been due to tight hamstrings resulting in increased posterior pelvic tilt, or overactive hip flexors pulling downwards on the spine. They also noted that increased right side flexion during the follow-through phase is known to be a cause of right sided low back pain in right-handed golfers.

Reference:

Kim, S et al (2015). Lumbopelvic kinematic characteristics of golfers with limited hip rotation. *American Journal of Sports Medicine*, 43, 1, 113-120.

For information for doctors on physiotherapy management of all types of injuries visit:
<http://www.cssphysio.com.au/Doctors/fordoctors.html>

Information for patients is at:
<http://www.cssphysio.com.au/forpatients.html>



[Concord Sport & Spine Physiotherapy](#)
[202 Concord Road](#)
[Concord West, NSW 2138](#)
[Sydney, Australia.](#)

Ph (02) 9736 1092

Email: info@cssphysio.com.au

Web: www.cssphysio.com.au

Copyright © 2014 Paul Monaro. All Rights Reserved