

**Straight Leg Raising Test – a snapshot summary of evidence  
(May 2013)**

- **Key messages**

- The passive straight leg raising test (PSLR) is commonly used as an aid to the diagnosis of Lower Back Pain and is considered to be of high importance in the clinical assessment of adults with low back pain with leg pain.
- Diagnostic performance of most physical tests for lumbar radiculopathy from lumbar disc herniation appear to be poor, when used in isolation. However, this is mostly based on the findings from surgical populations and may not apply to primary care or non-selected populations. Better performance may be obtained when tests are combined.
- Straight leg raising test has been found to be the most sensitive test, compared with others, for radiculopathy, however it is limited by poor specificity.
- There remains no standard PSLR procedure, with no consensus on interpretation. A negative PSLR may have more diagnostic value than a positive one.
- More research is needed in the clinical use of PSLR; its intra- and inter-observer reliability, the influences of age, gender, diurnal variation, and psychosocial factors; and its predictive value in lumbar intervertebral disc surgery.

## Definitions

The passive straight leg raising test (PSLR), also known as the test of Lasègue<sup>1</sup>, is commonly used as an aid to the diagnosis of Lower Back Pain (LBP)<sup>2,3</sup>. Forst<sup>4</sup> was the first to describe the PSLR in his Paris medical thesis of 1881. Rang<sup>4</sup>, quoting from Forst<sup>4</sup>, described how the supine patient's heel is supported with one hand while the other is placed over the same limb's patella:

“...We have just seen that the patient experiences acute pain when the thigh is flexed on the pelvis while the leg is held in extension. If we now flex the leg at the knee, we are able to flex the thigh at the hip without causing the patient any painful feeling.”

A number of variations of the test exist and the terms straight leg raise test and Lasègue test are used interchangeably<sup>5</sup>. A test is deemed positive when pain below the knee occurs during the test, however the angles of hip flexion described for a positive test vary between studies<sup>5</sup>.

## Context

LBP is the most common disability in western industrialised countries<sup>5</sup>. One of the causes of LBP with leg pain can be nerve impingement from a herniated lumbar disc. Primary care clinicians use a combination of patient history and physical examination to assess the likelihood of the symptoms being attributable to a herniated lumbar disc<sup>5</sup>. Although most people experience at least one episode of low-back pain in their life, in up to 85% of the patients, no specific pathology is identified<sup>6</sup>.

LBP is one of the most common musculoskeletal complaints seen by osteopaths in practice and Rebain et al<sup>7</sup> showed in their postal survey of UK osteopaths that the SLR test is routinely used to assist in the diagnosis of LBP.

The Cochrane Collaboration<sup>5</sup> conducted a systematic review of “Physical examination for lumbar radiculopathy due to disc herniation in patients with low-back pain”. Their review included 16 cohort studies (median N = 126, range 71 to 2504) and three case

control studies (38 to 100 cases). Most of studies assessed the SLR test but other elements of physical examination reviewed included crossed SLR, paresis or muscle weakness, muscle wasting, impaired reflexes and sensory deficit. Only one study was carried out in a primary care population; most tests showed higher specificity and lower sensitivity in this setting compared to other settings. When used in isolation, diagnostic performance of most physical tests (scoliosis, paresis or muscle weakness, muscle wasting, impaired reflexes, sensory deficits) was poor.

Rubinstein et al<sup>8</sup> reported in their best evidence review, that the straight leg raising test was found to be the most sensitive sign for radiculopathy, but it was limited by low specificity (pooled sensitivity 0.85, specificity 0.52). Similar analyses conducted for assessing range of motion have generally found them to be limited by low to moderate inter-examiner reliability and a poor relation with functional impairment.

Konstantinou et al<sup>9</sup> conducted a Delphi study to develop a consensus on the content of a clinical assessment for adults presenting with low back and leg pain to primary care. They also aimed to establish the most important items for diagnosing spinal nerve root involvement. A multidisciplinary group of participants took part and rated various items for their importance in the clinical assessment. SLR, with other neural tension tests such as femoral nerve stretch, was rated as important in the assessment of low back-related leg pain by 89.6% of the respondents. Their recognition of the clinical presentation of lumbar disc herniation and their use and understanding of the straight leg raising test were in keeping with the literature.

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## References

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