

# The Back is the Future: Lumbar Stenosis

► With a good functional tool like the Oswestry for evaluation, therapists can then begin to look to the future and recognize the predominance of lumbar stenosis (LS) as a player in low-back pain in older people.

This article will discuss some general facts about low-back pain and aging and then delve into the area of lumbar stenosis—a diagnosis that is becoming more and more pervasive. Thirty-one percent, or 34 million people in the United States, have low-back pain, with the numbers for those over 65 years equal to 20 million.<sup>1</sup> Of elders who live at home, a quarter complain of low-back pain with a high prevalence of those experiencing low-back pain being over 65 years old.<sup>2</sup>

The evidence suggests that there is a correlation between symptoms of back pain and functional limitations. The most stated functional limitations occurring with low-back pain include standing for more than 15 minutes, pushing or pulling large objects and walking half a mile or more.<sup>3</sup>

## The Severity Factor

The use of radiographic evidence in the evaluation of low-back pain in older adults is controversial as it often does not correlate with the degree of severity and pain. As a result, symptom identification is often more useful in the evaluation of low-back pain in older people.

One study states that degenerative changes such as narrowing of the disc space, traction osteophytes, muscle degeneration and end-plate sclerosis are extremely common in older individuals but correlate poorly with clinical symptoms.<sup>4</sup> Therefore, as therapists, we must sift through the facts to find which are the most salient for treatment.

There are two more interesting facts on low-back pain. One, there is no association between pain intensity and aerobic fitness.<sup>5</sup> So therapists need to recognize the specificity of the low-back pain etiology.

Secondly, cigarette smoking increases the risk of back pain, because it promotes vasoconstriction, increases viscosity of the blood and results in hypoxia of the disc, which is now more vulnerable to stress.<sup>5</sup>

In early work done by Nowakowski, a description of three primary structures that contribute to spinal stenosis is discussed. These structures include the ligamentum flavum, facet joints and disk space.<sup>6</sup>

The aging process results in diminished disk height, which, if pronounced, can allow buckling of the ligamentum flavum into the spinal canal. The anterior/posterior diameter of the dural sac is decreased by extension (normally, extension decreases AP diameter 9 percent; in people with LS it is 67 percent). Nowakowski gives a basis for treatment and states that there is a widening of the lumbar canal with relief of symptoms occurring with flexion.<sup>6</sup> Many interventions used in follow-up studies on LS have been based on this information. Information on the Bicycle Test and the Stoop Test as tests to

differentiate LS from vascular symptoms was also provided.

Finally, this article identifies symptoms such as having a wide-based gait, thigh pain following 30 seconds of L-sp extension and decreased dermatomal sensation and reflexes at the level of the stenosis as being associated with LS.

Spivak, Iverson and Johnsson gave us more background information on lumbar stenosis that served to characterize the impairments of patients with LS. In individuals with these impairments, Iverson discovered that 51 percent had LE weakness, specifically in the extensor hallucis longus, 81 percent experienced a decreased neurosensory response and 66 percent were unable to walk farther than two blocks.<sup>7</sup>

Spivak described how to differentiate central from lateral stenosis. Increased pain at rest and at night is characteristic of lateral stenosis. The characteristics of central stenosis include an

increased limitation in walking and reduced reflexes in the knees and ankles. However, with both lateral and central stenosis, these individuals will demonstrate with a stooped forward posture upon standing and with walking.<sup>8</sup>

Johnsson described the natural course of lumbar spinal stenosis and found that after a four-year follow-up, 70 percent of the cases were unchanged, 15 percent showed improvement and 15 percent worsened.<sup>9</sup>

Fritz conducted an intervention study that showed the benefits of using flexion and unloading ambulation. The group receiving this intervention had noted improvements on all outcome measures.<sup>10</sup> A more detailed intervention using flexion and lumbar stabilization was done by Whitman.<sup>11</sup>

Using the information obtained from past researchers, therapists will help both patients and our profession by committing to look ahead at the most recent evidence-based intervention ideas for use in daily practice. By doing so, the best back care for patients suffering from symptoms of low-back pain due to lumbar stenosis can be rendered. ■

## References are available at [www.advanceweb.com/pt](http://www.advanceweb.com/pt)

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