

**Reference:** Gehring RD, Potter-Brunet J, Sizer PS, Gilbert KK, Brismée JM. Neurodynamic Treatment for Neurogenic Claudication related to Lumbar Spinal Stenosis: A Case Series

**Context:** Degenerative lumbar spinal stenosis (LSS) is common in older adults and is associated with limited walking tolerance due to neurogenic claudication (NC). Hip extension limitations are also common and can cause anterior pelvic tilting and compensatory lumbar extension during gait. There is minimal research examining neurodynamic treatments for this condition.

**Objective:** To evaluate the immediate and mid-term therapeutic benefit of a treatment program involving neural mobilization, hip extension mobilization, and low back stretches in patients with NC related to LSS

**Design:** Prospective Case Series from January 2018 – July 2019. Six sessions over 3 weeks. 3-month follow-up.

**Setting:** University Faculty Clinic

**Participants:** Ten consecutive patients with reports of NC related to MRI confirmed LSS were assessed. Seven subjects met inclusion criteria: 4 male/3 female, mean age  $68.6 \pm 8.8$  years old.

**Interventions:** Subjects completed 6 sessions of neurodynamic treatment (double knee to chest stretches, bilateral hip extension mobilizations, and passive sidelying neural mobilization) and a standardized home exercise program (HEP). The HEP was continued for 3 months.

**Main Outcome Measures:** Walking measures included time to first symptoms (TFS) and total ambulation time (TAT). Other measures included the Swiss Spinal Stenosis questionnaire (SSS) and the Numeric Pain rating Scale (NPRS) during walking activities.

**Results:** A significant reduction of average NPRS scores was found at the 7<sup>th</sup> visit ( $p=0.027$ ), but not at 3-months ( $p=.115$ ). Five of seven subjects met the minimally clinically important difference (MCID) for the NPRS and SSS symptom subscale at the 7<sup>th</sup> visit. At 3-months 3 of 5 subjects maintained the MCID for the NPRS, and 4 of 5 for the symptom subscale. Significant improvements in the SSS symptom and functional subscales were found at both the 7<sup>th</sup> visit ( $p=0.018$ ) and at 3-months ( $p=0.022$ ). All subjects met the MCID for the SSS functional subscale at the 7<sup>th</sup> visit and 5 of 5 met the MCID at 3-months. Walking measures improved in all subjects and were significant at the 7<sup>th</sup> visit in both TFS ( $p=.018$ ) and TAT ( $p=.027$ ).

**Conclusions:** A simple neurodynamic approach in subjects with NC related to LSS resulted in significant immediate and mid-term improvements in pain symptoms, self-report functional mobility, and walking tolerance.