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Article in *Journal of Back and Musculoskeletal Rehabilitation* · November 2013

DOI: 10.3233/BMR-130440 · Source: PubMed

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The spinal stenosis pedometer and nutrition lifestyle intervention (SSPANLI) randomized controlled trial protocol

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Abstract

Background: Because of symptoms, people with lumbar spinal stenosis (LSS) are often inactive, and this sedentary behaviour implies risk for diseases including obesity. Research has identified body mass index as the most powerful predictor of function in LSS. This suggests that function may be improved by targeting weight as a modifiable factor. An e-health lifestyle intervention was developed aimed at reducing fat mass and increasing physical activity in people with LSS. The main components of this intervention include pedometer-based physical activity promotion and nutrition education.

Methods/Design: The Spinal Stenosis Pedometer and Nutrition Lifestyle Intervention (SSPANLI) was developed and piloted with 10 individuals. The protocol for a randomized controlled trial comparing the SSPANLI intervention to usual non-surgical care follows. One hundred six (106) overweight or obese individuals with LSS will be recruited. Baseline and follow-up testing includes dual energy x-ray absorptiometry, blood draw, 3-day food record, 7-day accelerometry, questionnaire, maximal oxygen consumption, neurological exam, balance testing and a Self-Paced Walking Test. Intervention: During Week 1, the intervention group will receive a pedometer, and a personalized consultation with both a Dietitian and an exercise specialist. For 12 weeks participants will log on to the e-health website to access personal step goals, walking maps, nutrition videos, and motivational quotes. Participants will also have access to in-person Coffee Talk meetings every 3 weeks, and meet with the Dietitian and exercise specialist at week 6. The control group will proceed with usual care for the 12-week period. Follow-up testing will occur at Weeks 13 and 24.

Discussion: This lifestyle intervention has the potential to provide a unique, non-surgical management option for people with LSS. Through decreased fat mass and increased function, we may reduce risk for obesity, chronic diseases of inactivity, and pain. The use of e-health interventions provides an opportunity for patients to become more involved in managing their own health. Behaviour changes including increased physical activity, and improved dietary habits promote overall health and quality of life, and may decrease future health care needs in this population.

Trial registration: Clinicaltrials.gov, NCT01902979

Keywords: Lumbar spinal stenosis, Physical activity, Nutrition, Pedometer, Obesity, Exercise, Inactivity, Treatment

Background

Lumbar spinal stenosis (LSS) is a degenerative condition which typically affects adults in their sixth and seventh decades of life [1]. The estimated prevalence of symptomatic LSS ranges between 8.4% [2] and 9.3% in the general population, [3] and is on the rise worldwide [4].

There are an estimated 1.2 million people in the US with symptomatic LSS at any given point in time [2].

LSS is characterized anatomically by a narrow spinal canal and/or narrow nerve root foramina, resulting from degenerative changes in the spine. The most specific symptom of LSS is neurogenic claudication, which includes pain, numbness and weakness in the low back, buttocks and legs brought on by standing and exacerbated by walking [5]. Because of these symptoms, people with LSS avoid walking and exhibit sedentary behaviour [6]. Therefore,

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