

Spinal cord stimulation outcome

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PROSTIM study is an [ongoing prospective](#), [multicentric](#), and [observational clinical study](#) (NCT05349695) that aims to identify different patient [clusters](#) and their outcomes after [spinal cord stimulation](#). Patients are recruited in different centers in [Europe](#). The [analysis](#) focuses on identifying significant patient clusters based on different health [domains](#) and the changes in biopsychosocial variables 6 weeks, 3, and 12 months after [implantation](#). This study is the first to include a [biopsychosocial clustering](#) to identify significant patient groups and their response to [spinal cord stimulation treatment](#) ¹⁾

The study aims to investigate whether benzodiazepine use differs between patients with favorable and unfavorable spinal cord stimulation (SCS) treatment outcomes. They hypothesize that the patients with unfavorable SCS outcomes would exhibit a higher level of benzodiazepine use.

Using a case-control study setting, we examined benzodiazepine use in SCS patients and in matched population controls as a potential risk factor for poor SCS outcome. A total of 373 consecutive SCS patients treated in Kuopio University Hospital between 1997 and 2014 and their 1117 matched population controls were followed until patient death or the end of March 2016.

Benzodiazepines were used during the 24 months before or after SCS implantation by 42.3% of the SCS patients who had the device explanted, 39.5% who had an unsuccessful trial stimulation, 28.0% who still had the device at the end of the follow-up period, and 8.0% of the controls. Diazepam use before SCS increased the odds for explanting of SCS by 2.4-fold (95% CI: 1.0-5.4). Starting clonazepam use after SCS was associated with a 5.2-fold (95% CI: 1.5-18.9) increase in the odds of unsuccessful trial stimulation.

The benzodiazepine use in patients with poor SCS outcomes illustrates the role of anxiety in SCS outcomes and the need for multidisciplinary treatment of pain ²⁾.

¹⁾

Raymaekers V, Meeuws S, Goudman L, der Steen GV, Moens M, Vanloon M, Ridder D, Menovsky T, Vesper J, Plazier M. Patient [profiling](#) and [outcome assessment](#) in [spinal cord stimulation](#) for [chronic back](#) and/or [leg pain](#) (the PROSTIM [study](#)): a study [protocol](#). Pain Manag. 2023 Dec 6. doi: 10.2217/pmt-2023-0103. Epub ahead of print. PMID: 38054386.

²⁾

Määttä J, Martikainen A, Ikäheimo TM, Nissen M, Viinamäki H, von Und Zu Fraunberg M, Huttunen J. Benzodiazepine Use Is Associated With Poorer Spinal Cord Stimulation Outcome in 373 Neuropathic Pain Patients. Neuromodulation. 2019 Sep 11. doi: 10.1111/ner.13045. [Epub ahead of print] PubMed PMID: 31508883.

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