

# Impact of Age and Comorbidities on Use of Sacral Neuromodulation

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## Abstract

**Purpose:** We investigated the influence of patient age on sacral nerve stimulation trial outcomes, device implantation and treatment durability. **Materials and Methods:** We analyzed a database of all sacral nerve stimulation procedures performed between 2012 and 2014 at a high volume institution for associations of patient age with sacral nerve stimulation indication, trial stimulation success, device revision and device explantation. **Results:** In a cohort of 356 patients those with nonobstructive urinary retention and urgency-frequency were younger than patients with urgency urinary incontinence. Trial stimulation success did not differ by age in stage 1 and percutaneous nerve evaluation trials ( $p = 0.51$  and  $0.84$ , respectively). Logistic regression identified greater odds of trial success in females compared to males (OR 2.97, 95% CI 1.32–6.04,  $p = 0.009$ ) and for urgency urinary incontinence compared to urgency-frequency (OR 3.02, 95% CI 1.39–6.50,  $p = 0.006$ ). In analyzed patients there were 119 surgical revisions, including battery replacement, and 53 explantations. Age was associated with a decreased risk of revision with 3% lower odds per each additional year of age (OR 0.97, 95% CI 0.95–0.98,  $p < 0.0001$ ). While age did not influence explantation, for each body mass index unit there was a 5% decrease in the odds of explantation (OR 0.95, 95% CI 0.91–0.98). **Conclusions:** In contrast to previous studies, older patients experienced no difference in the sacral nerve stimulation response in stimulation trials and no difference in the implantation rate. Furthermore, age was modestly protective against device revision. This suggests that age alone should not negatively predict sacral nerve stimulation responses..

## Keywords

Urinary bladder, Age groups, Overactive, Electric stimulation, Prostheses and implants.