Durable Outcomes of Percutaneous 60-Day Peripheral Nerve Stimulation for Low Back Pain: A 5-Year Cross-Sectional Follow-Up Survey

Samir J. Sheth, MD[1], Denise D. Lester, MD, FASAM[2], Jaudat Mahmood, MD[3], Sarah E. Trampota, MD[4], G. Lawson Smith, MD[5], Raheleh Rahimi Darabad, MD[6], Brandon D. Swan[7], Meredith J. McGee, PhD[7], Joseph W. Boggs, PhD[7]

[1]Sutter Health Systems, Roseville, CA; [2]Central Virginia VA Health Care System, Richmond, VA; [3]Shannon Medical Center, San Angelo, TX; [4]Advantage Pain Management, San Antonio, TX; [5]University of Arkansas for Medical Sciences, Little Rock, AR; [6]Indiana University Health, Indianapolis, IN; [7]SPR, Cleveland, OH

Scan to Learn More

24th Annual Pain Medicine Meeting
November 13-15, 2025 | Austin, TX
50th ANNIVERSARY ASRA PAIN MEDICINE

INTRODUCTION

- Low back pain (LBP) is a leading cause of disability worldwide, and treatment often necessitates invasive interventions that carry significant risks and economic burdens.
- Percutaneous 60-day Peripheral Nerve Stimulation (PNS) is a minimally invasive treatment that can provide durable pain relief enabling functional improvements.[1,2]

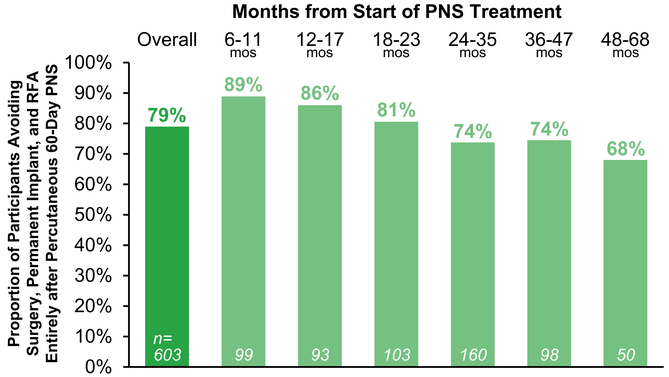
Building on prior prospective and randomized clinical trials in LBP,[3,4] this cross-sectional survey **evaluated the durability of improvements among a real-world cohort of patients with low back pain treated with 60-day PNS.**

METHODS

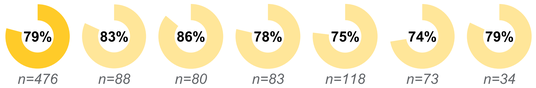
- **IRB-approved cross-sectional follow-up survey** of patients who:
  - had LBP that was treated with Percutaneous 60-day PNS
    - received 2 leads targeting lumbar medial branches
  - were at least 6 months from the start of treatment
  - responded with ≥50% pain relief at the end of treatment (EOT)
  - did not have documented confounding factors contributing to pain at baseline (*e.g.,* post-op, trauma, SIJ, cancer, etc.)
  - opted-in during treatment to share data with the device manufacturer
- **Online survey**: Eligible participants received an invitation & multiple email, SMS, and/or phone call reminders to complete the survey
  - The survey response rate was 44% (603/1360)
- **Key outcomes** included patient-reported percent pain relief, average and worst pain scores, and patient global impression of change (PGIC) in quality of life, physical function, mood, and sleep
- Participants also reported on the **use or avoidance of other treatments and interventions** for their LBP since completing the Percutaneous 60-day PNS treatment

RESULTS

79% (476/603) of participants avoided use of additional interventions‡ after Percutaneous 60-day PNS for LBP



Durable Improvement Among *ASPIRE*‡ Participants in at Least One Domain of: Pain, Quality of Life, Physical Function, Mood, or Sleep*



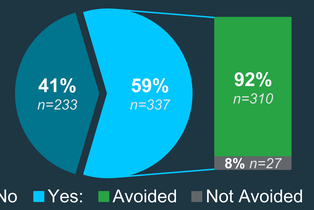
Safety: As a follow-up survey, safety outcomes were not directly assessed in this study

‡*Defined as participants who Avoided Surgery, Permanent Implant, and RFA Entirely after 60-day PNS*

**Domains included: Pain: ≥50% patient-reported percent pain relief; quality of life, physical function, mood, and/or sleep: at least minimally improved on a PGIC scale*

Durable pain relief enabled avoidance of low back surgery and permanent implants in a majority of participants

Were patients without prior permanent implant (n=570) using Percutaneous 60-day PNS to avoid permanently implanted stimulation?

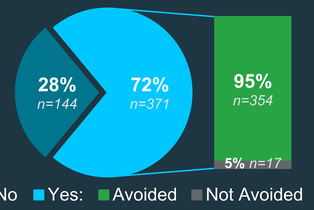


59% were using 60-day PNS to avoid a permanent implant

92% of those (n=310/337) successfully avoided perm. implant after 60-day PNS

84% of those avoiding perm. implant (n=260/310) were responders in ≥1 domain*

Were patients without prior low back surgery (n=515) using Percutaneous 60-day PNS to avoid low back surgery?



72% were using 60-day PNS to avoid low back surgery

95% of those (n=354/371) successfully avoided surgery after 60-day PNS

83% of those avoiding low back surgery (n=294/354) were responders in ≥1 domain*

Demographics	
N	603
Sex, % (n)	61% F (365)
	mean (SD)
Age, years	64 (14)
Baseline average pain	6.0 (1.9)
Baseline worst pain	8.7 (1.4)
Months from Start of PNS Treatment	
	% (*n*)
6-11 Months	16% (99)
12-17 Months	15% (93)
18-23 Months	17% (103)
24-35 Months	27% (160)
36-47 Months	16% (98)
48-68 Months	8% (50)
Cause of Low Back Pain**	
	% (*n*)
Lumbar spondylosis/ facet arthropathy	51% (305)
Degenerative disc disease	47% (285)
Spinal stenosis	33% (196)
Injury/trauma	20% (119)
Previous low back surgery	10% (59)
Sacroiliac joint dysfunction	7% (43)
Other/unsure	23% (141)

***Participants had the ability to make multiple selections as applicable*

CONCLUSIONS

- These findings suggest that **Percutaneous 60-day PNS can provide durable, multidimensional relief for patients with low back pain**, with benefits **sustained for up to 5+ years**.
- Participants reported **long-term improvements in pain and other domains of patient wellness that enabled avoidance of subsequent intervention such as surgery, permanent implants and/or RFA**, supporting the potential of Percutaneous 60-day PNS as a minimally invasive treatment capable of producing long-lasting benefits in patients with LBP.

ACKNOWLEGEMENTS

Funding: Support for this study was provided by SPR.

Relevant Disclosures: DDL has research sponsored by SPR. SJS, JM, GLS & RRD are consultants for SPR. BDS, MJM & JWB are employees of SPR. MJM & JWB have stock options in SPR.

Other Contributions: Thank you to the Patient Support and Clinical Affairs teams at SPR, including Aaron Thornton, Lauren Easley, Rosemary Zang, Joey Wellman, Regina Bellian, Jianna Shifris, Candice Malensek, Maria Popianos, Autum Gruber, and Jacqui Lingler.

References: [1] Vorenkamp KE et al., *Pain and Therapy*, 2025. [2] Pritzlaff SG et al., *Pain Management*, 2024. [3] Gilmore CA et al., *Pain and Therapy*, 2025. [4] McCormick ZL et al., *23rd Annual ASRA Pain Medicine Meeting*, 2024.