

Improvements in work-related outcomes are associated with durable knee pain relief after 60-day peripheral nerve stimulation

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More Clinical Evidence for 60-day PNS

Objective

Chronic knee pain affects 25% of adults, impacting function [1] and contributing to

- An **increase** in **work absenteeism** by **22%** [2]
- **Reduction** in **work productivity** by **71%** [2]

Percutaneous 60-day peripheral nerve stimulation (PNS):

- Non-surgical treatment
- Improved knee pain substantially in RCT at end of treatment [3]



Study Goal: *Assess work-related outcomes in participants with knee pain following percutaneous 60-day PNS.*

Methods

- IRB-approved cross-sectional follow-up survey of patients who previously underwent 60-day PNS treatment of knee pain.

Key Selection Criteria for Survey and Post-Hoc Analysis

- ≥6 months from the start of treatment
- Reported ≥50% pain relief at end of treatment
- Working at time of treatment and/or survey
- No reported subsequent interventions since 60-day PNS treatment

Patient-reported Outcomes

- Percent pain relief (%)
- Patient Global Impression of Change (PGIC; [-3,3])
  - Mood, physical function, sleep, quality of life (QoL), work attendance, and work productivity

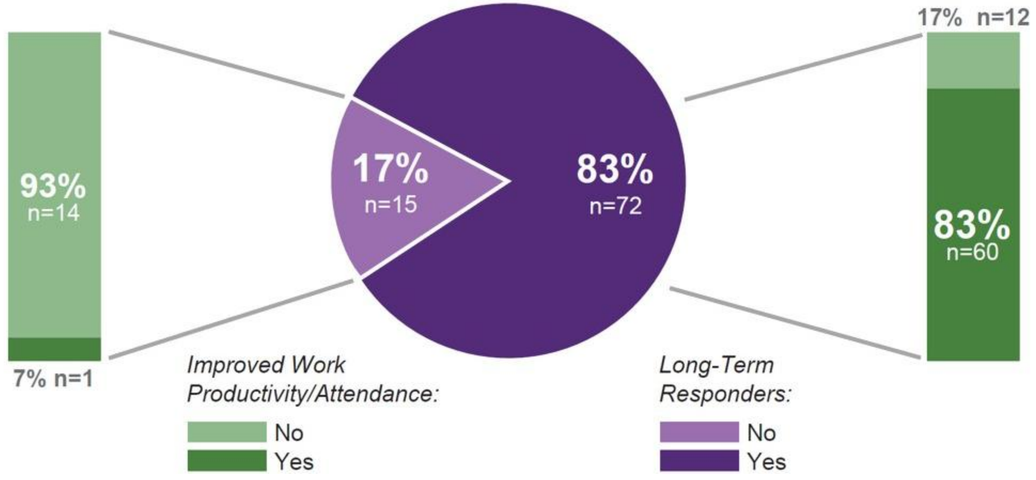
Results

87 survey respondents were employed at the time of treatment and/or follow-up.

Demographics (n=87)	
Sex	62 (71%) F
Age, years	54 ± 16
Baseline Average Pain	5.6 ± 1.8
Baseline Worst Pain	8.4 ± 1.8
Months from Start of 60-Day PNS, n (%)	
7-11 Months	34 (39%)
12-23 Months	27 (31%)
24-48 Months	26 (30%)
Causes of Knee Pain, n (%) Patients selected all that applied.	
Osteoarthritis	35 (40%)
Postoperative	39 (45%)
Injury/Trauma	36 (41%)
Nerve/Neuralgia	18 (21%)
Unsure/Unknown	7 (8%)
Number of leads, n (%)	
Single	45 (52%)
Dual	41 (47%)
Unknown	1 (1%)
Most Common PNS Nerve Targets, n (%)	
Saphenous	46 (53%)
Femoral	28 (32%)
Genicular	10 (11%)
Sciatic	10 (11%)
Other	5 (6%)

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

Improvements in work attendance and/or productivity were more likely for long-term responders§



*§ **Long-term responders:** Pain relief ≥50% and/or improvement in QoL, physical function, mood, and/or sleep ≥1 on PGIC scale at time of survey completion.*

Among participants who reported avoiding subsequent interventions at time of survey and were employed (n = 87):

>4x More participants were classified as **long-term responders** than non-responders

70x Higher odds of reporting work-related improvements for **long-term responders**

Odds Ratio = 70; 95% Confidence Interval = [8.4, 584.0]; p<0.001

Key Takeaways

Real-world findings support that effective treatment of knee pain with minimally invasive percutaneous 60-day PNS may be associated with work-related benefits for patients and their employers

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References: [1] U. S. Nguyen et al., Ann Intern Med, 2011 [2] M. Agaliotis et al., Occup Environ Med, 2014 [3] J. H. Goree et al., Neuromodulation, 2024.