

Peripheral Nerve Field Stimulation as Adjunct to Spinal Cord Stimulation for Refractory Axial Back Pain in Failed Back Surgery Syndrome: A Narrative Review

Tishawn Ross, MD · Vineet Vemulapally, DO · Roberto Andrade, MD

Physical Medicine & Rehabilitation, One Brooklyn Health — Kingsbrook Jewish Medical Center Campus · No disclosures

SCAN FOR FULL PAPER

Methods & references

MAIN FINDING

Add PNFS when SCS fails to control back pain — as salvage, not routine combination therapy.

The problem

58% pooled SCS pain relief at 24 months (74 studies, n = 3,025)

SCS is guideline-supported for FBSS, but no patient- or device-level predictor of response has been found.

Radicular leg pain	responds well
Axial back pain	**inconsistent**

METHODS

Narrative review, PubMed + citation tracking, 2013–2023: RCTs, comparative cohorts, a cost-effectiveness analysis, and systematic / narrative reviews.

Adding PNFS

RCT · N = 52, SCS-REFRACTORY BACK PAIN

Adjunctive PNFS gave significantly greater back pain reduction at 3 months. At 12 months on combined therapy:

−30.0	mm back pain VAS
−43.7	mm leg pain VAS

Both $p < 0.001$ vs. baseline; open-label.

SCS trial → axial pain controlled?	
YES SCS alone	NO **Add PNFS**

Fig. 1 — Where the evidence places PNFS.

The counterpoint

COMPARATIVE COHORT · N = 75, 12 MONTHS

No difference

between SCS responders and patients needing PNFS augmentation — in pain, disability (ODI), or quality of life (SF-36, EQ-5D, HADS).

The apparent PNFS benefit may reflect **pre-selection of back-pain non-responders**, not a general effect of combined stimulation.

2023 REVIEW · 15 STUDIES, 4 RCTS

Efficacy signals confirmed — but no long-term, adequately powered RCTs.

Cost & the gap

€25,311

per QALY; >80% probability cost-effective at a €40,000 threshold

Caveat: a **3-month horizon** for a permanently implanted device.

No trial has randomized by **back-pain-responder phenotype** at SCS trial. Arms are defined post hoc, limiting causal inference.

NEXT STEP

RCTs stratified by pre-specified responder phenotype, followed beyond 12 months.