ERECTOR SPINAE VS LUMBAR MULTIFIDUS STIMULATION FOR CHRONIC LOW BACK PAIN

Comparative Case Series of Peripheral Nerve Stimulation of the Lumbar Medial Branch Versus the Proximal Lumbar Dorsal Ramus for Recruitment of the Multifidus and Erector Spinae Muscles in Chronic Low Back Pain

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Background

Chronic low back pain often responds poorly to non-surgical therapy. Temporary peripheral nerve stimulation (PNS) is minimally invasive, but **the best muscle target is unclear.**

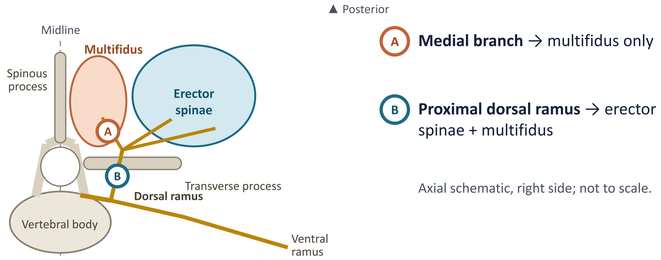
Methods

Retrospective · Single-center · 60-day SPRINT PNS System

28 patients
Refractory chronic low back pain

n = 17
Multifidus (MF)
Target A · lumbar medial branch

n = 11
Erector spinae + MF
Target B · proximal dorsal ramus



Primary: % reduction in NRS pain score
Secondary: function, opioid use (MME), complications
Follow-up: 2, 3–6 and 6–9 months · nonparametric tests

Stimulating the erector spinae via the proximal dorsal ramus was linked to greater, longer-lasting back-pain relief than multifidus-only stimulation.

Pain score (NRS) at 6–9 months

3.5 vs **6.5**

p = 0.018 significant

Median pain reduction

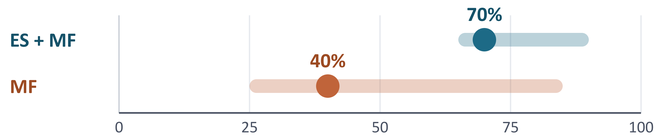
70% vs **40%**

p = 0.076 trend

Erector spinae + MF (n = 11)
Multifidus only (n = 17)

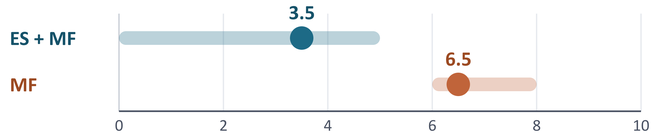
Results

% pain reduction (primary) — p = 0.076



Median [IQR]: 70% [65–90] vs 40% [25–85]

NRS pain score, 6–9 months — p = 0.018



Median [IQR]: 3.5 [0–5] vs 6.5 [6–8] · lower = less pain

Functional improvement — p = 0.20

ES + MF	**91%** (10/11)
MF	**65%** (11/17)

Opioid use (MME)
No significant difference

Safety
No serious device-related events

Limitations: exploratory, retrospective, single-center, non-randomized; small, unequal groups. Larger prospective studies are needed.

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