

Effect of Restorative Neurostimulation on Major Drivers of Chronic Low Back Pain Economic Impact

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Introduction

- **Pain impact** is an important construct, especially in **chronic low back pain** (CLBP), that correlates with both functional and economic outcomes
- **High impact pain** definition¹ is:
 - pain present on most days for ≥ 6 months
 - associated with substantial restriction of work, social, and self-care activity
- Patients with **high impact CLBP** are more likely to be:
 - frequent users of high-cost healthcare resources
 - report substantially higher average pain intensities
 - describe higher pain-related interference with life and work-related activities.²
- Therapies delivering durable pain and functional benefits reduce downstream direct and indirect healthcare costs
- **Restorative neurostimulation** is applicable to patients with high impact CLBP who have failed conservative management and have few viable therapeutic options remaining³

Aim: Establish whether long-term restorative neurostimulation clinical benefits also result in improvements in economic impact of major drivers of CLBP

Methods

- N=146 patients with neurostimulation with complete 2-year data
- Patients stratified to high, medium, and low impact CLBP
- Indirect drivers (i.e., work performance) collected by questionnaires

1. Dahlhamer, et al., MMWR Morb Mortal Wkly Rev., Centers for Disease Control and Prevention, 2018

2. Pitcher MH, et al., *Journal of Pain*, 2019

3. Gilligan C, et al., *Neuromodulation: Technology at the Neural Interface*, 2021

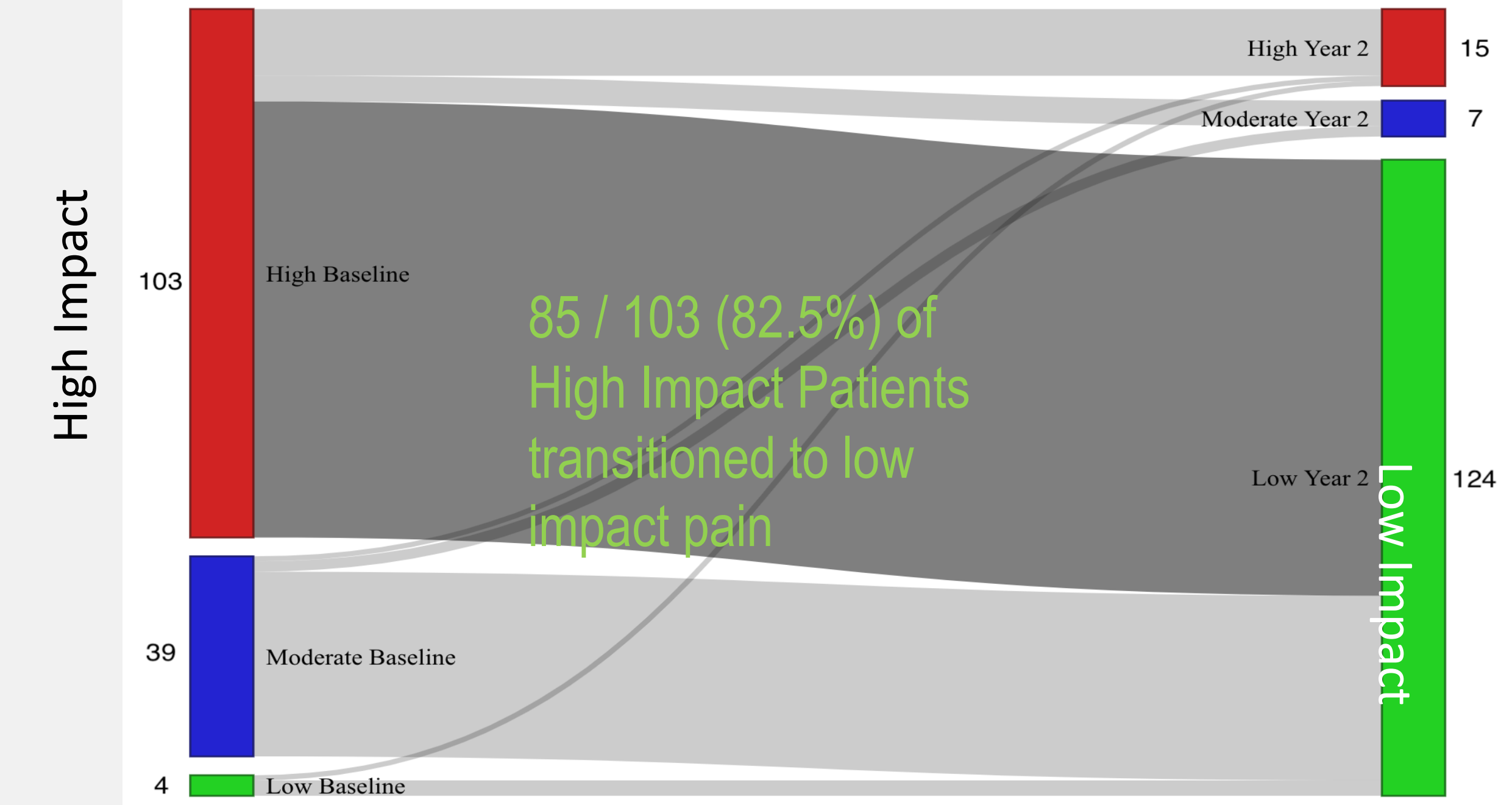
After two years of restorative neurostimulation:

- High impact CLBP transitioned to much lower impact
- Work ability improved from 6% to 50.1%
- Presenteeism improved from 14% to 60%
- May help reduce high impact pain healthcare utilization

Results

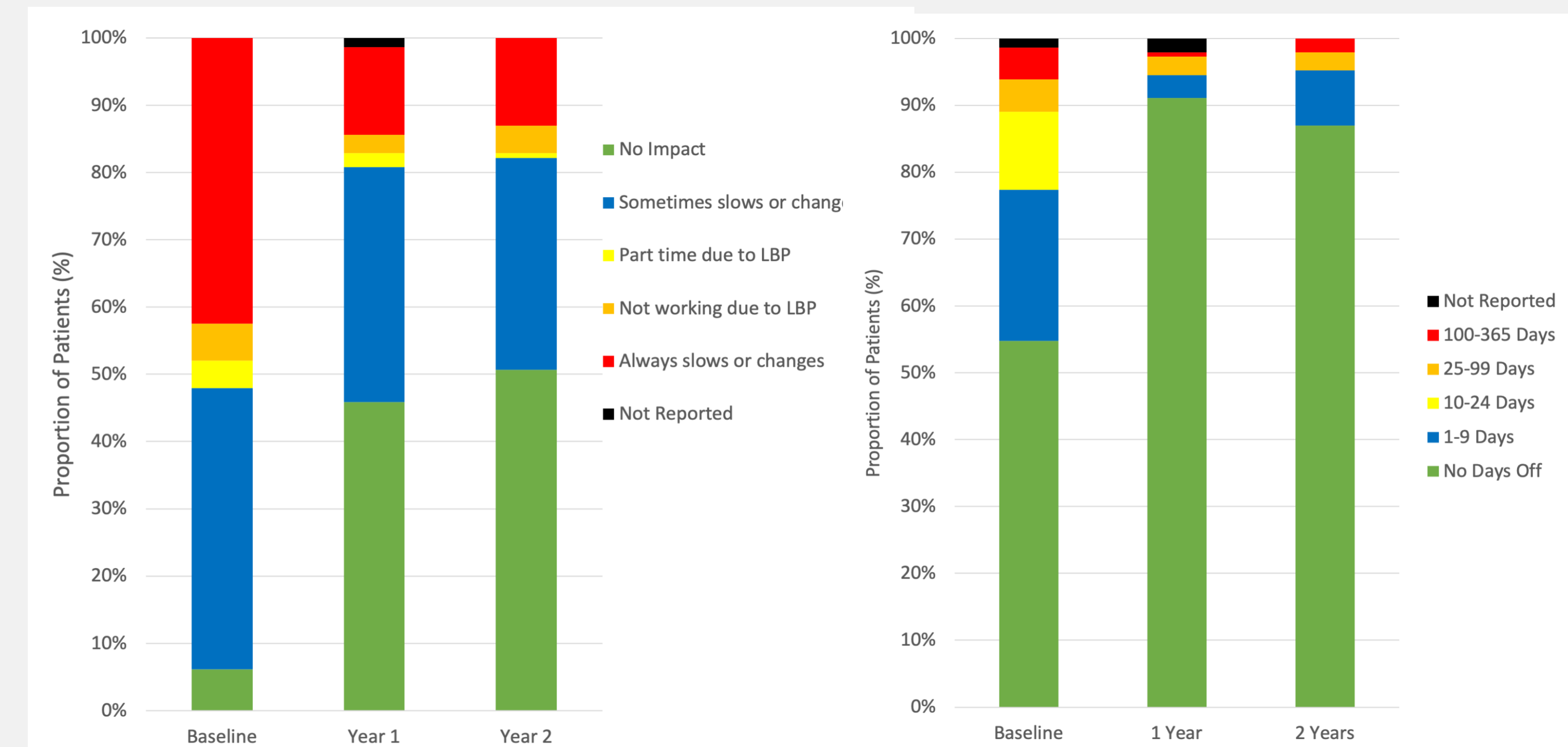
Pain Impact after 2-year follow-up

- N = 124 (84.9%) of all patients were in low impact pain class
- 85/103 patients (82.5%) transitioned from high to low impact pain
- 5/103 (4.8%) transitioned from high to moderate pain
- 13/103 (12.6%) remained unchanged



Presenteeism after 2-year follow-up

- Work performance assessed as “ability to do your work at its best” on 10-point numerical rating scale
- Baseline mean score (6.0±0.2) improved to 7.8±0.2, 8.1±0.2 and 8.3±0.2 at 6 months, 1, and 2 years, respectively.
- Proportion of patients rating their work ability as 9 or 10 was 87/146 (60%) after 2 years vs. 21/146 (14%) at baseline



Work Problems after 2-year follow-up

- Baseline = 137/146 (93.8%) of patients reported work problems due to CLBP
- 1-year follow-up = improved to 67/146 (45.9%) working *without* problems
- 2-year follow-up = 50.1% working *without* problems

