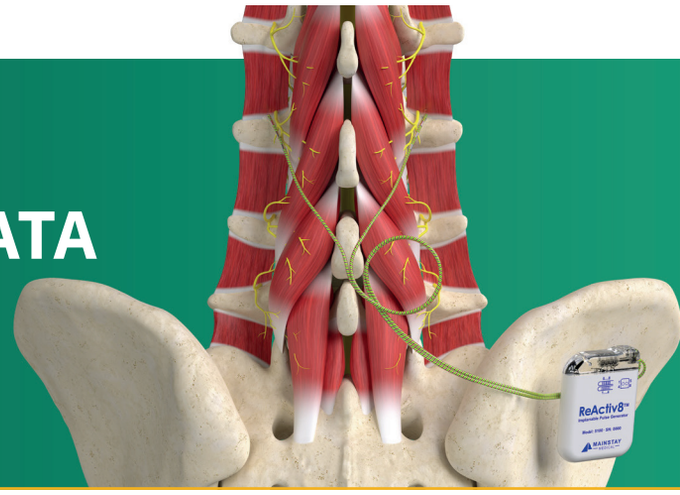
ReActiv8®

COMPELLING CLINICAL DATA

The most thoroughly researched neuromodulation therapy for mechanical CLBP globally



ReActiv8 Clinical Trials

RESTORE Trial

- ReActiv8 is superior to Optimal Medical Management (OMM) for the treatment of mechanical chronic low back pain (CLBP) associated with multifidus muscle dysfunction.
- 203 patients randomized 1:1 to ReActiv8 or OMM; 25 sites; average age 47 years, and an average 11-year history of CLBP, were included in the analysis.
- Clinically and statistically significant improvements in disability (Oswestry Disability Index), low back pain (NRS), and health-related quality of life (EQ-5D) at 1-year compared to OMM.


Restorative Neurostimulation Therapy Compared to Optimal Medical Management: A Randomized Evaluation (RESTORE) for the Treatment of Chronic Mechanical Low Back Pain due to Multifidus Dysfunction

ReActiv8 B-Trial: Five-Year Clinical Data

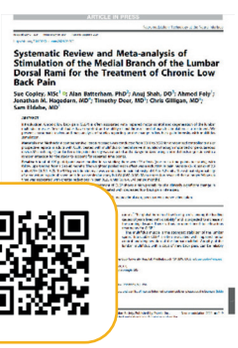
- Intent-To-Treat analysis was provided with Mixed Model of Repeated Measures imputation to account for 100% of patients (N=204)
- Patient improvements accumulated over time, consistent with restorative mechanism of action.
- Explants for success demonstrated increasing number of patients no longer needed treatment to maintain clinical benefit.


Five-Year Longitudinal Follow-up of Restorative Neurostimulation Shows Durability of Effectiveness in Patients With Refractory Chronic Low Back Pain Associated With Multifidus Muscle Dysfunction

Systematic Review and Meta-Analysis

Medial Branch Stimulation for Chronic Low Back Pain: Systematic Review and Meta-Analysis

- Medial branch stimulation significantly reduces chronic low back pain, with a mean reduction of 2.9 units on a 0-10 pain scale and a high 0.84 probability of achieving clinically meaningful pain relief.
- Sustained improved benefits in disability and quality of life while adverse events remained within expected ranges for neurostimulation therapies.


Systematic Review and Meta-analysis of Stimulation of the Medial Branch of the Lumbar Dorsal Rami for the Treatment of Chronic Low Back Pain

Mechanism of Action

Targeted Multifidus Activation Reduces Muscle Fibrosis Post-Disc Injury

- A total of 18 sheep with induced intervertebral disc degeneration were either given stimulation or not (control) and muscle tissue was analyzed for fibrosis markers after 6 months.
- Neurostimulated muscles showed significantly reduced fibrosis and Collagen-I at the stimulated L4 IVD injury level while no changes were seen in unstimulated muscle (L2 injury level). Collagen-III had no significant changes in either stimulated or control groups.
- Targeted multifidus muscle activation via neurostimulation effectively reduces fibrosis after intervertebral disc injury in sheep, suggesting potential benefits for treating low back pain by restoring muscle structure and function in humans.

Real-World Evidence

Restorative Neurostimulation: 2-Year Results in Elderly CLBP

- Data from 261 patients completing 2-year follow up from 3 clinical studies (ReActiv8-B, ReActiv8-C, and PMCF).
- Combination of RCT data and Real World Evidence.
- Statistically significant improvements in disability (ODI) and quality of life (EQ-5D-5L) were seen at all assessment time points compared to baseline.
- Consistent improvements in pain (VAS/NRS) at all time points compared to baseline.
- Patients derived significant and clinically meaningful benefit in disability, health-related quality of life, and pain, irrespective of age.

Restorative Neurostimulation for Chronic Back Pain: UK 3-Year Registry Result

- 3-year real-world data collected at 5 sites across the UK. 42 patients enrolled with 33 completing 3-year follow up.
- No formal inclusion or exclusion criteria enforced outside the IFU or outside indications of the CE Mark.
- 70% of patients reached the remitter threshold reporting mild to negligible pain (NRS ≤ 3) and 55% improved by more than 15 points on ODI.

Patient Selection

Restorative Neurostimulation: A Clinical Guide for Therapy Adoption

- Re-establishing multifidus muscle control in the midst of long-standing, ongoing chronic low back may not be feasible with physical therapy and exercise alone.
- In these cases, direct multifidus neuromuscular stimulation has shown to be a suitable next step to gain back motor control due to multifidus dysfunction.
- A combination of history, imaging, and multiple provocative maneuvers has allowed for increased accuracy in diagnosis, leading to excellent outcomes.

Precision Rehab for Multifidus Dysfunction in Chronic Low Back Pain

- Precision rehabilitation for chronic low back pain involves a structured, multi-phase approach, from pre-implant education, post-operative wound care and device usage, to re-education in quality movement
- Progression from initial activation to functional movement training spans 16 weeks, focusing on core control, mobility screening, activity-specific strength, and gradual return to intensive training.

Healthcare Economics

Economic Impact of ReActiv8 Publication 2023

- In addition to clinically meaningful improvements in pain and function with long-term durability, the overwhelming majority of patients transitioned from a high to a low-impact CLBP state.
- 71% of patients had High Impact pain at baseline that reduced to 10% at 2 years
- 85% of patients reported low-impact pain at 2 years.
- This is typically associated with significantly lower direct and indirect healthcare utilization levels.
- The recovery trajectory is consistent with a restorative mechanism of action and suggests that over the long term these health states will be maintained.

For a full list of physician resources, including a library of clinical data publications and journal articles, visit **https://mainstaymedical.com/clinical/**

The ReActiv8 System is an implantable neurostimulation system that employs a rehabilitative therapy designed to restore muscle control of the lumbar spine for improved low back pain management. ReActiv8 is a prescription device implanted by certified physicians in an outpatient setting. For important safety and product information, see www.mainstaymedical.com/safety.