

2023 NEHS Annual Meeting Abstract Submission

COMPLETE

NEHS Vice President, Daniel Mastella, M.D., is currently accepting abstract submissions for presentation at our Annual Meeting on December 1, 2023.

This meeting will be held at the Sturbridge Host Hotel in Sturbridge, MA.

Therapists, NPs, and PAs are also encouraged to submit.

THE DEADLINE FOR SUBMISSION IS OCTOBER 15, 2023

RESIDENTS AND FELLOWS ONLY. Please indicate if you want your paper to be considered for the prestigious H.Kirk Watson, M.D. Founder's Award. The abstracts for award consideration will be presented in the morning and the award will be presented in the afternoon.

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* ABSTRACT TITLE

Factors Associated with Successful Pain Mitigation Following Primary and Secondary Targeted Muscle Reinnervation in Amputees

* Contact Person Name

Floris Raasveld, MD

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*** Name of who will present abstract at NEHS meeting on December 1, 2023 Please note that the same person cannot present more than one abstract at the meeting.**

Carla Lehle, BS

* Please indicate if the presenter is:

Not currently a resident or fellow

*** List full names of abstract authors Please note - one of the lead authors must be present at the meeting to answer questions about the paper.**

Floris V. Raasveld, MD
Maximilian Mayrhofer-Schmid
Barbara Gomez-Eslava, MD, MMSc
Carla Lehle, BS*
Yannick A.J. Hoftiezer, MD
Kyle R. Eberlin, MD
Ian L. Valerio, MD, MS, MBA

* presenting author

*** ABSTRACT - should include background information and a description of methods, programs, or practices.**

Introduction: Targeted Muscle Reinnervation (TMR) is an effective modality in the surgical management of neuropathic pain for in amputees. TMR can be performed primarily (within 14 days of amputation) for prevention, or secondarily (>14 days post-op) for treatment of neuropathic pain. However, the specific patient cohort for whom this technique is most effective is not known.

Methods: Prospectively enrolled amputees who underwent TMR between 2018 through 2023, (minimum follow-up: 6 months). Demographic, surgery-related and pain data (NRS, 0-10) were analyzed. Sustainable pain remission and pain prophylaxis was defined as NRS of $\leq 3/10$ for ≥ 3 months until last follow-up. Multi-level mixed-effects models were utilized to analyze and visualize postoperative pain courses.

Results: One hundred twenty-eight amputees were included (1.9 years follow-up (IQR: 1.0-2.8)), of which 61 patients (47.7%) underwent Primary TMR. Following primary TMR, 54.1% of patients achieved sustainable pain prophylaxis and demonstrated significantly lower pain scores ($p < 0.001$), compared to other patients (Fig. 1). Following Secondary TMR, 50.1% of patients achieved sustainable pain remission and demonstrated significantly lower pain levels at 12-24 months postoperative ($p < 0.05$) compared to other patients (Fig. 2). In primary TMR patients, pain prophylaxis was associated with an absent history of depression, absent post-traumatic stress disorder, and absent smoking ($p < 0.05$). In secondary TMR patients, higher BMI, absence of psychiatric diseases and peripheral vascular disease were associated with pain remission ($p < 0.5$).

Conclusions: Following TMR, pain improvement was observed for both primary and secondary TMR patients. Psychiatric comorbidities appear to be a risk factor for worse outcomes in both groups.

Please attach files with diagrams and/or photos to support your abstract (10 MB limit)

tmr_pain_mitigation_abstract_nehs.docx

*** Please attach the abstract presenter's CV**

Submission: NEHS - Presentation
Category: Peripheral nerve
Subcategory: Amputation of the extremities
Keywords: Targeted muscle reinnervation, pain outcomes, associated factors

Title: Factors Associated with Successful Pain Mitigation Following Primary and Secondary Targeted Muscle Reinnervation in Amputees

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Words: 250 words

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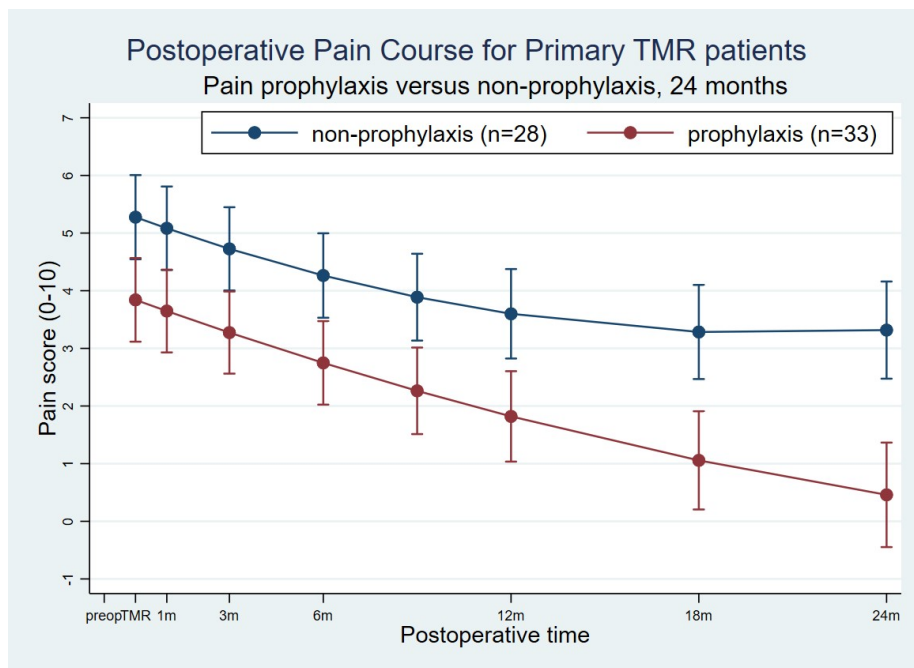


Figure 1: Primary TMR patients who achieve successful pain prophylaxis (red), versus patients who do not achieve this (blue). Adjusted linear prediction of the average post-operative pain with 95% confidence intervals. Abbreviation: TMR = Targeted Muscle Reinnervation

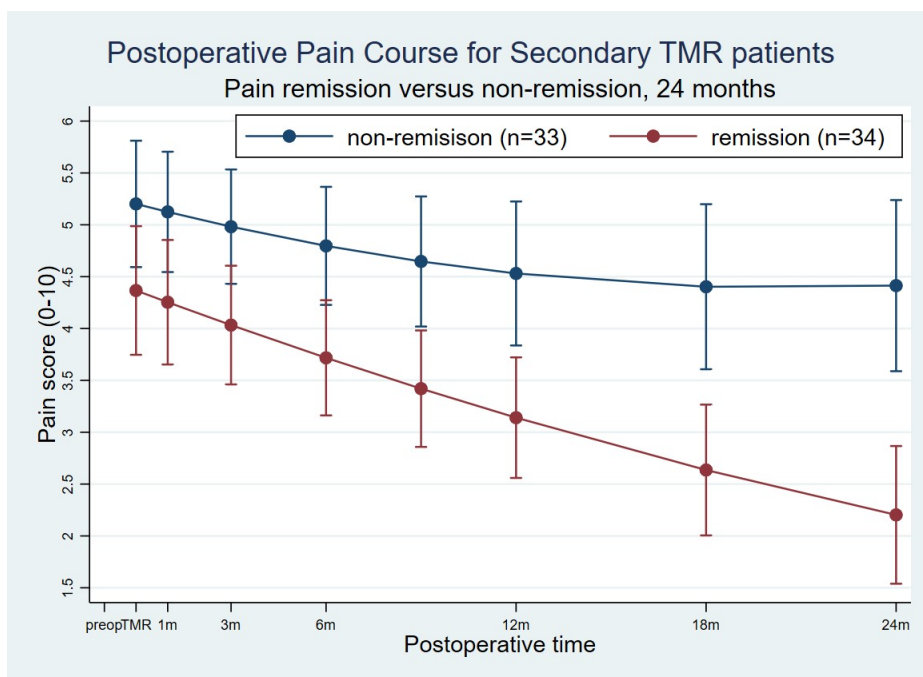


Figure 2: Secondary TMR patients who achieve successful pain remission (red), versus patients who do not achieve this (blue). Adjusted linear prediction of the average post-operative pain with 95% confidence intervals. Abbreviation: TMR = Targeted Muscle Reinnervation