

# Influence of BMI, gender and sports of pain decrease after Lumbar Medial Branch and/or cooled RF Lateral Branch Neurotomy in case of low back pain

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## Background

The Facet Joints and the sacroiliac joint (SIJ) complex have been identified as a common source of chronic low back pain. Low back pain is a common problem. The prevalence of facet joint (FJ) mediated low back pain is up to 31% - 45%, the prevalence for the SI Joint as a source of chronic axial low back pain is reported between 18% and 30%. Radiofrequency (RF) neurotomy has been investigated in recent years as a minimally invasive treatment option for Facet – and SIJ-mediated low back pain. The Testblock as Predictive Factor is certain. Predictive Co-Factors like BMI, Sex, internal diseases for successful and long term pain decrease are rare known.

## Objective

This retrospective study wants to show up the general outcome after radiofrequency neurotomy of lumbar medial branches and rami posterior of the SI Joint in case of low back pain 1, 6 and 12 months after treatment. Differences in the outcome depending on BMI, obesity, gender or age should be indicated as well as the possible reduction of opioids and NSAIDs.



L4 medial branch block



L4 mb Neurotomy



intraarticular SIJ block



Cooled RF Treatment SIJ

**Study Design.** The records of 160 patients with chronic low back pain who underwent treatment with RF medial branch Neurotomy (parallel needle technique) and/or cooled RF LBN in case of SI Joint mediated low back pain were identified. Subjects were selected for treatment based on physical examination and positive response (>50% pain relief) to an lumbar medial branch block/Ramus dorsalis L5 block or intraarticular SIJ block. Lumbar medial branches L3 and L4 and the ramus dorsalis L5 were lesioned in International Spine Intervention Society (SIS) parallel needle technique (n=43). Cooled RF LBN involved lesioning the L5 dorsal ramus and the lateral branches of the S1 - S3 dorsal rami for the treatment of SI Joint.(n=109). Visual analog scale (VAS) pain scores, quality of life, BMI, medication usage, and satisfaction with pain management were collected before the procedure, at 1 month post\_procedure (n=160), and again after 6 (n=73) and 12 months (n=89) post\_procedure.

## Results

A VAS decrease of 4 points on a 10 point scale (8 to 4) in the overall group was seen after 6 months and 4.5 after 12 months. Lower medication usage was demonstrated with a decrease in opioids by 40%, and NSAIDs by 60%. The decrease in reported pain was shown to last for 12 months. Our data illustrate significant better outcomes for patients with a BMI lower than 30. There is no difference in the reported decrease in VAS that is gender specific. The pain decrease in the no sport group is reported from 8,2 to 4,5 after 6 months and 5,4 after 12 months versus the group doing sport exercises at least once to three times a week from 7,9 to 3,9 after 6 months and to 4,2 after 12 months. There were no severe or moderate complications during or after all procedures.

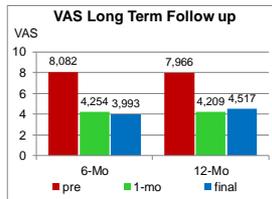


Fig. 1.: Total group, pre, after 6 and 12 months

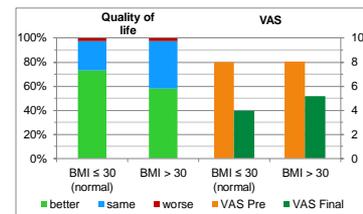


Fig.2.: BMI Dependence

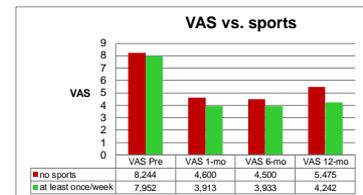


Fig.3.: Sports Dependence

## Conclusions / Discussion

The data may suggest the use of RF treatment in case of low back pain as a proper treatment option as well as the probability of 95% to have a NAS decrease of 3-4 points on the NAS (0-10) scale. There is a significant better outcome in the group with a BMI less than 30 as well as in the group doing sports at least once a week. The better long term pain relief in the group doing 1-3 times sports a week for at least 30 minutes is a motivation for the authors keeping the patients in motion. It could be indicated, that treatment with RF methods in case of chronic low back pain is a safe, long term effective, and pain reducing treatment option.