# Are Pain Scores an Appropriate Measure of Trial Success and Long-term Efficacy, in Chronic Pain Patients treated with Spinal Cord Stimulation?

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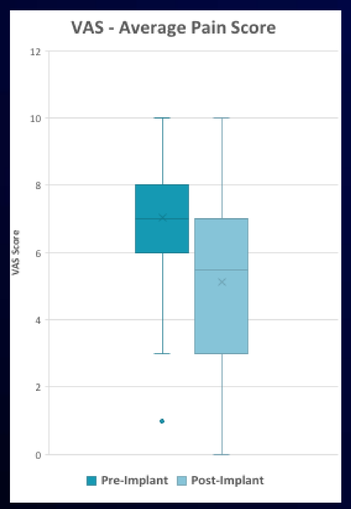
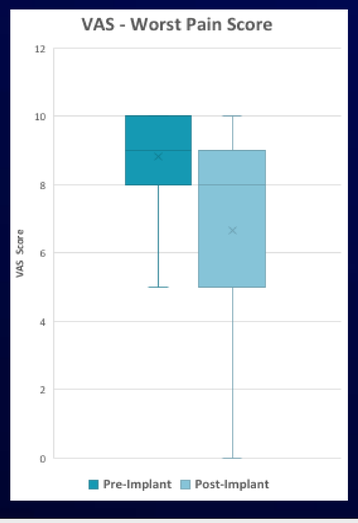
## Introduction

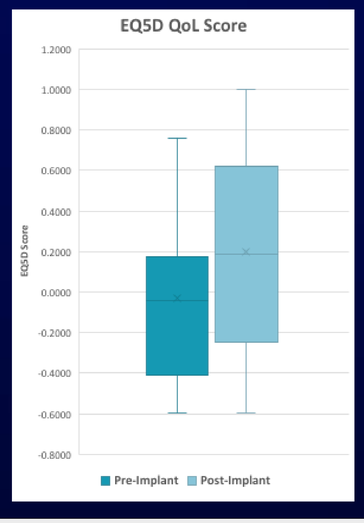
Spinal Cord Stimulation (SCS) is recommended by the National Institute of Health and Care Excellence (NICE) guidelines for the management of patients suffering from chronic neuropathic pain. The guidelines suggest patients should complete a trial period prior to full implantation. A majority of literature appears to have measured trial success by a given reduction in Visual Analogue Scale (VAS) or numerical rating scale (NRS) pain score over 1-2 weeks (often quoted at ≥50% reduction). The literature also appears to measure the long-term efficacy of SCS using VAS/NRS pain scores, suggesting that SCS is effective only when pain scores reduce significantly.

## Methods

Retrospective data from patients with SCS treatment between September 2015 and December 2016 was collected. Pain and Quality of Life (QoL) scores pre- and post- implantation were collected using paper files and electronic records. This data was collated and analysed using STATA.




## Results

Pain and QoL scores for n=185 participants were analysed. The age range was 18-92, there were 92 males and 93 females. Trial failure rate was 14.1%, the most common reason being insufficient pain relief. Of the n=142 fully implanted participants only 26% had a ≥50% reduction in 'average pain' VAS scores, however there was statistically significant reduction in 'average' and 'worst' VAS pain scores ($p<0.0001$). Furthermore, there was a significant increase in EQ5D QoL scores ($p<0.0001$). This data is displayed in the Box Plots.

## Discussion

Literature suggests that unidimensional scoring systems, such as VAS/NRS pain scores, are not an effective tool for assessing chronic pain. This was reflected in Leeds Teaching Hospitals Trust (LTHT), where cross-referencing clinic letters with patient reported VAS pain scores demonstrated a discrepancy between verbally reported benefit and VAS score. Furthermore, QoL scores reflect restoration of function and hence could be superior in assessing efficacy of SCS.

## Conclusion

The improvement in both VAS pain and EQ5D QoL scores in LTHT allows for various conclusions to be made about the efficacy of SCS. these include:

- Multidimensional measures should be analysed in future research to reflect clinical practice; where function, pain and QoL will all influence progression to full implant and demonstrate success of treatment
- Reduction in opioids and anti-neuropathic drugs are also a key indicator of success, future research should account for this.
- The development of guidance with regards to trial success may be necessary to ensure patients do not fail trial based purely on VAS/NRS pain scores.

The Leeds Teaching Hospitals NHS Trust

### References

NICE. Spinal cord stimulation for chronic pain of neuropathic or ischaemic origin: Guidance and guidelines [online]. 2008 [accessed 2017 Sep 6]. Available from: https://www.nice.org.uk/guidance/ta159/chapter/2-Clinical-need-and-practice

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