Action Potential Simulation (APS) Therapy for pain in people with MS; report on a two year pilot study
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Introduction
People with MS commonly suffer from pain. Overall prevalence is 63% and up to 80% experience significant pain during the disease course. Neuropathic pain is particularly often resistant to treatment, or hard to resolve due to the unwanted side-effects of most of the appropriate drugs. Electrotherapies can contribute to the management of pain in MS. We heard of some exceptional case-studies using the micro-current Action Potential Simulation (APS) Therapy in MS.
APS Therapy simulates the discharge of electricity along a cell, known as an "action potential" for therapeutic effect, primarily pain relief. Despite literature review of up to 50 papers showing promise in pain relief and enhanced healing by micro-currents, published research on APS Therapy for pain in MS was not available. For this reason, this study was carried out.

Methods
People who presented in the MS nurse’s clinic with pain were screened for assistance; this was given by volunteers, staff, or their informal carers. People who presented in the MS nurse’s clinic with pain were screened for the following criteria: participation in the study, willingness to participate, no contraindication for the use of APS Therapy. We recruited 94 participants over the 2 year study period. The average age was 48 (SD = 12.6). A sample of 48 participants were women and 12 were men. The mean age was 51.5 years (SD = 12.6). N:94, M=91.1 F=48.

Results
Participants in this study, most of whom had MS, had a significant reduction in pain. APS Therapy seemed to be a safe and effective therapy to try in cases of neuropathic pain due to the loss of myelin. APS Therapy replicates the passage of action potentials; and voltage gated ion channels remain a key target for pharmaceuticals. In the context of available research on the subject, we can stimulate further, robust measures for. 10 individuals had significant neuropathic pain, 10 were women and 10 were men. The mean age was 49.2 years (SD = 13.3). N:10, M=48 F=10.
Pain was measured using the Visual Analogue Scale (VAS) for "usual" and "worst" pains with final score. In order of incidence of reporting, benefits were:
- 75 participants (80%) experienced significant pain during the disease course.
- 19 participants (20%) had no pain.
- The mean VAS score reduced from 5.46 (SD = 2.22) to 2.65 (SD = 2.58) after the intervention.
- The mode of action of APS Therapy is not fully understood. It has been postulated that by applying external action potentials, the removal of inflammatory products is assisted, providing relief of nociceptive pain.

Discussion
Conclusion

Acknowledgements & Disclosures
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Appendix
Participants in this study, most of whom had MS, had a significant reduction in pain. APS Therapy seemed to be a safe and effective therapy to try in cases of neuropathic pain due to the loss of myelin. APS Therapy replicates the passage of action potentials; and voltage gated ion channels remain a key target for pharmaceuticals. In the context of available research on the subject, we can stimulate further, robust measures for.

Pain Relief
- reduced fatigue
- improved sleep
- reduced spasticity
- reduced mobility
- improved mood
- reduced incidence of urinary tract infection

A new therapy called APS therapy is increasingly being used to treat pain in people with MS. This therapy involves applying electrical currents to the skin, which can stimulate the release of neurotransmitters and reduce pain. The mode of action of APS Therapy is not fully understood, but it is thought to work by stimulating the electrical discharge of action potentials along nerve cells, and by activating pain-modulating circuits in the brain.

References