

# Action Potential Simulation (APS) Therapy: A Novel Approach For Management Of MS Related Pain

Authors: Dr. Scot Richardson, GP STR3, Dr. Alida Van Der Plaat, Speciality Doctor Palliative Medicine, Dr. Raghu Raghunath, GP Principle, Jane Fowler, MS Nurse Specialist.



Dr. Scot Richardson,  
 GP Registrar ST3,  
 St. Andrews Group Practice



Dr. Alida Van Der Plaat,  
 Speciality Doctor  
 Palliative Medicine



Dr. Raghu Raghunath,  
 GP Principle,  
 St. Andrews Group Practice

## Summary:

It is estimated that up to 80% of patients with MS experience pain at some stage in their illness. Pain in MS is often overlooked, misdiagnosed or poorly treated. It is also noted that patients may not complain about their pain, but 30% consider it to be one of their worst symptoms second only to fatigue.

Through our work with MS patients we have seen first-hand the significant impact pain can have on patients with MS. It is with this knowledge we decided to trial an innovative therapy for their symptom control.

APS Therapy, a micro-current electric therapy, simulates the body's own action potential resulting in increased blood and lymph flow thus facilitating removal of waste products from the cell, leading to a number of benefits including pain reduction.

APS Therapy has no high level evidence at present and is not widely known in the UK. It is however used in Europe for management of chronic pain. In a small cohort of patients we have anecdotal evidence of a significant benefit.

*"This machine has transformed my life... I feel normal again as I can go out like everyone else."*

(60 year old widow, socially isolated because of pain)

## Methodology:

### Pre-Service Phase:

Development of forms and templates for assessment and evaluation during the service through peer group meetings.

Training of APS Therapists.

Apply through Hull CCG for commission support to develop service.

### Operational Phase:

A MDT clinic will run every 2 weeks from 2 separate sites in the city of Hull. The clinic will consist of a doctor with a special interest in pain and APS therapy and a MS Nurse Specialist.

Patients will initially be offered:

- A holistic assessment of their current symptoms and needs
- Medication review
- Signposted to existing services if appropriate
- 6 week course of 3 x weekly APS Therapy treatments
- 6 weeks review of APS Therapy
- Support to secure funding for an APS Device to use at home
- Further reviews as appropriate

### Evaluation Phase:

We will use the following assessment tools to evaluate the service:

1. Brief Pain Inventory
2. A modified Spasm frequency Scale (to be decided)
3. Leeds Multiple Sclerosis Quality of Life Scale (LMS-QoL)

## Anticipated Results:

- Reduction of pain
- Reduction of additional symptoms such as spasms, insomnia and bladder frequency
- Overall improvement in Quality of Life
- Reduction in medication costs
- Reduction in inappropriate use of current services
- Disseminate information to Hull CCG and the wider MS community

## Conclusions:

This community based holistic, multi-disciplinary service will significantly enhance the existing services and improving access for patients with MS living in Hull.

APS Therapy will be an innovative approach in the overall integrated management of MS related chronic pain, encouraging and promoting self-management.

## Further Work:

This service has potential to be developed in several ways:

- Wider application of APS use in other chronic pain conditions such as Arthritis, Post Stroke Pain and Chronic Fatigue Syndrome to name just a few.
- Creating a model for pain management that can be reproduced in other localities or services; specifically in pain clinics and rehabilitation services.
- To provide further evidence and support towards research.



## Aims and Objectives:

The aim of this project is to develop a holistic community primary care based service for patients in Hull with Multiple Sclerosis (MS) related pain.

### The Objectives of this Programme are:

- a) To provide a holistic, person centred, cost-effective, and systematic approach to managing pain in patients with MS.
- b) To assess and manage patients with MS using an innovative approach involving APS Therapy.
- c) To rigorously evaluate the impact of APS on pain outcome, spasms and Quality of Life.
- d) To provide basic information on the cost and effectiveness of the APS approach to pain management in MS patients.
- e) To promote self-management and active participation in their disease management.

