Tips and Tricks

Electrical Stimulation to Assist Stretching Long Finger Flexors

Joe Green Lead Physiotherapist/Clinical Tutor

Stretching the long finger flexors through full passive range is an important activity to prevent soft tissue change and contracture in neurologically impaired patients with upper limb spasticity.

Completing this treatment can however be exceptionally challenging for many patients to perform independently, as they may be unable to position the wrist and fingers in such a way that they can control the joints and gain a stretch position.

The use of medication, botulinum toxin, splinting may help, but these interventions are not without their practical difficulties and may not be readily available.

In Salisbury we have had success with the use of electrical stimulation during the stretching procedure to enable inhibition of the overactive muscle groups, thereby making positioning of the wrist and fingers much easier.

Single channel stimulation of either Lumbricals or Forearm Extensors may achieve the desired effect. In some cases however the spasticity is so severe that various combinations of stimulation with a two channel device is required. We have had particular success with the following set up:

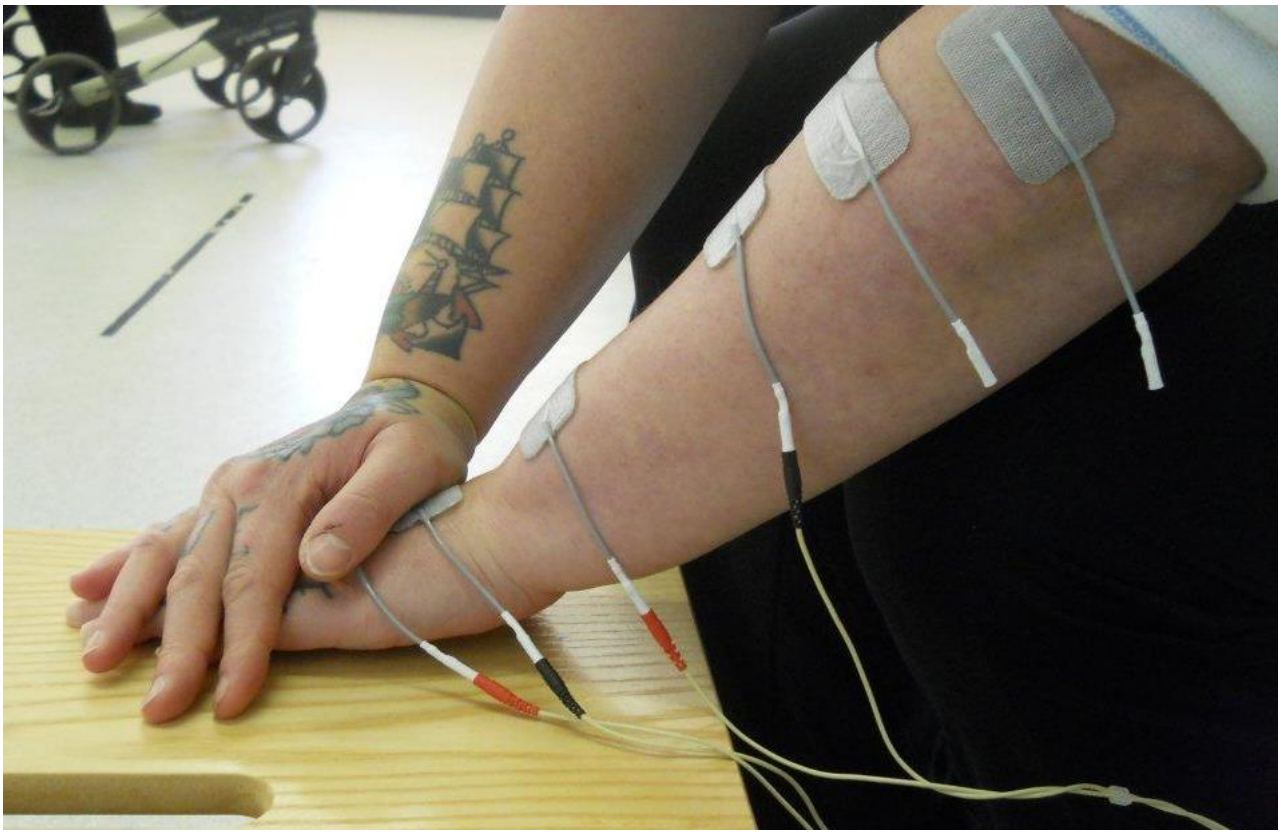
Microstim 2 V2: Mode 7

Ch1 Wrist/Finger extensors
Ch2 Lumbricals

Current balanced between the two channels to ensure optimal posture

Example: Stroke Patient

Severe spasticity in Long finger and wrist flexors (Modified Ashworth Score 4/5)



Long Finger Extensor and Lumbrical stimulation on Mode 7 in this picture enables a good starting position to perform an effective stretch.

Note: A similar use of electrical stimulation can support the wearing of splints when application or even prolonged wearing is challenging. In this situation a frequency of 20 Hz may be appropriate to minimise fatigue