FRANKSTON
PAIN MANAGEMENT
Maximising Function | Minimising Pain & Suffering

SCRAMBLER THERAPY
(Calmere Therapy / Neuroplastic Therapy)

Scrambler Therapy is a non-invasive, painless (or minimal discomfort) medical therapy that is performed in an Outpatient Clinic.

This primarily benefits patients troubled with chronic/persistent neuropathic pain of any cause. Some examples include but not limited to the following: CRPS (Complex Regional Pain Syndrome),post chemotherapy induced peripheral neuropathy, chronic post-surgical pain, post-herpetic neuralgia, post-operative sciatic, persistent spinal pain syndrome and other associated nerve pain, others causes of neuropathic pain.

WHAT HAPPENS AT A SCRAMBLER THERAPY SESSION?

Electrodes similar to ECG pads are placed on the skin. A stimulator cable is attached to 2 of these pads. A total of 5 cables attached to a maximum of 10 pads. These cables are attached to the Scrambler machine (MC-5A scrambler). Not all cable attachments are required. This is dependent upon individual patients and their diagnosis.

The electrodes are placed above and below the area of pain but not at the site of pain. Each electrode is turned on and a response to stimulation must be relayed to the physician operating the machine. Initially patients may experience a slight "mild bee sting" like sensation. This should settle in a matter of seconds. Thereafter patients may feel a varying sensation of "buzzing or tingling" but should experience no pain. If it is painful, patients should tell the doctor/nurse and the site of electrode placement may need to be changed to a different position. There will be constant varying of the stimulation algorithm sensation as pre-set by the Scrambler machine.

Once the optimal electrode placements are satisfactory, the therapy will proceed for 30 to 40 minutes. The total time for each session is approximately 1 hour. Patients must commit to attending 10 consecutive daily sessions (excluding weekends).

In the initial sessions, patients should feel pain relief ranging for several hours. With each session, the duration of pain relief should be longer. By about the 7th to 8th session, pain levels should have reduced more than 70% to 80%. At the end of 10 sessions, if the treatment sessions are successful, there should be significant reduction in pain relief for several months or longer. If there is a recurrence of pain, patients can opt to receive 1 to 5 "booster" therapy sessions.

In a small percentage of patients, this therapy may not be effective, or the placement of the electrodes may have been incorrect. If there is no benefit within the first 3 sessions the Scrambler therapy will be abandoned.

HOW DOES SCRAMBLER THERAPY WORK?

Chronic pain is caused by constant irritation of small nerve fibres that transmit impulse to the spinal cord and thereafter to mid-brain and cerebral cortex (main brain). There is a constant "loop" between the site of pain and interpretation by the brain. During this process there are changes in pain pathways (neuroplasticity).

By stimulating the non-painful "C" away from the painful sites, we are sending painless messages to the brain thereby "scrambling" or altering pain messages and attempting to interrupt pain signals. In other

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words, we are creating further neuroplastic changes to our nervous system and creating a "painless loop" instead. We are retraining and "re-wiring" nerve transmission and perception to pain.

HOW DOES THIS COMPARE WITH TENS?

TENS stimulates large sensory fibres at high amplitude at the site of pain. There is no variation of impulse or stimulation algorithm and after a period (minutes) it is ineffective. Once the TENS is switched off, pain returns. TENS is self-administered. Scrambler Therapy is conducted by a Pain Physician. The mechanism of action is different and more complex.

IS THIS THERAPY WIDELY AVAILABLE?

Professor G Marineo initiated the science and clinical practice of this therapy about ten years ago in Rome, Italy. After refinement it became available in several countries in Europe and in the last 5 years in the USA, Korea and Japan. This therapy is currently being used at the Mayo Clinic, Johns Hopkins University Hospital and several other major teaching hospitals in the USA. The American defence force hospitals use this therapy for injured soldiers.

WHAT IS THE SUCCESS RATE?

From the information to date, about 70% to 80% of patients undergoing this therapy have been very happy. It has improved their life in general, with minimal or no more medications and improved emotional state of mind. It may not be suitable for all pain sufferers. Selection criteria, cause of pain, technical aspects of the therapy play a part in outcome.

IS THIS COVERED BY MEDICARE, HEALTH FUNDS OR WORKERS COMPENSATION?

It is not currently covered by Medicare or Private Health funds. Worker Compensation, Motor Accident Insurers and Department of Veteran's Affairs will consider funding this therapy.

WHAT HAPPENS TO MY CURRENT MEDICATIONS?

Patients will be weaned off anticonvulsant and antidepressant medications. These medications tend to interfere with scramble therapy nerve pathways or tend to delay success. High dose opioids need to be reduced significantly.

ARE THERE ANY SIDE EFFECTS?

There are no known side effects. This is a major advantage.

ARE THERE SOME PATIENTS WHO CANNOT RECEIVE THIS THERAPY?

Yes. Patients with the following are not suitable for Scrambler Therapy:

Implanted pacemakers	Skull plates	Vena cava clips
Aneurysm clip	Brain injury sufferers	Unstable/untreated mental health
Recent myocardial infarction	Pregnant or breast feeding	Epileptics
People taking anticonvulsants medication		

Implanted Spinal and peripheral stimulators need to be turned off for a number of weeks. This will be discussed with the individual patients.

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REFERENCES:

1. Childs DS, Le-Rademacher JG, McMurray R, et al. Randomized trial of scrambler therapy for chemotherapy-induced peripheral neuropathy: crossover analysis. J Pain Symptom Manage. 2021;61:1247–1253.
2. Kashyap K, Bhatnagar S. Evidence for the efficacy of scrambler therapy for cancer pain: a systematic review. Pain Physician. 2020;23:349–364.
3. Loprinzi C, Le-Rademacher JG, Majithia N, et al. Scrambler therapy for chemotherapy neuropathy: a randomized phase II pilot trial. Support Care Cancer. 2020;28:1183–1197.
4. Marineo G, Iorno V, Gandini C, Moschini V, Smith TJ. Scrambler therapy may relieve chronic neuropathic pain more effectively than guideline-based drug management: results of a pilot, randomized, controlled trial. J Pain Symptom Manage. 2012;43:87–95.
5. Mealy MA, Kozachik SL, Cook LJ, et al. Scrambler therapy improves pain in neuromyelitis optica: a randomized controlled trial. Neurology. 2020;94:e1900–e1907.
6. Nayback-Beebe A, Panula T, Arzola S, Goff B. Scrambler therapy treatment: the importance of examining clinically meaningful improvements in chronic pain and quality of life. Mil Med. 2020;185(suppl 1):143–147.
7. Smith TJ, Razzak AR, Blackford AL, et al. A pilot randomized sham-controlled trial of MC5-A scrambler therapy in the treatment of chronic chemotherapy-induced peripheral neuropathy (CIPN). J Palliat Care. 2020;35:53–58.
8. Starkweather AR, Coyne P, Lyon DE, Elswick RK Jr, An K, Sturgill J. Decreased low back pain intensity and differential gene expression following Calmare®: results from a double-blinded randomized sham-controlled study. Res Nurs Health. 2015;38:29–38.
9. Lee SY, Park CH, Cho YS, Kim L, Yoo JW, Joo SY, et al. Scrambler Therapy for Chronic Pain after Burns and Its Effect on the Cerebral Pain Network: A Prospective, Double-Blinded, Randomized Controlled Trial. J Clin Med 2022 Vol. 11 Issue 15. Accession Number: 35893347 PMCID: PMC9332864 DOI: 10.3390/jcm11154255

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