

## Pulse Radiofrequency Treatment

Pulsed radiofrequency treatment (pRF) appears to be a less harmful alternative to the well established continuous radiofrequency thermocoagulation (tRF) in the management of certain chronic pain syndromes such as neuromas, occipital or trigeminal neuralgia, persistent sciatica, shoulder, knee pains. PRF is a fairly new minimally invasive procedure that disables and prevents a specific nerve from transmitting pain signals.

Conventional tRF is thought to relieve pain by heating and coagulating the target nerve, causing indiscriminate destruction of both small and large nerve fibers. Conventional tRF carries the risk of causing neuritis/neuralgia (nerve pain), especially if applied to nerves supplying skin or spinal ganglia.

PRF is a non-destructive, low temperature alternative treatment that applies a precisely targeted pulsing electrical field around the target nerve for 20 ms every 480 ms for 2-4 minutes that 'stuns' rather than destroys the nerve and making the nerve incapable of transmitting pain signals. Although it is not known how pRF works, it is thought to induce long lasting biochemical changes in the target spinal nerves without disrupting sensation or motor function and much lower risk of causing neuritis. For many patients PRF is an effective treatment that may provide relief for 6-9 months or longer. Treatment can be repeated if there was a good response to the first PRF.

### WHAT ARE THE RISKS?

As with any medical procedure, there are risks and although rare, the risks may include: treatment failure, bleeding, infection, nerve or spinal cord injury, neuralgia, increased pain and drug reaction, although no serious complications have been reported in the literature.

### PREPARATION:

- Do not eat or drink for 4 hours before the treatment in case sedatives are required.
- Essential medications may be taken with a sip of water (Except blood thinners and diabetic medication which needs individual instructions)

### HOW IS THE PROCEDURE PERFORMED?

The skin over the injection site is thoroughly cleaned and then numbed using a local anesthetic and a sedative may be administered if required. Real-time xray (fluoroscopy) or ultrasound may be used to accurately position a special needle near the target nerve and gentle electric pulses that cause muscle twitches or tingling sensations may be used to confirm that needle placement. Unlike the more traditional radiofrequency "burn", the pulsed technique is so gentle that it does not require that the target nerve be numbed. This procedure is repeated for each target nerve. Patients may feel a mild pulsating feeling in the area during the "stunning" and the treatment is usually uncomfortable rather than painful.

### POST PROCEDURE:

Some post-procedural discomfort or pain should be expected. Usually an over-the-counter paracetamol or NSAIDs are sufficient to relieve this discomfort, sometimes stronger analgesics may be required. It is important to resume normal activity. Pain relief and functional improvement from this treatment develops progressively over the next few hours/days and is usually maximal within 1 week.

### DISCHARGE INSTRUCTIONS:

1. Avoid strenuous exercise for 12 hours, gradually increase range and intensity of normal activity.
2. Report fevers >38°C, unexpected redness or severe pain, new numbness or weakness.
3. Apply ice to painful areas for 24 to 48 hours.
4. Protect and support of the affected area if weakness or paralysis occurs.
5. Please make a review appointment in 3 - 4 weeks.