

## AAPM 2017 ANNUAL MEETING ABSTRACTS

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#### Electric Cell Signaling of Nerves Reduces the Need for Opioids

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**Introduction:** The opioid epidemic that currently faces America caused 47,050 drug overdose deaths in 2014 or 5.37 deaths an hour according to the CDC, and represents a serious threat to the health of all Americans. [1] Mindfulness-Based Stress Reduction, yoga, exercise, and cognitive-behavioral therapy represent non-narcotic treatments that have shown some success in reducing the use of narcotics. [2] Electric cell signaling of nerve cells has produced effective and safe results in reducing neuropathic pain. [3] This study reports that electric signaling of nerve cells reduces the use of opioids. **Materials and Methods:** Sixteen patients with an average age of 52 (24–89) and a variety of pain syndromes involving their back, joints or nerves voluntarily consented to undergo treatment with electric cell signaling treatment (EST) [4] and sometimes combined EST with injections of local anesthetics (CET). [5] These patients received, on average, 23.25 treatments (5–95) over a 1–12-month period of time. **Results:** These 16 patients experienced, on average, a 66% reduction in their use of opioids. Fifty-six percent reduced their opioid use by at least 50%, and 44% stopped their opioid use altogether. There were no adverse side effects. **Conclusion:** In this small pilot study, 16 patients, who received EST and/or CET experienced a significant reduction in their use of opioids, with nearly 50% stopping their opioid use altogether for 6 months after treatment. These results document the need for further studies to validate the usefulness of EST/CET therapies. **References:** 1) Rudd RA, Aleshire N, Zibbell JE, Gladden RM. Increases in drug and opioid deaths—United States, 2000–2014. *MMWR Morb Mortal Wkly Rep.* 2016 Jan 1;64 (50–51) 1378–82. 2) Cherkin DC, Sherman KJ, Balderson BH, Cook AJ, Anderson ML, Hawkes RJ, Hansen KE, Turner JA. Effect of mindfulness-based stress reduction vs cognitive behavioral therapy or usual care on low back pain: a randomized clinical trial. *JAMA.* 2016 235(12): 1240–

1249. 3) Carney PM. Quantum theory treats neuropathy better than pharmacology. *The Pain Practitioner.* Winter 2014: 28–31.

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#### Sustained Response of New Daily Persistent Headache to Radiofrequency Ablation of Pericranial Nerves

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New daily persistent headache (NDPH) is a rare headache disorder with a chronic, daily presentation from onset. Treatment is difficult, with patients often having decades of symptoms despite aggressive measures. To date there are no reports of using radiofrequency nerve ablation (RFA) to treat medically refractory NDPH. A 47-year-old male veteran with myocardial infarction status postcoronary artery stenting was diagnosed with NDPH, migraine phenotype, after new onset daily headaches began on a precise date in the context of military liquid chemical exposure but no trauma. The symptoms were right hemicranial, daily, severe and refractory to prevention and rescue with multiple agents for 2 decades. The veteran was maintained with high doses of daily opiates until he underwent conventional RFA of right supraorbital, greater, and lesser occipital nerves after a series of successful diagnostic blocks. Since initiation of this therapy roughly 6 years ago he has continued to receive RFA of the aforementioned nerves every 6 months. He now suffers from severe headaches 3 days per month and mild headaches roughly 15 days per month with other days being pain-free. He has significantly reduced his opiate use and has returned to full time work, previously being disabled. RFA has been applied to refractory cases of other chronic headache disorders including cervicogenic headache, occipital neuralgia, and hemicrania continua but has not been reported in NDPH. RFA of the pericranial nerves may work by directly reducing head pain, and indirectly by modulating the trigeminal nucleus caudalis via upper cervical interconnections. **References:** 1) Rozen TD. New daily persistent headache. *Curr Opin Neurol.* 2011;24(3):211–216. 2) Hamer JF, Purath TA. Response of cervicogenic headaches and occipital neuralgia to radiofrequency