

CHRONIC DAILY HEADACHE TREATED NON-PHARMACEUTICALLY WITH A NOCICEPTIVE TRIGEMINAL INHIBITION DENTAL SPLINT

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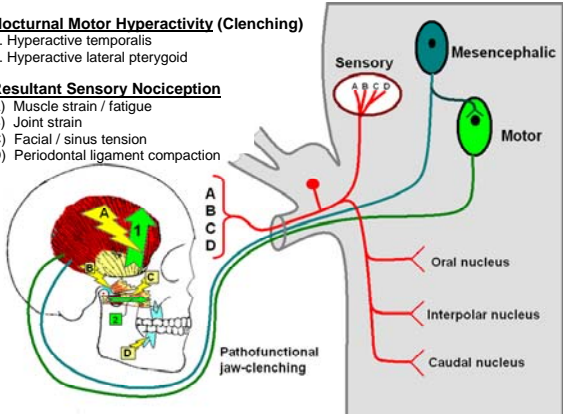
Background – The NTI (Nociceptive Trigeminal Inhibition) intraoral device is FDA approved for the prophylactic treatment of medically diagnosed migraine pain and is hypothesized to reduce noxious afferent activity through reduction of intensity of nocturnal hyperactive trigeminal motor activity (jaw clenching).

Nocturnal Motor Hyperactivity (Clenching)

1. Hyperactive temporalis
2. Hyperactive lateral pterygoid

Resultant Sensory Nociception

- A) Muscle strain / fatigue
- B) Joint strain
- C) Facial / sinus tension
- D) Periodontal ligament compaction



Molar and canine tooth contact allows for pathologic intensity of trigeminal motor hyperactivity (nocturnal jaw clenching)



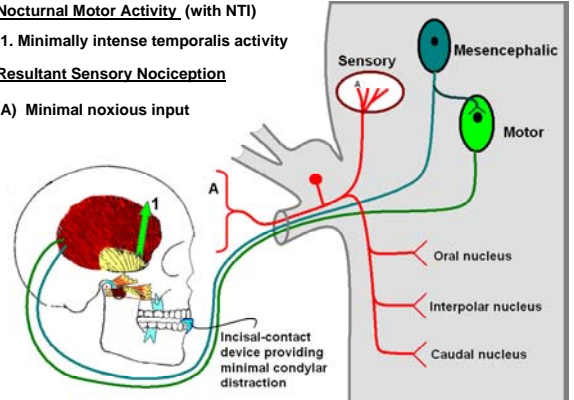
An NTI device is custom made by a dental professional, providing only for incisor-edge contact and minimal jaw-opening (to minimize TMJ strain)

Nocturnal Motor Activity (with NTI)

1. Minimally intense temporalis activity

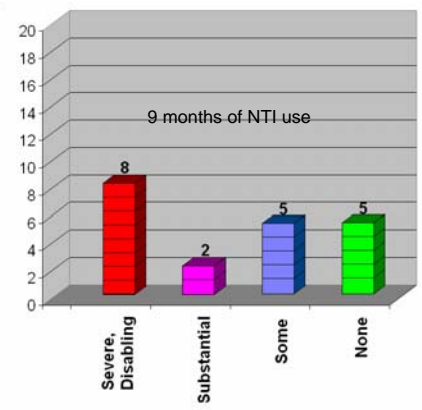
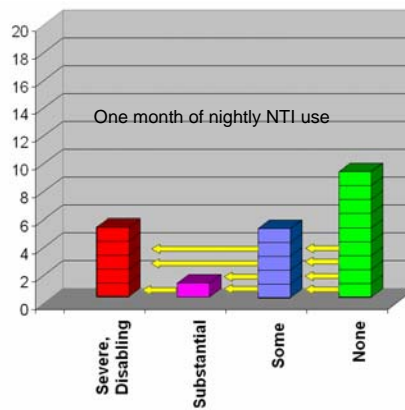
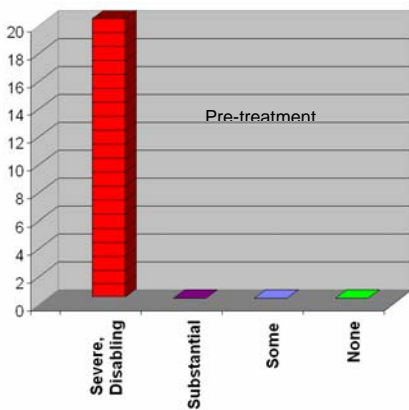
Resultant Sensory Nociception

- A) Minimal noxious input



Providing for only incisor-edge contact with an NTI device minimizes trigeminal nociception.

Methods - 20 consecutive CDH patients treated in a headache center, scoring "severe and disabling" on their HIT-6 questionnaire despite maximal oral prophylactic medication, were properly fitted with an NTI device and wore nightly for 9 months. At initiation of therapy, subjects reported waking headache-free only .4 mornings per week. HIT-6 questionnaires were completed, and number of headache-free mornings per week reported, at 4 wks, 8 wks, and 9 months following the initial fitting.



Results – By the fourth week of nocturnal NTI use, nearly 75% reported significant positive improvements in their HIT-6 scores. By the second month, all HIT-6 scores had stabilized. Following seven months of continual nocturnal NTI use, 50% reported considerable improvement in the quality of their lives, with half of those reporting that their headaches no longer had any impact on their lives. Positive responders (65%) reported a 1250% average increase in headache-free mornings per week (.4/week to 5/week).

Conclusions – The considerable long-term improvement on the lives of the majority of patients with severe and disabling intractable Chronic Daily Headache, and considerable increase in headache-free morning upon waking over a nine-month period, well after the cessation of placebo effect as a confounding factor, suggests that intense nocturnal jaw clenching and resultant nociceptive input to the trigeminal sensory nucleus should be considered as a perpetuating co-factor of CDH attack frequency and severity. An NTI device, provided by an experienced and knowledgeable practitioner, should be considered an important non-pharmacologic prescribed therapeutic option for improving the quality of life of severe headache patients.

