

## Ways to Help Reduce Pain Associated with Dental Treatment

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Establish a plan for pain control that is implemented before, during and after treatment.



### Introduction

The International Association for the Study of Pain (IASP) defines neuropathic pain as “pain initiated or caused by a primary lesion or dysfunction in the peripheral nervous system”. Neuropathic pain may be present in the orofacial region including the teeth and supporting structures inside people’s mouths. This pain may have its mechanisms related to dental procedures, such as; orthognatic surgery, preprosthetic surgery, endodontic treatment and dental implant procedures. The pain can be unrelated to dental procedures, such as trigeminal neuralgia. It is important that dentists and patients be aware of the features of these pains. This knowledge is required to accurately diagnose both new and prior existing pain-producing conditions, as well as be able to better manage dental treatment. This article presents a sequence of steps, based on the concept of preemptive analgesia, to aid both dentists and patients to prepare for undergoing dental treatment when neuropathic orofacial pain is present.

The overarching concept of preemptive analgesia treatment is to plan and act before initiation of treatment. Similarly patients undergoing major surgery with anesthesia have a cardiac work-up to ensure their heart health can be best managed before, during and after their operation. Furthermore, the plan and action continues to include the time during treatment and following treatment, which may be for weeks after the procedure is completed. The goal of preemptive analgesia is to prevent, as much as possible, the nerve-stimulating effects surgery, in this instance dental treatment, has on the nervous system. It attempts to reduce the body’s heightened ability to amplify pain that is known to occur in neuropathic pain sufferers.

### Implementation of pre-emptive analgesia

The first question that both patient and dentist need to ask themselves is: Does this procedure absolutely need to be done or can it be delayed? This is especially important since patients clearly articulate that their neuropathic orofacial pain is often exacerbated by dental treatment. Recent meta-analysis suggests that pains of these types spontaneously resolve over time. Therefore, the initial step would be to avoid pain-provoking treatment if possible. Sometimes this is a relative question that is based on the patient’s priorities (i.e. some patients require replacement of front teeth, while others are not that concerned) everyone’s needs and desires differ.

Given that a dental treatment is planned, the following steps can help in relieving treatment-related pain.

**1. Optimize neuropathic pain management:** Like heart health, first ensure the patient’s health is as good as it can be when treatment is a planned and scheduled procedure. Another important key sub-step would be identifying associated co-morbid conditions that can be both exacerbating and perpetuating factors in the neuropathic orofacial pain. Examples of such conditions are other orofacial pain disorders, such as temporomandibular disorders (TMD) and migraine headaches. Examples of less obvious conditions are sleep disorders, such as sleep apnea and insomnia, and mood disorder, such as depression.

**2. Management of anxiety:** It is natural for patients with neuropathic orofacial pain to be fearful, however, a better control of that feeling could help reduce the negative effect this anxiety has on both neuropathic pain and acute treatment-related pain. This could be

done with psychological therapy and/or medications. Therefore, like the heart health analogy, seeking input from a mental health care provider prior to dental treatment may prove useful.

**3. Establish profound local anesthesia:** To block the nerve impulses that carry the message of pain to the brain, it is crucial to have established effective local anesthesia. Some patients have difficulty getting “numb”, for various reasons, so besides traditional dental anesthetic techniques, consider intra-osseous and less common block techniques. Also, local anesthesia takes time to occur and disappears over time, so timing and duration of both anesthesia and treatment are important. Furthermore, consider having additional local anesthesia at the end of the appointment, so that the pain blocking effects can be extended longer into the recovery period following treatment.

**4. Pre-treatment with non-steroidal anti-inflammatory drugs (NSAIDs):** These drugs can be helpful in addressing the central and peripheral pain mechanisms involved in dental procedures (modulation of pain and mouth inflammation). Although such drugs are often not helpful for the underlying neuropathic pain condition. Since it takes time for these drugs to work, starting hours before dental treatment is needed yields the best results. An example would be starting 800 mg of Ibuprofen the night before treatment and continuing for about 10 days at three times per day. Again, it is helpful to extend pain treatment beyond the immediate post-treatment phase, and maintain it with regular drug intake, to continue suppressing the pain evoking components that occur during healing and daily function. For those who cannot take an NSAID, prescription of steroids can be substituted but are thought to be less effective.

**5. Consider pre-treatment with opioid-based drugs:** This is a controversial topic since extremely high amounts of such drugs are diverted from therapeutic use and end up being sold in the community. Even though, similar to NSAID use outlined above, the reduction of treatment-related pain can be gained with these drugs being started immediately before and continued through some portion of the recovery period. A sample strategy would be starting 10 mg of Oxycontin (which has immediate and delayed release parts in 1 pill) half hour before the start of treatment and continuing for 7 days, at twice a day dosing. Again, illegal uses of these drugs are a big problem, which is

why an “opioid contract” between the prescriber and the patient is strongly advised.

**6. Consider pre-treatment with other drugs that reduce neuropathic pain:** Research has shown that a great number of drugs have anti-pain properties, so using them for a specific time – even when side-effects are known to occur but are willing to be tolerated/managed – can be very helpful. Some of the better-known drug groups are tricyclic antidepressants (TCAs) and anti-epileptic drugs (AEDs), but other less well known are ketamine (NMDA receptor antagonist) and some IV delivered drugs, like magnesium. Some of these may not be practical to use in a lot of dental settings, but others are. Sometimes creative delivery approaches can make it more practical, which is where the “art” of healthcare becomes more prominent than the science. On that note, patient safety and well-being is of the utmost concern, and all care needs to be based on informed consent that includes the potential risks, benefits and options.

### Summation

In providing improved pain management related to dental treatment in people with neuropathic orofacial pain conditions; the goal is to establish a plan for pain control that is implemented before, during and after treatment. It is important for a candid conversation to occur between the patient and their dentist about how best to potentially use one, all, or none of these steps for pain control. Sometimes this may include consultation with other care providers knowledgeable in this type of chronic pain management. Similar to the surgery-anesthesia team seeking input from a cardiologist about heart health before finalizing the plans for a general operation. It is also important to emphasize that there is a lack of research and clinical awareness about this topic, something that all too often leads to confusion and ignorance. Consequently, there is a huge need to perform clinical research to bring more and better treatment options into practice.



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