

This white paper will explain the physiological basis for 1) tension headaches and 2) jaw pain as well as strategies for relieving and preventing as documented by referenced scientific studies.

## Tension Headaches

Tension headaches are by far the most common cause of headaches, responsible for 90% of all headaches, and affect up to 80% of the population from time to time. There are a myriad of factors which cause stress and tension such as money problems, looming deadlines, and unresolved issues at work and home. Emotional or mental stress and anxiety produce muscle contractions in the head and neck region that actually create the “tension” which results in the headache. A major depository of the stress and a major contributor to tension throughout the head and neck region is in the jaw musculature, which in humans responds to the pressure of an unpleasant or challenging situation with the pressure of a clenched or tightened jaw. Jaw muscles are the strongest muscles in the body and can exert 250 pounds of pressure which can be repeated throughout the day on multiple occasions.

## Mechanism of Tension Headaches

Essentially one’s effort to focus and deal with the unpleasant situation creates the anxiety and stress which is converted into tension as the muscles tighten. This muscle tightening is magnified as the jaw muscles are directly or indirectly related to all of the musculature of the head and neck allowing the tension to “spread” to the neck and scalp muscles particularly by a phenomenon called referred pain. Pain receptors in the head and neck musculature, called nociceptors, are activated because of the tension, and pain is generated resulting in the most common form of headache, a “tension headache.” Symptoms include a mild to moderate dull head pain and pressure and tenderness around the forehead and scalp that may result in irritability, fatigue, insomnia, lack of focus, and an overall unpleasant feeling affecting one’s quality of life.

## Current Treatment

Currently tension headaches are mainly treated with over-the-counter pain medications such as ibuprofen or aspirin, which may lessen or mask the pain but do not address the underlying causes. Further, these medications may have serious side effects if used more than occasionally and may generate “rebound” headaches when the effects wear off. Preventive medications may include prescription tricyclic or other antidepressants as well as muscle relaxants. Ice packs, postural improvement, acupuncture, massage, and behavior therapies may also be utilized.

## Jaw Pain and Headaches

Jaw pain, which may be triggered by the same root causes as tension headaches, may also be produced by other conditions but, no matter the causal factor, may be exacerbated by tension in the jaw musculature in most cases even if there are other origins. Jaw pain and headaches may occur together and one may lead to the occurrence of the other.

**Here’s how it happens:** jaw muscles tighten when an individual grinds or clenches their teeth or do things such as chew gum. The pain from the jaw created by the clenching then travels to other places in the skull that can result in headaches, or, in severe cases, migraines. One may also experience toothaches, earaches or shoulder pain. Basic jaw-stretching exercises can slow the progression of a headache and prevent the headache from becoming a full-blown migraine.

## Relieving the “Tension” in Tension Headaches

Because of the referred pain phenomenon, relieving the tension in the jaw musculature will tend to relieve the tension in the other musculature of the head and neck. Preventing the accumulation of tension in the jaw musculature will also tend to prevent the accumulation of

tension in the musculature of the head and neck. If the tension in the head and neck musculature is prevented or relieved, the mechanism and sequence of events that result in tension headaches is disrupted and the tension headache is either prevented or relieved. It is well known that stretching a stiff or sore muscle anywhere in the body will relax it as it lengthens. The jaw muscles are the same as elsewhere. Stretching releases the tightness and the nociceptors are not triggered once the muscle relaxes, and the pain subsides.

One may experience the above for themselves by stretching the muscles of the lower back. Initially, one may bend over and touch their knees, and then their upper shin, then their ankles, and finally their feet. One can actually feel the muscles relax with the stretching, and the tension (and pain) present at the start is no longer present. The same results will occur with gradual and gentle stretching of the jaw muscles.

Stretching of the jaw muscles has been reported to treat and relieve jaw pain, temporomandibular joint disorders<sup>1</sup>, headaches<sup>2</sup>, tinnitus (ringing in the ears)<sup>3,4</sup>, sleep apnea<sup>5</sup>, neck pain<sup>6</sup>, post-operative pain, trismus (decreased opening) from cancer treatment<sup>7</sup>, and even to increase saliva production<sup>8</sup> amongst others. Stretching the jaw may also provide a functional improvement in addition to relieving discomfort in these conditions<sup>1</sup>.

## Jaw Stretching Devices

There are currently several jaw stretching devices available, all of which are quite complex and very expensive costing hundreds of dollars. Some need a prescription to qualify for insurance reimbursement. These include:

1. **TheraBite (\$499)**  
[www.atosmedical.us/product/therabite-jaw-motion-rehabilitation-system/](http://www.atosmedical.us/product/therabite-jaw-motion-rehabilitation-system/)
2. **OraStretch (\$498)**  
<http://www.cranio rehab.com/orastretch-press-jaw-motion-rehab.html>
3. **DynaSplint (\$1335)**  
<http://www.dynasplint.com/divisions/jaw/>

4. **E-Z Flex II TMJ Exerciser (\$499)**  
[http://www.cranio rehab.com/E-Z-Flex-II-TMJ-Exerciser\\_p\\_138.html](http://www.cranio rehab.com/E-Z-Flex-II-TMJ-Exerciser_p_138.html)
5. **TheraPacer Jaw CPM (rental only)**  
<http://www.cranio rehab.com/therapacer-jaw-cpm.html>
6. **JawClamp (\$110-\$180)**  
<http://jawclamp.com/>

Until now, there has been no method of easily, comfortably and conveniently stretching the jaw muscles. Placing fingers in the mouth is unacceptable to most. Using props will not provide a continuous stretch. The current devices are too complex and expensive. Relèveur, a patented product, is a simple, safe and effective device designed to pull down on the jaw, stretching and relaxing the jaw muscles while relieving much of the accumulated tension of the day. It has the potential to be a major means of relieving and preventing tension headaches and jaw pain/discomfort.

## A Simple, Safe and Effective Solution

Relèveur is simple and affordable, simple and easy to use, safe by the design and safe because the user is in control, and effective at dissipating and relieving the tension in the jaw, head and neck musculature. One simply places the tooth engaging portion over the lower front teeth and applies gradual and gentle downward traction for a period of time from seconds to minutes.



Adjunctive exercises with traction to each side also are employed between the downward traction exercises as pictured on the following page.



It is anticipated that using Relèveur with simple stretching exercises will dissipate the stress related tension that contributes to episodic headaches that affect most of us at some point and to chronic and recurring headaches and jaw pain that affect over 15% of the population or over 37 million chronic sufferers. Sales of over-the-counter headache medicine was over \$1.6B in 2013 and our research has shown that most people are dissatisfied with the result of taking these medicines. Hence, there is a definite opportunity to make inroads into the very common malady known as tension headaches with a cost affordable solution thereby improving the quality of life of millions of people.

## Testimonials By Healthcare Professionals

### Dr. Scott Leune, DDS

Founder and CEO of Breakaway Practice

*“Having owned and managed many businesses in the dental industry, I am very aware of the issues patient’s can have with their jaw and it’s affect on people’s teeth*

*and overall well-being. Some people have more severe symptoms than others, but the issue of clenching and grinding one’s teeth manifests into all sorts of real problems for people. Jaw pain, tension in the head, neck and shoulders are real issues for many people. The Tension Reliever is a safe, simple and effective solution to helping prevent the build up of tension in the jaw muscles, and thus a key tool in tension prevention. The act of stretching the appropriate jaw muscles can actually reduce symptoms typically seen with clenching and grinding one’s teeth.”*

### Dr. Gary Klasser, DMD

President of AAOP (American Academy of Orofacial Pain) and Associate Professor at the LSU School of Dentistry, Division of Diagnostic Sciences

*“The Tension Reliever product, Relèveur, is a truly unique and innovative tool that provides a safe and targeted approach to relieving tension in the jaw muscles and reduce the cascading effects of tension in the head, neck and shoulders. Professionals in the oral facial pain industry have long known of the benefits of stretching the jaw muscles to provide relief to people suffering from jaw pain and other related issues, and this tool brings that therapy to the general public in a way that will do some real good.”*

### Dr. Nick Sechrist, DC

Doctor of Chiropractic and Owner of Elevation Now Chiropractic

*“I see patients all the time that complain of head, neck, shoulder and jaw pain. The pain is really a symptom of tension in the body, more specifically tension in the jaw that manifests into tension in the head, neck and shoulders that can turn into painful tension headaches. The Relèveur is a tool that I can use that targets the stretching of the jaw muscles specific to this tension. In my experiences using Relèveur, my patients have experienced a noticeable decline in their tension headaches when used as a preventative stretching tool. I’m excited to see a product like this available not only to professionals like myself, but to the general public.”*

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