

# METHODS OF TREATING TEMPOROMANDIBULAR JOINT DISORDER



TMJ Pharmaceuticals LLC

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# Introduction

Currently, pain is most commonly treated with oral medications. However, with growing concern regarding the side effects and addictions associated with oral medications, topical treatment has become a more desirable alternative than ever. Compounded transdermal medications have been known to avoid many of the challenges associated with oral medications. Yet even in spite of this, the introduction of mass-produced drugs caused compounding to lose popularity. Interest has renewed in recent years as pharmacists and doctors have realized through compounding medications, they can better meet the individualized needs of patients, while minimizing side effects. At TMJ Pharmaceuticals LLC, we realized the need for a topical treatment in the fields of dentistry and orofacial pain, and have created a compound that will dramatically improve your patients' treatment plans and pain management.



## Revolutionary Treatment

In the fields of TMJ and orofacial pain, the use of transdermal medication is still relatively new. Currently, most uses are anti-inflammatory based, using analgesics. These are of non-opiate preparations, with the non-opiate prototype being aspirin (salicylate). Non-opiates are commonly found over the counter (OTC) or online. Although compounds have unique formulations, they are prepared following USP guidelines using active pharmaceutical agents (APIs) approved by the FDA.

At TMJ Pharmaceuticals LLC, we have created MyoMagic™, a topical compound that consists of a unique combination of muscle relaxant, anti-inflammatory, and anesthetic. MyoMagic and the methods of applying it can be used as part of a treatment protocol that may include: splint therapy, physical therapy, medical management (medications), post-surgical management, or behavioral therapy.



# About MyoMagic

Myomagic™ is a patented medication that includes the active ingredients: lidocaine (topical anesthetic), cyclobenzaprine (muscle relaxant) and ketoprofen (anti-inflammatory). All three medications are compounded into a single preparation to reduce acute and long-term pain as well as inflammation in patients diagnosed with TMD or dealing with post procedural pain.

Uniquely, we use both intraoral and extraoral preparations, each specially formulated to work in very different environments. Providing MyoMagic as a topical preparation limits side effects and drug interactions associated with oral medications in the same drug classes. When used in combination with the intraoral preparation, we are able to target joint specific antagonistic muscle groups.

## How it Works

The muscle relaxant cyclobenzaprine provides a positive effect on TMD's (a collective term for musculoskeletal pain and disorders of the temporomandibular joints). This medication is a compound similar to the tricyclic anti-depressants, and therefore may work in a similar manner. Non-steroidal, anti-inflammatory drugs work by inhibiting the action of cyclooxygenase (cox), an enzyme used to synthesize prostaglandins from arachidonic acid. Pain is caused when prostaglandin excites local nociceptors. Local anesthetics are thus used to break this pain cycle. Once the source of deep pain input is eliminated, sensitized central neurons can return to a more normal state.

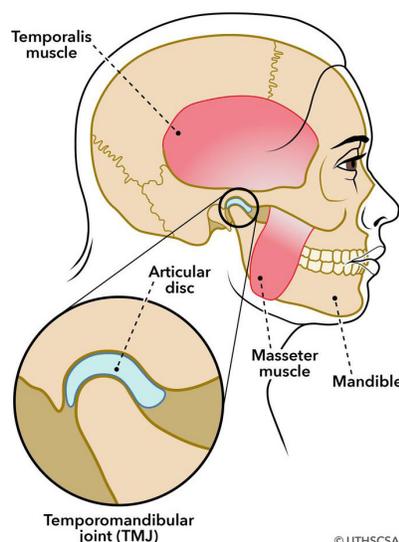
# When is MyoMagic Used?

TMJ Pharmaceuticals' main focus is aiding TMJ specialists, General Dentists, and Dental Specialists in their diagnosis and/or treatment of TMJ pain patients.

For the TMJ Specialist, our cream will assist the doctor in their care and management of patients with TMJ pain and associated symptoms. Adding this cream to their current course(s) of treatment will immensely increase their treatment success.

General Dentists and Dental Specialists will find the medication to be extremely useful in post procedural care. For a patient experiencing muscle pain after a procedure (such as an implant or root canal), doctors will find that our cream is helpful in alleviating pain symptoms as well as reducing the time spent in office for these patients. Additionally, it will assist General Dentists or Medical Doctors in making a differential diagnosis of TMD, ensuring that the patient receives proper treatment by the appropriate specialist.

Using this compound for the treatment of post procedural pain and/or TMD allows for targeted, successful treatment and is much more effective than analgesic-based creams or herbals currently offered as over the counter options.



# Benefits

TMJ patients treated using MyoMagic and the methods have reported countless beneficial effects, including:

- Decreased need for expensive and time consuming physical therapy
- Eliminated need for invasive and expensive procedures such as: dry needling, acupuncture, trigger point injections, Botox
- Increased patient response time during splint therapy
- Improved overall patient treatment
- More predictable treatments with better outcomes
- Alleviated facial pain, preauricular pain, jaw pain, neck pain, upper back pain and headaches

# Clinical Results

A retrospective study was done on the clinical trials using MyoMagic in the treatment of patients that were diagnosed with TMD's. Forty subjects between the ages of 15 and 94 were chosen. They were examined clinically and imaged using magnetic resonance imaging (MRI) when necessary. After diagnosis, the patients consented to treatment using orthopedic splint therapy, which is one of the most common treatment options for TMD's. All patients were evaluated at one month post-op and at the conclusion of the medical management using MyoMagic. The patients were asked, "How much better or worse do you feel since starting MyoMagic?" at the one-month post-op appointment. They were also asked, "How much better or worse do you feel at the conclusion of MyoMagic?"

Patients were seen on a monthly basis for a duration of 9 to 12 months. During treatment, they were prescribed MyoMagic anywhere from the beginning to the end of splint therapy, depending upon the severity of their symptoms.

The conclusion of MyoMagic coincided with the end of splint therapy. Patients were asked to give a percentage improvement, or regression from a negative to a positive on a scale of 0 to 100.

Another retrospective study was conducted with a control group that examined patients' pain response before using MyoMagic in the treatment of patients diagnosed with TMD's. Thirty-nine subjects between the ages of 11 and 75 were chosen. As in the previous study, they were examined clinically and imaged using MRI's when appropriate. After diagnosis, the patients consented to treatment using orthopedic splint therapy.

Once again, patients were seen on a monthly basis for a duration of 9 to 12 months. All patients were evaluated at one month post-op, and at the conclusion of splint therapy. The patients were asked, "How much better or worse do you feel since starting splint therapy?" at the one month post-op appointment. They were also asked, "How much better or worse do you feel?" at the end of splint therapy. They were asked to give a percentage improvement, or regression from a negative to a positive on a scale of 0 to 100. The results are as follows:

Ultimately, it was found there was a 16% greater improvement in how patients using MyoMagic with splint therapy felt at the one-month post op than the control group using splint therapy alone.



	<u>Experimental Group</u> (using MyoMagic)	<u>Control Group</u> (splint therapy only)
TP	83%	74%
FP/JP	85%	69%
NP/SP	83%	62%
ROM	75%	90%
Caps	63%	69%
H	55%	69%

When looking at both retrospective studies objectively, six areas of interest were targeted as follows: 1. trigger points (TP), 2. facial pain/jaw pain (FP/JP), 3. neck pain/shoulder pain (NP/SP), 4. range of motion (ROM), 5. capsulitis (caps), and 6. headaches (H). Reports of improvement are detailed in the graph above.

## Methods of Treatment

### 1. Method of treating TMJD using MyoMagic Extraoral and Intraoral

Apply to all muscles of mastication and to secondary supportive muscles recruited that are painful when palpating muscles' trigger points (two or three). Use a pain scale of 0-3, where one is slight, two is moderate and three is severe. Include anterior and posterior neck and upper back muscles, and intraoral muscles t.i.d.

### 2. Method of treating TMJD using MyoMagic Extraoral

When the VAS Scale (Visual Analog Scale) is high (7 or above), apply to all extraoral muscles of mastication and to secondary supportive muscles recruited that are painful when palpating muscles' trigger points.

### 3. Method of treating TMJD using MyoMagic Intraoral

Use after applying MyoMagic Extraoral. Apply when the qualitative of pain measurement of the extraoral muscles of mastication is reduced to one, and if the qualities of pain measurement of the lateral pterygoid muscles is two or three. Use the MyoMagic Extraoral in combination with the MyoMagic Intraoral.

## Dosage & Administration

- Rx: MyoMagic Extraoral 60g, 120g, 240g
- Apply 1-2 gms (1 pump = 1 gram) to affected area 3-4 times daily, massage gently for 1 minute
- Rx: MyoMagic Intraoral 60g
- Apply 1 pump (1 gram) to applicator sponge and position on affected area as directed for 1 minute, use 3-4 times daily

## Duration and Treatment

MyoMagic can be used for as long as it is clinically necessary. MyoMagic is safe to be used in combination with enteric medications, since no systemic side effects have been observed. Elderly patients aged 65 and older are also safe to use the medication. Additionally, you can use MyoMagic with comorbidities such as: dizziness and vertigo, balance disorders, gaiting disorders or orthopedic disabilities.



# Mechanism of Action

- Anti-inflammatory
- Muscle relaxation
- Pain reduction
- Prevents central sensitization such as allodynia and hyperalgesia

## About Our Clinic

Dr. Alexander Grabavoy has over twenty five years of experience in the field of TMJ and facial pain. A licensed general dentist in the state of Illinois, Dr. Grabavoy continues to stay current in the field with continuing education annually. During this time, Dr. Grabavoy has given numerous lectures on TMJ and facial pain to both doctors and the general public. Together with his compounding pharmacy, Dr. Grabavoy created TMJ Pharmaceuticals LLC in 2015.

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