



Botox in Dentistry

Many of us think of Botox primarily as a cosmetic treatment for lines and wrinkles on the face, but the botulinum toxin that Botox is derived from has a long history of medically therapeutic uses. In fact, the very first clinically approved uses of Botox, or botulinum A, back in 1989 were not cosmetic at all. For nearly 13 years, until the introduction of Botox Cosmetic in 2002, the only FDA-approved uses of Botox were for crossed eyes (strabismus) and abnormal muscle spasms of the eyelids (blepharospasm).

Since then botulinum A, and the seven other forms of the botulinum toxin, have been continuously researched and tested for further medically therapeutic uses related to chronic and uncontrollable muscle spasm. No longer under the sole proprietary rights of Allergan, botulinum A is now more widely available as Botox (Allergan), Xeomin (Merz Aesthetics), and Dysport (Medicis). Of course botulinum A continues to be used for a wide variety of cosmetic procedures, but it is also used to treat the following dental and medical conditions:

- Chronic migraine and other headache pain related to unrelenting muscle tension in the face, head, and neck
- Severe and uncontrollable clenching and/or grinding of the teeth
- “Gummy” smiles related to an overly recessive upper lip
- Upside-down smiles
- Chronically pursed or puckered lips and chins
- Blepharospasm (uncontrollable eyelid spasm) and strabismus (crossed eyes)
- Cervical Dystonia – a painful condition where the muscles of the neck contract involuntarily causing the head to twist or turn to one side, or tilt forward or backward.
- Overactive bladder
- Severe and uncontrollable underarm sweating
- Upper limb spasticity specifically in the elbow, wrist, and fingers



Headache and Migraine Treatment

TMJ disorder and other types of bite abnormalities can directly contribute to chronic headache pain by triggering chronic spasm in the muscles throughout the face, head, and neck.

Treatment with botulinum A is not a “cure” for these types of headaches, but it can provide significant relief while other longer-term treatments are being pursued.

Not every patient with chronic headaches related to these types of bite disorders will find relief with the use of botulinum A. In most individuals, a single treatment will last only 3 to 5 months, and multiple treatments can be expensive over time. However, one or two treatments may offer a period of significant relief enabling a patient to work on other lifestyle factors and medical conditions that may also be contributing to their headache pain.

Almost all headache pain is caused by multiple factors and lifestyle triggers. Continuing a regimen of self-care and exploration of all possible headache causes during treatment with botulinum A is essential to the ultimate goal of reducing or eliminating headache pain for good.

Severe Clenching and Grinding

Our teeth were not designed to be pressed and ground together for hours at a time. In fact, the average amount of time our chewing muscles should be firing for normal eating and swallowing purposes during a 24-hour period is only about 5 to 7 minutes total. However, due to stress, habit, and other neurological factors still not completely understood, many people clench and grind their teeth almost incessantly – especially during sleep.

Unlike regular chewing, which distributes about 80 PSI of pressure on the teeth, clenching and grinding can increase that pressure to up to 800 PSI. We don't know why this pressure increases so dramatically, but we do know that over time it will destroy natural teeth and all types of dental restorations.



Severe Clenching and Grinding (cont'd)

Mouthguards and nightguards can be very effective in protecting the teeth against clenching and grinding damage when worn during sleep or other activities that trigger the habit. But these guards do not stop the clenching and grinding from happening in the first place.

Treating severe bruxism with botulinum A helps limit the over-function of the muscles responsible for chewing. The treated muscles typically display a partial reduction in over-function within 2-3 days with maximal reduction 1-2 weeks after treatment. You can still chew normally, but the amount of pressure you can exert during clenching and grinding is significantly reduced.

Like treatment for headache pain, using botulinum A for bruxism is not a cure. However, there is growing evidence to suggest that breaking the cycle of extreme muscle function with a few treatments may teach the muscles to relax more over time.

NOTE:

In some individuals, excessive clenching and grinding may be due to a dangerous medical condition called sleep apnea. Nightguards and botulinum A do not help sleep apnea and may mask key symptoms of the disorder, causing a dangerous delay in accurate diagnosis and treatment.

Lip and Chin Smile Enhancements

By targeting specific muscles around the mouth with botulinum A injections, gummy smiles, lip lines and creases, puckered chins, and upside-down smiles can all appear to disappear. Each type of treatment limits the excessive muscle function that contributes to the condition so that an upper lip can no longer over-retract, the corners of the mouth can turn up instead of down, and the chin muscle is relaxed instead of puckered.



Lip and Chin Smile Enhancements (cont'd)

These treatments, like all the others, will only last a period of 3 to 5 months before the muscles will begin to return to their previous function. However, breaking the cycle of habitual muscle function can retrain those muscles to function differently over time in some patients. For those individuals with extreme examples of these conditions, regular treatment with botulinum A can offer a renewed sense self-esteem and confidence, and may be worth the long-term maintenance.

What to Expect with Botox Treatment

Treatment with botulinum A is simple and the pain is minimal. The prepared toxin is diluted with sterile saline, then administered to key muscle points via small injections. The material spreads no further than the size of a dime or nickel from the injection site.

After treatment, you should avoid laying down for the first 4 hours. Exercise, sun exposure, and facials must be avoided for an additional 24 hours. Any other activities that manipulate the skin or can cause skin flushing like massage, heat packs, alcohol consumption, and tanning should also all be avoided during that time. Sterile makeup or no makeup for 24 hours is also highly recommended.

Side effects are rare and transient, but may include fleeting facial asymmetry, transient headache or flu-like symptoms, and redness around the injection site. Bacterial or fungal infection can also be a risk if the injection sites are not kept clean and free of make-up, sweat, and dirt during the first 24 hours.



Additional Treatment Restrictions and Conclusions

Treatment with botulinum A is not for everyone. If you are pregnant, lactating, or you have a neurological disorder, you should not receive botulinum A. You should not receive botulinum A injections while you are sick with a flu, cold or other infection. Botulinum A injections are also not recommended for anyone with any type of dermatitis.

The best way to find out if botulinum A could help with a medical or dental condition you are concerned about is to talk with your doctor. Together, you can both decide if a course of treatment is the right choice for you, or if other options are available.

As always, current patients within my practice are always welcome to call the office or bring their questions about botulinum A (or any other treatment or condition) to their next regularly scheduled dental appointment. Together we will review all the treatment options available to you, and help you to make the best decision for you and your long-term health goals.

References:

American Journal of Physical Medicine & Rehabilitation: *Effect of botulinum toxin injection on nocturnal bruxism: a randomized controlled trial*

International Dental Journal: *Efficacy of botulinum toxins on bruxism: an evidence based review*

Journal of the American Medical Association: *Botulinum Toxin A for Prophylactic Treatment of Migraine and Tension Headaches in Adults*

American Journal of Orthodontics and Dentofacial Orthopedics: *Botulinum toxin type A (Botox) for the neuromuscular correction of excessive gingival display on smiling (gummy smile)*