

Botox® Therapy For Facial Wrinkles

Botox® (botulinum toxin A manufactured by Allergan, Inc) is neither new nor a cure-all against time and gravity; yet Botox® can be highly effective against certain types of wrinkles and facial spasms. Botox®, one of seven naturally occurring products of the bacterium *Clostridium botulinum*, was originally purified in the late 1970's and used experimentally by a handful of selected practices, including ours, since the mid 1980's for both medical and cosmetic indications. Today, two of these toxins (types A and B) are manufactured in the laboratory and act in essentially the same manner: destroying the nerves that make muscles contract. Interrupting the normal function of breathing muscles is how such toxins in improperly preserved canned foods have historically killed people. Yet, used intelligently and responsibly, botulinum toxins A and B are safer than Penicillin (a toxin made by the mold fungus *Penicillium notatum*).

Although the muscle-nerves affected by botulinum toxins are permanently destroyed, the effect of these toxins is temporary, because we grow new muscle-nerves all the time. This is analogous to what happens with aspirin (a toxin originally purified from willow tree bark). Aspirin destroys platelets, but we don't bleed to death after taking an aspirin, because we make new platelets.

Importantly, the botulinum toxins do not affect nerves of sensation, only muscle-nerves, so there is no change in feeling from the treatments.

The Different Toxins Currently Available:

Botox® (Allergan) is the original formulation of type A toxin used for over 2 decades.

Dysport® (Galderma Laboratories, LP) is also type A toxin for glabellar lines and other areas of the face.

Xeomin® (Merz Aesthetics®) is another option of type A toxin.

Jeveau® (Evolus™) is also type A toxin on the market, #newtox

Myobloc™ (Solstice Neurosciences, LLC) is type B toxin. The same medication is marketed in Europe under the name **Neurobloc™**. Type B toxin has a faster onset, but a shorter duration of action.

Daxxify® (Revance) is the newest type A toxin which duration of effectiveness is 6 to 9 months.

All of the toxins are quantified in "units," but each company defines a "unit" differently. A "unit" of Botox® has no reliable relationship to a "unit" of Myobloc™ or a "unit" of Dysport®. In most people, though, 25-50 "units" of Myobloc™ is roughly equal to 2-5 "units" of Dysport®, which is roughly equal to 1 "unit" of Botox®.

The Continued Use Of Botulinum Toxins

Most people will observe a progressive lengthening duration of toxin effect with multiple injection cycles. This is most likely due to something our practice has called "muscle memory." If you learned to play tennis or golf and for a long time had to concentrate on your swing, then you'll understand how, over time, your swing developed and now "just happens." In the same way, people tend to learn how to move their faces slightly differently (without thinking about it), so they develop fewer wrinkles.

The Impact Of FDA Cosmetic Approval For Botulinum Toxin

For consumers, FDA approval of Botox® for cosmetic use has been a two-edged sword. Mass marketing and increased consumer awareness has driven up demand. This has dropped injection prices by as much as ten fold, a very good thing, since prices were often scandalously high. However, the bad news is that many physicians (and now even their office staff!) who have little or no experience are performing these treatments. Toxin injection into the wrong place or in the wrong dose can be disastrous. The latest craze has been "Botox parties" where injections are provided to a group of people outside of a physician's office. In most cases, no life support medications or devices are available to help in the rare, but real chance that someone has a vasovagal or anaphylactic reaction. Physician-patient consultation privacy may be compromised, so that medical conditions in which the toxins are contraindicated may not be revealed.

Finally, alcohol often served at these parties along with peer or social pressure may hamper the consent process.

Advertising Traps

Although the vast majority of physicians are scrupulous, there will always be a few who prey on the uninformed consumer. Arm yourself against common advertising gimmicks.

- 1.) ***“Lowest price”*** – The toxins are expensive, and the cost has to be passed along to consumers, unless an injector is taking a loss so that he/she can gain experience. Unless you are willing to suffer the potential consequences, avoid being someone’s guinea pig. Find out not only how many “units” will be injected for a particular price, but also which toxin will be used. Myobloc™, for example can be given at a fraction of the price of an equal number of “units” of Botox®, because Myobloc™ costs 25 times less, but it also provides roughly 25-50 times less effect “unit” for “unit” than Botox®.
- 2.) ***“Only \$150 Per Syringe”*** – A syringe (whatever size is being used) represents merely an injection volume. The toxins can be diluted to any volume. Whether ten “units” of toxin is diluted into 5 cc or 0.1 cc makes no difference in overall toxin effect. Getting 20 times more volume only spreads the same amount of toxin out over a larger space. More dilution does not mean more effect. Thus, it is important to know how many “units” are being injected. Injections priced by the syringe often end up being more expensive, as the injector then charges for each area being treated. Thirty to fifty “units” of Botox®, 90-150 “units” of Dysport®, or 750-2,500 “units” of Myobloc™ are needed to treat most peoples’ facial wrinkles.
- 3.) ***“Experienced Injector”*** – There are very good reasons why the toxins are only approved for administration by an M.D. Don’t settle for “physician oversight” which may or may not mean a physician is even on the premises. Your life and well-being are at stake. Insist upon an M.D. injector with at least five years of injection experience. From having performed tens of thousands of injections, we can state with certainty that the actual number of individuals treated by an injector is far less important than the number of years an injector has been practicing. Understanding the long-term effects of these toxins is very important.
- 4.) ***“Erase All Wrinkles”*** – These toxins do not treat all wrinkles. Dynamic wrinkles (those that become worse with facial expression and movement) are the ones that are most susceptible to treatment. Static lines (those that are always present) may enjoy benefit, but many of these creases require a filler, such as fat, collagen, or (perhaps best of all) cross-linked hyaluronic acid.
- 5.) ***“Cure Migraine Headaches”*** – The toxins can be very effective in treating “stress” or “tension” headaches caused by chronic contraction of the brow or forehead muscles. However, the toxins have no direct effect on classical migraine headaches. Furthermore, a careful anatomic assessment must be performed to determine why an individual has “tension” headaches. Is it because there is an underlying droopy eyelid or brow problem that needs attention?
- 6.) ***“Bring A Friend And Share The Cost”*** – This idea developed because Botox® has a relatively short shelf life once the powder is made up as a solution. Each bottle contains 100 units (about what is needed for 2-3 people). The medication is expensive. If half the bottle is thrown away at the end of the day, because it has not been used, then there is significant \$ loss. The truth is that practices that perform toxin injections with any regularity can easily schedule multiple patients appropriately, so they incur no loss. Think about it. How can someone offer you one or more “syringes” of toxin, if they haven’t already allotted the remainder to someone else? When you “bring a friend,” you are simply marketing for the injector. Are they paying you for this service?