

Eyebrow Shaping; Forehead and Frown Wrinkles Treatment with Clostridium Botulinum Neurotoxin Simplified

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Clostridium botulinum neurotoxin (BT) is one of the most wonderful additions to our cosmetic treatment. Its effectiveness and ease of use should make it a common treatment modality at any medical office. Despite of a few decades past since its first use, we still have doctors who are reluctant to incorporate BT into their treatment repertoire.

BT works through paralyzing muscles by blocking acetylcholine (ACH) release from the nerve endings and thus preventing muscle contraction. The effect lasts about 3 months and after that time the treatment needs to be repeated again. Each subsequent treatment prolongs the duration of muscles paresis.

BT injections temporarily relax the facial muscles around wrinkles, making them appear less noticeable and it makes a perfect complementary treatment to mesotherapy. Mesotherapy can improve the appearance of small wrinkles, rejuvenate and make skin look young, but it is less effective in treatment of expressive and well established habitual wrinkles. These are caused by facial muscles action and can only be remedied by paralyzing them.

The most common BT treatment areas include:

- Frown lines between the eyebrows and on the bridge of the nose
- Crow's-feet at the corners of the eyes
- Forehead creases
- Thick bands on the neck

Not all facial wrinkles benefit from BT injections, however. BT won't reverse wrinkling caused by sun damage. That can be successfully treated with mesotherapy. Treating the lines around mouth requires great care. Muscles in this area are needed for eating, talking and I would not recommend treating that area by an inexperienced person. BT works well for any skin type, skin thickness and degree of wrinkling.

Side effects of BT

BT injections are relatively safe when performed by an experienced doctor, but side effects and complications can occur. These include:

- Pain and bruising at the injection site
- Redness
- Headache
- Flu-like symptoms
- Nausea
- Temporary facial weakness or drooping

Recovery from BT treatment is quick. Normal activity can usually be resumed immediately after the procedure. Patients are cautioned not to massage the treated area, avoid lying down and avoid drinking alcohol for a few hours after BT treatment. Patients are also advised to wait 24 hours before taking part in strenuous activity.

The full effects of BT treatment become evident within a week of treatment as muscles relax. Wrinkles and crease lines diminish or disappear from the face. After three to six months, another treatment will be necessary to maintain the skin smoothing results. Repeated treatments extend the effectiveness of the muscle-relaxing properties of BT, so treatments should eventually last up to eight months.

I treat facial wrinkles using Botox® -Cosmetic *clostridium botulinum Type A neurotoxin.

Botox® (BTX)* contains 100 Units of vacuum dried Clostridium botulinum Type A neurotoxin per vial. It is to be reconstituted only with 0.9% sterile, non-preserved saline prior to intramuscular injection. There is a number of ways of diluting BTX. The manufacturer recommends diluting BTX vial with 2.5 ml saline with resulting formulation of 4.0 Units of toxin per 0.1 ml.

I myself find it difficult to work with such a minute quantities. Treating some areas requires injecting of 1 or 2 Units of BTX. It is easier to reconstitute BTX in 5.0 ml with resulting formulation of 2.0 Units of toxin per 0.1 ml.

Use a 30-gauge needle and inject into the muscles. There is no need for injecting deeper then 2-3 mm depending on the muscles thickness.

This article will talk about shaping eyebrows, forehead creases and frown lines. Those are the most common and well responding to treatment.

It is very important to differentiate treatment approach for male and female.

Paralyzing forehead muscles directly influences the eyebrow arch and changes its shape.

The ultimate woman's brow shape should be in the form of an arch and men's more flat.

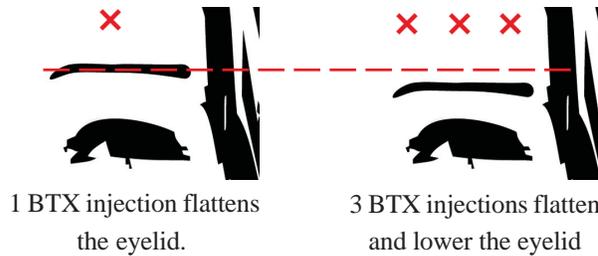
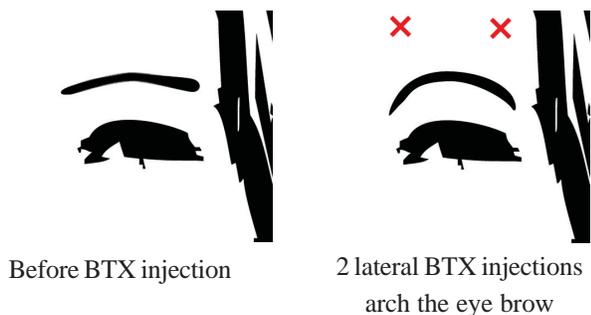


Injecting a male eyebrow the same way as a female eyebrow would result in undesirable arching eyebrow shape. Paralyzing muscles cause a relaxation and elongation of the treated muscles. The opposite is happening to untreated muscles. They tend to increase its tension and cause more pull. Use that effect for sculpturing facial expression and assessing the final effect.

Be very careful not to inject the forehead to close to the brow line as you may paralyze the eye muscles and cause the eyelid drop. It is better to add some BTX later then to suffer the consequences of over treating.

What happens after the injection of BTX ?

Muscles not affected by the neurotoxin take over the function of paralyzed muscles. Now we give you an example of changing an eyebrow shape with 1, 2 and 3 BT injections.

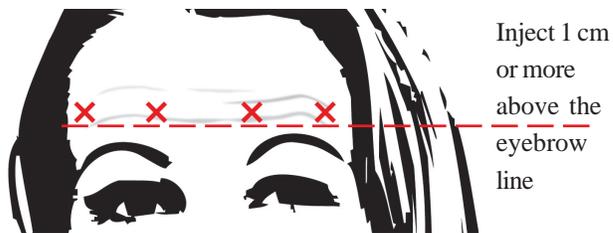


As you see, by injecting BT we can affect facial expression and face shape.

Injecting a female forehead wrinkles.

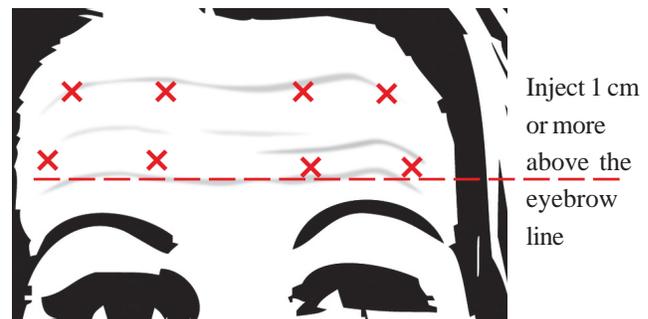
1. *Small amount of wrinkles.*

Injected amount of BTX is 3 - 4 units per injection.



Above mode of injecting is reserved for small amount of forehead wrinkling or if we want to preserve some forehead muscles action and some facial expression.

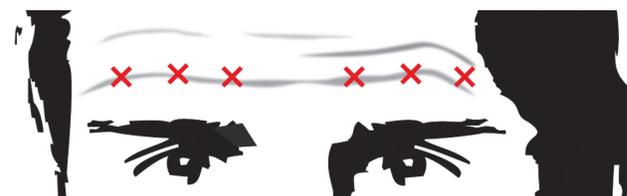
2. *Severe lower and upper forehead wrinkling. This type of injections results in total forehead muscles paresis.*



Injecting a male forehead.

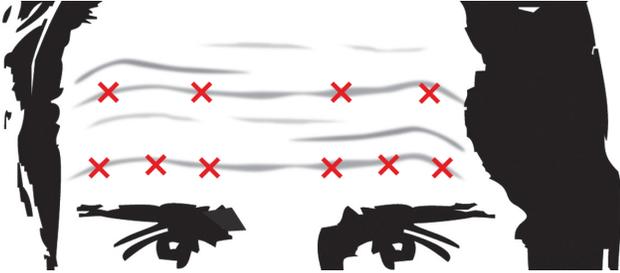
1. *Small amount of wrinkles.*

The quantity per injection is the same as for the females.



We use 3 BT injections on each side to preserve masculine type of eyebrow shape.

2. Severe lower and upper forehead wrinkling. This type of injections results in total forehead muscles paresis.

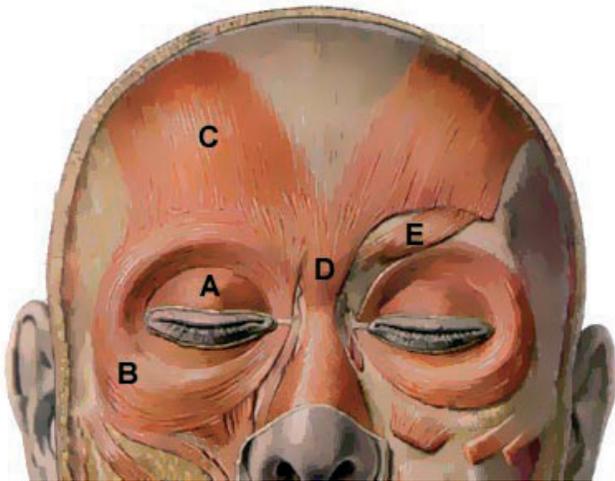


Treating frown line.

There are several muscles involved in the frown process. Corrugator and orbicularis oculi muscles move the brow medially. The procerus and depressor supercilli pull the brow inferiorly. This creates a frown or “furrowed brow”.



A frown or “furrowed brow”.



- A Orbicularis Muscle (palpebral portion) Eyelid closing muscle
- B Orbicularis Muscle (orbital portion) Eyelid closing muscle
- C Frontalis Muscle Forehead muscle
- D Procerus Muscle that lowers brows
- E Corrugator and Depressor Supercilli Muscles complex that brings brows together

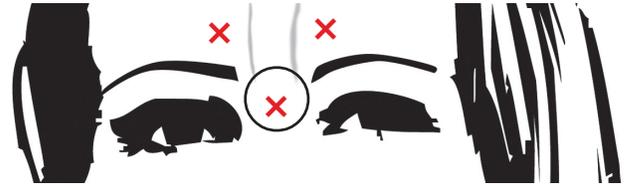
Only one 2-3 units BTX injection is required if a frown treatment supplements the forehead treatment. Inject “D” - the procerus muscle.



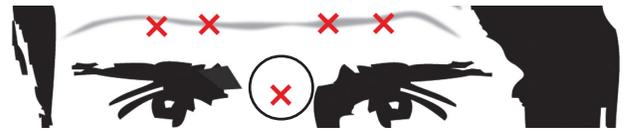
After injecting that area I always perform 15 seconds gentle upward massage.

Injecting frown lines only.

Use already described quantities of BTX per injection.



Female frown lines treatment



Male frown lines treatment

Treating frown lines only may lead to forming of “surprised look” wrinkles over the lateral eyebrow area.



That can be remedied by injecting BTX in the area if needed.

In case of mild asymmetry or incomplete block you can always inject a few BTX units later.

The last precaution

Inject 1 cm or more above the eyebrow line except when injecting procerus muscle.

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