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upper third of the face

2.1 Horizontal forehead lines (frontalis muscle)

The injection pattern of the frontalis muscle is shown in figure below. Generally, 4 to 6 injections are administered with 2 U / 5 sU per injection site at a depth of approximately 2-3 mm using an intramuscular, subcutaneous or intradermal injection technique. The first injection site can be marked at 3-4 cm cranial to the orbital rim, from the peak of the brow along the direction of the muscle fibers. The second point is found vertically from the medial canthus, at about 3-4 cm above the orbital rim. The third injection site is found between the first two points, also 3-4 cm above the orbital rim. Besides these three injection points per side, micro intradermal injections can be performed with approximately 0.5 U / 1.25 sU per microinjection to prevent any residual horizontal wrinkles.

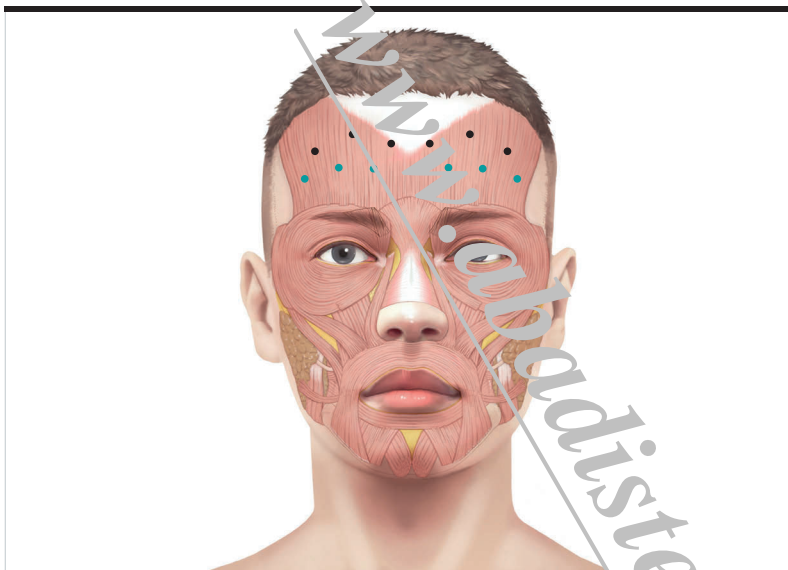


Figure 6

Injections horizontal forehead lines (frontalis muscle)

Black: the most common sites of injection (subcutaneous bolus injection technique) of about 2 U / 5 sU per injection site;
Blue: additional possible injection sites (intradermal injection technique) of about 0.5-1 U / 1.25 sU per injection site.

As the frontalis muscle is the only levator muscle of the eyebrows, a relative overdose can result in a brow ptosis. To prevent brow ptosis, injections in the lower half of the frontalis muscle should be avoided.

Dosage frontal dynamic wrinkles

The dosage for men is different from the dosage for women with men generally receiving a higher dosage due to larger muscle development.

	Dose	Number of injection sites
Men	6-20 U / 20-60 sU	4-12
Women	6-16 U / 20-60 sU	4-12



Figure 7
Horizontal forehead lines

Intramuscular as well as intradermal botulinum toxin injections



Video 4
Horizontal forehead lines
standard protocol

Watch video at <http://bit.ly/botulinum-toxin-in-aesthetic-medicine-academy>

2.2 Personal tweaks with Bocouture® / Xeomin®

Having adapted the new insights of fibroblast contraction, we hyperdilute Xeomin® to approximately 6 ml saline / 100 U. When using 10 U for the forehead, (0.25 ml), we add 0.3 ml, to get a volume of 0.6 ml per 10 U. This gives most significant fibroblast contraction and may result in increased lift. The injections are performed intradermally and also have an effect on the frontalis muscle. The dose and injection points remain the same, or more points can be added to assure a homogeneous distribution of the product. If needed, the dose can be increased in the upper forehead at follow-up visits to further reduce muscle strength.

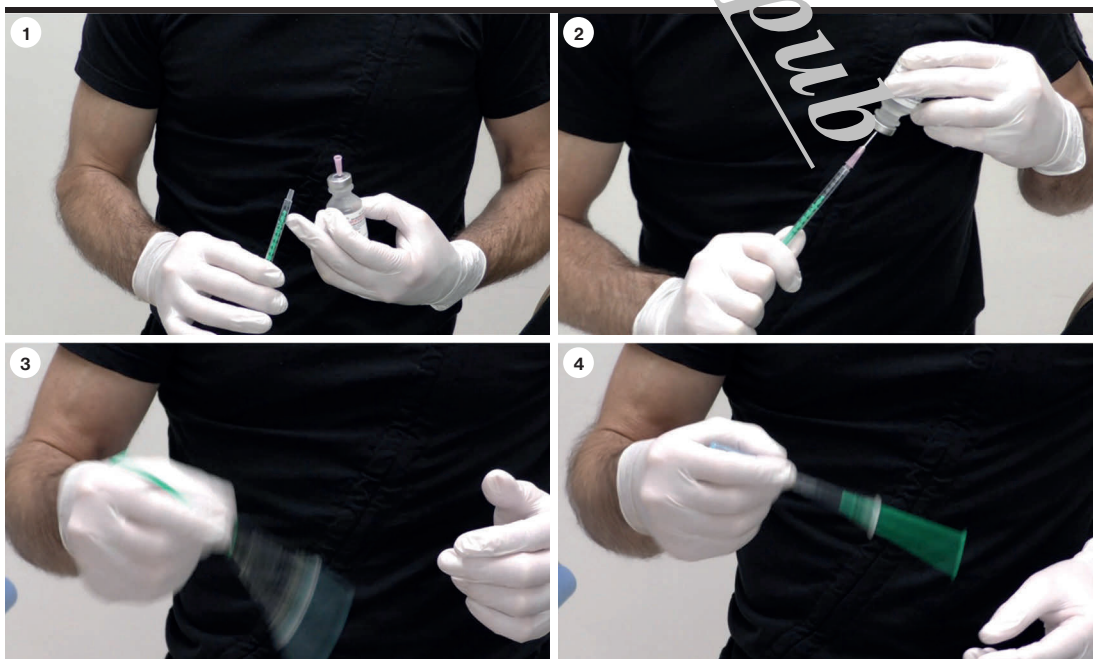


Figure 8
Hyperdiluting
Bocouture®/Xeomin®

- 1 In this case, 12 U for the forehead was chosen.
- 2 The ideal dose is 6 ml / 100 U = 0,72 ml / 12 U, so add saline until approximately 0,7 ml.
- 3 Leaving an air bubble in the syringe, gently centrifuge the bubble to the other side.
- 4 Repeat a few times for homogeneous solution.

upper third of the face



Figure 9

Intradermal injection
of hyperdiluted
botulinum toxin

- 1 Frontalis muscle in relaxed states.
- 2 Frontalis muscle in contracted states.
- 3 Marking each marked point, in this case hyper diluted Bocouture® (100 U / 6 ml).
- 4 Injecting each marked point, in this case hyper diluted Bocouture® (100 U / 6 ml).



Video 5

Intradermal injection
of hyperdiluted
botulinum toxin

Watch video at <http://bit.ly/botulinum-toxin-in-aesthetic-medicine-uma-academy>