

Innovative delivery devices: 3DOSE Unit Dose Injector

3DOSE Unit Dose Injector is a unique and innovative disposable injector for BoNT injections, with a patented clicker system which produces audible and tactile feedback per injected dose.

This new device, developed and launched by TSK Laboratory/Vlow Medical, aims to deliver exact measured unit doses. Calculating a unit per ml is simplified to units per click.

The audible and tactile feedback allows more accurate, consistent and easier injecting of high value drugs. Calculating errors in BoNT units can be eliminated from cosmetic practice.

This disposable injector is compatible with all major toxin brands. Two different 3DOSE injectors are available depending on toxin brand and the preferred dilution. The green 3DOSE injector is dedicated to the 2.5ml, 1.25ml and 0.63ml dilution and the orange injector is made for 2ml and 1ml dilution.

Using the 3DOSE

In my practice, I use the green one for my classical dilution with 1.25ml sodium chloride solution.

The 3DOSE injector comes in sterile blister packaging. The syringe has a regular luerlock system, a regular scaling but the most important is that the device has three different settings marked on the plunger.

The plunger is ergonomically designed and can be turned. These different settings enable us to choose how many units to inject per click:

- Green setting delivers 0.0125 or half unit per click
- Black setting delivers 0.025 or one unit per click
- Blue setting delivers 0.05 or two units per click.

I find that adapting the colour settings to my treatment plan allows me to save time and to inject all the blue points where I need two or a multiple of two units, all the black points for one or multiple of one unit and then the green points for the multiples of half units. As a result, the procedure is quicker; the plunger is turned only two times. To turn the plunger, the black lever should be first opened and then closed by fixing it down. Pictures of the coloured treatment plan allows reliability and reproducibility and helps me to understand the improvements needed during the next session.

Step one: Once reconstituted, the toxin has to be drawn up into 3Dose injector. Before drawing up the toxin the black lever should be positioned in the 'free moving mode'. An 18G needle is plugged to the luerlock system, then the toxin is taken from the vial making sure to remove all air bubbles.

Step two: Position the lever in the 'click' mode position to activate the clicker system.



Step three: Then the access needle is changed to a thin injection needle. I prefer the TSK invisible needle.

The invisible needle is so thin (14% thinner than 33G) that it provides almost painless injections and less bruising. And it has a low dead space that helps to save units.

The treatment can proceed.

Step four: Care should be taken to inject in priority order the superficial points then the deep points in contact with the bone in order to avoid the use of the tip of the invisible needle. Another important tip is that once a point is injected, stay in the injection area with the needle inside for a second after you hear the click, in order to have the full dose at the injection site.

The scale on the plunger is represented in units. The grip of the injector features a 'remaining unit indicator', so practitioners can visualise the injected product and the remaining units in the injector.

Advantages

- Good handling of the device.
- 3DOSE allows the practitioner to stay concentrated on the injection area, the technique (depth and inclination angle) and to pay attention to the patient's reactions and not get distracted by looking at the graduations on the syringe during the injection process.
- According to TSK, this feedback system aims to ensure that the injected volume is more accurate and more deliberate.
- 3DOSE avoids calculation errors and prevents over and under-injection.
- No waste of material. The company claims that practitioners may save up to 20% botulinum toxin per vial.
- It increases patient comfort which helps also to reduce bruising.
- It is a quick procedure due to the non-control

of the graduations and the painless injection.

- Visualisation of the remaining units in the injector.
- Patients always interested by the latest technologies.

Disadvantages

- Need of a learning curve.
- Need of multiple clicks on the same site if in between or multiple units are needed.
- Although it may appear to be a slightly more expensive treatment, the overall time saving, reduced toxin wastage, ease and accuracy of treatment and patient satisfaction compensate this cost. Another device should be used when a touch-up is needed after 15 days. This can be compared to the additional cost of cannulas for fillers.

Conclusion

As dosing precisely is key in botulinum toxin injections, we found that 3DOSE injector is an innovative tool that helps to inject half, single or multiple BoNT units, accurately and easily. Studies are coming which compare a half face injected with a classical syringe versus 3DOSE unit injector.

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