

## **Intradermal vs intramuscular injection of botulinum toxin for forehead wrinkles**

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### **Abstract**

Intramuscular injection of botulinum toxin A (BTXA) is commonly used for the treatment of forehead wrinkles. In practice, physicians often use an intradermal injection for this purpose, as they feel that there is a lower risk of adverse effects compared with intramuscular injection. Many physicians claim that there are no significant differences in anti-wrinkle efficacy on the forehead between intramuscular (IM) and intradermal (ID) injections. However, there are no direct comparative studies between those two injection modalities. We conducted a 24-week long, double-blinded, split-face, pilot study of three participants to compare the efficacy and safety of intradermal or intramuscular injection of BTXA for the treatment of forehead wrinkles. A maximum improvement of wrinkles and the time to achieve maximum effect were similar for both methods. The brow level was lower on the intramuscular injection side throughout the follow-up period for all participants. Subjective satisfaction with wrinkles was similar on both sides, but patients felt more heaviness of the eyebrow on the intramuscular side. No serious side effects were noted. In conclusion, the anti-wrinkle effect of BTXA was not significantly different between intramuscular and intradermal injections. However, side effects such as eyebrow ptosis, and heaviness were more prominent after intramuscular injection. This study is the first study that directly compares the effect of IM and ID BTXA on forehead wrinkles.

### **Biography**

Jongeun Lee graduated from School of Medicine at Kyungpook National University and is currently a dermatology resident in Samsung Medical Center, Seoul, Korea.

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