

## **Nasolabial Folds: One Indication and 3 Treatment Modalities**

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### **Abstract**

Nasolabial folds are of different types and each type requires a different treatment modality in order to give the patient the most optimum cosmetic outcome. Each treatment modality should be tailored to each patient and sometimes a combination of treatments is used. Furthermore, it is very important to assess the durability, cost effectiveness of each method along with patient satisfaction in order to decide whether to continue with the same treatment plan or divert into another one. I'm here comparing the efficacy of 3 treatment modalities used for different depths of nasolabial folds in 3 female patients with different ages in terms of patient's satisfaction, durability of the treatment and cost effectiveness of each procedure.

### **Case Description**

Three cases with ages, 26, 55 and 68 respectively came to the dermatology clinic complaining of prominent nasolabial folds. After cosmetic and anatomical assessment, they all had different depths of nasolabial folds ranging from moderate to deep. Although it's the same complain but treatment plan for each patient was totally different. fractional laser, dermal fillers and High Intensity Focal Ultrasound (HIFU) were used and the results were compared in terms of satisfaction, cost effectiveness and durability.

### **Introduction**

When it comes to skin aging, nasolabial folds in particular have been one of the most obvious signs as a result of skin sagging that's caused by loss of fat in the deep layers specially in the midface area [1]. Nasolabial folds are the outcome created by either the interaction between the overlying skin and fat on one side and the underlying muscular tissue on the other side or due to the continuous conflict between soft tissues and dynamic tissues [2].

Although it's not always the case, younger patients come to the clinic complaining about the accentuation of the folds during smiling. While on the contrary, older patients complain about the static nature of the folds smiling or not.

Zhang et al, 2015 classified the nasolabial folds into 5 types: the skin type, the fat pad type, the muscular type, bone retrusion type and hybrid type and based on clinical and aesthetic assessment the proper treatment modality was proposed accordingly [3].

Different treatment modalities have been used to address nasolabial folds including dermal fillers, botulinum toxin injection, fractional CO2 laser, High Intensity Focal Ultrasound (HIFU) and thread lifting.

Generally, dermal hyaluronic acid fillers and HIFU are used in mild to moderated folds, thread lifting for deeper folds and fractional laser for more superficial folds.

Sometimes, a combination of all treatment modalities is needed to give a better cosmetic outcome.

The patient satisfaction in terms of overall cosmetic outcome was measured on the initial follow-up visit 2 weeks after each procedure and on the final follow-up visit 3 months after the procedure using the Global Aesthetic Improvement Scale (GAIS) with 1 being excellent cosmetic outcome, 2 denotes great improvement but not optimal, 3 indicates noticeable improvement compared to the initial condition but still a retouch is advised, 4 shows that the appearance is basically the same as the original condition and a touch up is advised and 5 denotes that the appearance is actually worse than the initial condition.

To gain some objectivity on the final outcome, blinded assessment was done by a dermatology specialist using the GAIS as well.

On the other hand, durability and cost effectiveness was measured 3 months after the procedure using a using a 4 points Likert scale, 0–3 (0 [unsatisfied], 1 [Partially satisfied], 2 [Moderately satisfied], and 3 [completely satisfied]) [4].

### **Case 1**

#### **Treatment used: Dermal fillers**

A 26 years old patient came complaining of visible smile lines, after assessment, it was clear that she has moderate nasolabial folds. The best treatment approach was hyaluronic acid filler injection in the folds themselves and on the zygomatic peak for lifting the cheeks. The patient was injected with a total of 2 ml of dermal fillers (**Figure 1**).

On the initial follow-up visit, the patient gave a score of 1 on the GAIS scale which indicates excellent corrective result. While on the final follow-up visit, the patient gave a score of 3 which indicates Improvement of the appearance, better compared with the initial condition, but a touch up is advised.

In terms of durability, the patient gave a score of 2 (moderately satisfied) denoting that the filler started to wean off a little on the beginning of the 3rd month post procedure and she is re-considering refilling. This is attributed to the fact that the patient had really high expectations and I explained what are the realistic outcome will be with the possible drawbacks of the procedure.

In terms of cost effectiveness, the patient gave a score of 1 (partially satisfied) denoting that she expected a long-term result compared to the cost she paid but generally, she doesn't regret it. Finally, blinded GAIS score assessment was 1.



Figure 1: Before and immediately after filler injection to correct moderate nasolabial folds.

### Case 2

#### Treatment used: Fractional CO<sub>2</sub> laser

A 68 years old patient came complaining of different types of static wrinkles all over her face. As a result of skin aging and cheeks sagging, the nasolabial folds were moderately deep. I advised the patient that it would be more logical to start first with a procedure that would address all the different types of wrinkles in one setting that will also enhance the skin quality. Fractional carbon dioxide laser was done and 2 passes were applied on the nasolabial folds particularly (Figure 2).

On the initial follow-up visit, the patient gave a score of 2 on the GAIS scale indicating marked improvement of the appear-



Figure 2: Before and 2 weeks after fractional CO<sub>2</sub> laser treatment to correct deep nasolabial folds.

ance, but not completely optimal excellent corrective result. While on the final follow-up visit, the patient gave a score of 1 which indicates excellent cosmetic outcome.

In terms of durability, the patient gave a score of 3 (completely satisfied) denoting that the results kept on getting better with time which may be attributed to the fact that the process of collagen induction continues for a several months after the procedure.

In terms of cost effectiveness, the patient gave a score of 3 as well and sees that the cost matched the benefit she got and she is actually going to get another laser session. The blinded GAIS score assessment for that case was 4.

### Case 3

#### Treatment used: High intensity focal ultrasound (HIFU)

55 years old patient came complaining of saggy cheeks with deep nasolabial folds and refuses to do any procedure that requires injection.

I recommended doing a procedure that helps tightens the skin and lifts the face like HIFU since the nasolabial folds are caused mainly due to cheek drooping. HIFU was done for the face and neck with 2 passes done on the face from downwards up (Figure 3).

On the initial follow-up visit, the patient gave a score of 1 on the GAIS scale indicating great improvement and she gave the exact same score on the final visit denoting that she is very pleased with the results.

In terms of durability, the patient gave a score of 3 (completely satisfied) and she was advised to do another session 3 months after the first one for maintenance and better results.

In terms of cost effectiveness, the patient gave a score of 2 (partially satisfied) and sees that although the treatment was effective but it doesn't match the cost and it should be reduced.

Generally, what I observed is that procedures that tightens rejuvenates the skin and leads to collagen induction like laser and HIFU gave a much more satisfactory outcome to the patients in terms of durability, cost effectiveness and final cosmetic appearance although blinded GAIS score were in favor to HIFU than laser which is due to the fact that the patient still needs multiple laser sessions and the assessment was done only after 1 session.

On the other hand, although fillers were given a high GAIS score by patient and by blinded assessor, it failed to achieve a satisfactory cost-effective outcome as the other procedures. It's of no doubt that different types of nasolabial folds dictate the proper treatment that should be used, that's why pretreatment assessment is very crucial.

Further studies on a larger sample size of patients for each treatment modality with longer periods of follow-up are needed to confirm these findings.

### Conclusion

HIFU gave a much more satisfactory result in terms of durability, cost effectiveness and cosmetic outcome compared to laser and fillers, although objective blinded assessment was used but this comparison may be unfair since the laser patient still needed more than one session. Contrarily, fillers were satisfactory but it wasn't as cost effective as the other procedure.



Figure 3: Before and immediately after HIFU treatment to correct deep nasolabial folds.

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