

## Patient Satisfaction with Fat Transfer for Improvement of the Nasolabial Folds

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### ABSTRACT

**Background and Aim:** Soft tissue augmentation by fat injections has become the most commonly done cosmetic procedure in the early years. It is being widely used for the improvement of the nasolabial folds. The present study was done to evaluate patient satisfaction after fate injections.

**Materials and Methods:** The prospective and randomized controlled trial study was conducted on 524 consenting patients. Fate injection (2.5 ml) on each groove was injected under a local block with lidocaine 2% added epinephrine 1/300000. Patient satisfaction was evaluated at 14, 21, 45, and 90 days. A photographic record was maintained. Any side effects experienced by the patients were recorded.

**Results:** All the patients were satisfied after two weeks, and more than 80% were happy with this. The majority of the patients were happy at 21 days, and the satisfaction was maintained at 90 months.

**Conclusion:** Fat is a very safe and effective modality and also rarely complication for improving the nasolabial fold. This could prove to be a very useful tool for fate atrophy in the nasolabial fold. The patient's expectations after the procedure are very good or well satisfied and happy.

### Keywords:

Patient satisfaction, Fat transfer, Nasolabial folds, Complications, Epinephrine

### Introduction

The first communication about fat transplantation was presented by Neuber [1] in 1893.

Bruning [2] was the first to inject autologous fat into the subcutaneous tissue for soft-tissue augmentation.

Facial lipoatrophy is the loss of fat that supports the fullness, shape, and contour of the face. However, lipoatrophy is also a common, natural part of the aging process and occurs in patients with certain cancers and type 2 diabetes and with extremes of exercise [3,4].

Aging of the face is a physiological process that subcutaneous fat atrophy and probably psychological disorders.

The processes of fat atrophy are related to factors that are both genetic and environmental (lifestyle, diet, photo exposure, smoking habits, and position of sleeping) [5,6].

The number of cosmetic procedures has been performed in the early years that seen a dramatic increase.

The fat transfer became the simplest and easiest method among the different techniques used to correct the soft tissues for facial contour [7,8].

Most plastic surgeons in the recent past have approached fillers in the face by filling wrinkles, troughs, or holes. But recontouring is much more complicated than autologous fat transfer.

Therefore, recent technical advances aim to provide volume restoration for nasolabial fold rejuvenation in select patients. These advances include autologous fat transfer techniques [9,10] and other novel maneuvers of local fat transposition

[11,12].

Autologous fat transplantation could be considered the ideal tool for fate atrophy in the nasolabial fold. It is readily available in most patients, inexpensive, non-allergenic, has no potential for infectious disease transmission, and has high patient acceptance.

### Materials and Methods

The prospective and randomized controlled trial study was performed on 524 cases, all of which were female ages (30 to 70 year ), over a period of 15 years (2004 to 2019). Inclusion criteria for this study are age between 30 and 70 years and filling out the fat injection consent form. Exclusions from this study: Scarring of the nasolabial fold and skin diseases such as lupus and psoriasis. For this study, the ethics committee of Shahid Beheshti University of Medical Sciences was informed.

Informed consent was obtained in all cases.

We prepare complete consultation outlining the risks of the procedure. It is particularly important with adipose-tissue augmentations to explain that it may require two or three sessions to achieve complete patient satisfaction. Bruising and secondary infections are also discussed with the patient, so the patient discontinues aspirin. Diabetic patients also take an antibiotic for 7 to 10 days after the procedure

Patients with adequate fat stores do better than thin patients who have very limited fat.

### Technique

**Donor site:** Almost any site with an adequate adipose store can serve as the donor for fate transplantation. Although at present, there is no evidence to support one donor site over another, the better site at first lateral thigh and then flank. The upper,

outer quadrant of the hip nearly always has sufficient fat store, and fat is easily harvested and the scar produced by the cannula insertion is minuscule at worst.

**Anesthesia:** The local Anesthesia use for fat transplantation, the subcutaneous fate has few free nerve endings. Therefore, a very dilute concentration of local anesthetic is sufficient to provide complete anesthesia. We use lidocaine 20 ml, 2%, and diluted with 100 ml Normal Salin or Ringer's solution. Epinephrine at the concentration of 1/300000, added to the diluted NS or Ringer's solution this amount is sufficient to induce vasoconstriction and even blanch the overlying skin.

**Procedure:** Before we take informed consent is obtained before starting the procedure. The patient is photographed and areas to be treated are marked with the patient observing by looking in a mirror. The patient is placed in position and the donor site is marked, prepared, and draped. A small bolus of the solution is placed intradermally at the site of the insertion of the cannula by 25 gauge syringe. Through this site, the anesthetic solution ( 60 to 70 ml ) is injected subcutaneously with the 13-gauge needle. The suction cannula as the same gauged injector attached to one of the syringes (Figure 1) and used for harvesting can be inserted directly through the injected site. The syringes contained with fat are then upside-down position permitting separation of the adipocytes from lidocaine NS solution. The donor site is cleaned and a small pressure dressing is applied to the donor site. This dressing can be removed in 24 hours, and the patient may bathe. The fat is injected subcutaneously as needed. The injection is made upon withdrawal of the needle. The graft in the central cheek is gently molded for precise localization (Figure 2-6).

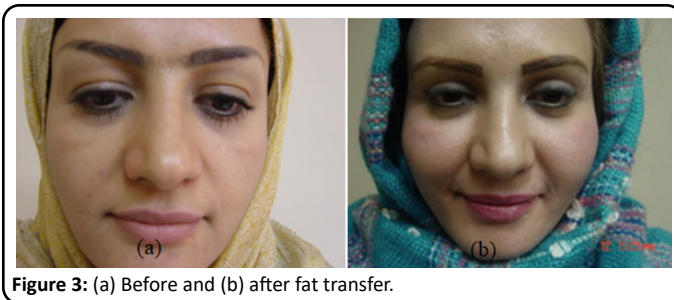


Figure 3: (a) Before and (b) after fat transfer.

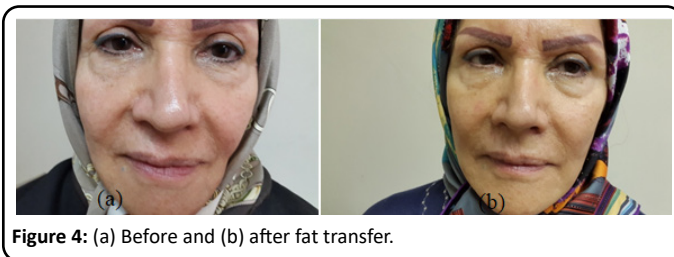


Figure 4: (a) Before and (b) after fat transfer.



Figure 5: (a) Before and (b) after fat transfer.

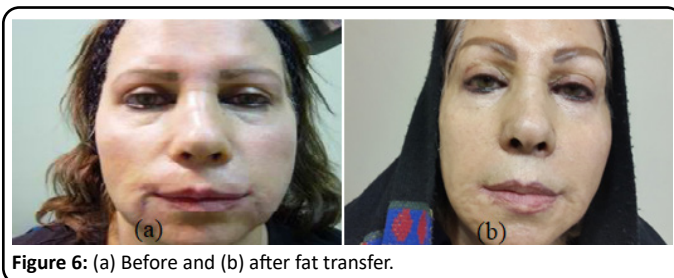


Figure 6: (a) Before and (b) after fat transfer.

The severity of nasolabial folds was measured using the wrinkle severity scale (Wrinkle Severity Rating Scale (WSRS); 0=absent, 1=mild, 2=moderate, 3=severe and 4=extreme; (Table 1) [13].

Table 1: Wrinkle severity rating scale.

Score	Brief description	Full
0	Absent	No visible fold
1	Mild	Visible fold with a slight indentation
2	Moderate	Moderately deep fold
3	Sever	less than 2 mm
4	Extreme	2-4 mm V-shaped fold when stretched

Patients with a history of injection with a permanent jell or any filler or botulinum toxin injections on the lower face in the last 6 months were also excluded from the study.

A follow-up was done at 14, 21, 45, and 90 days. Pre and post pictures were taken and patient satisfaction was evaluated in all the cases at each visit.



Figure 1: The suction cannula.



Figure 2: (a) Before and (b) after fat transfer.

## Results

Of 524 patients 58 (11%) had moderate deep folds and 214 (41%) had less than 2 mm visible fold when stretched and 252 (48%) were 3-4 mm and V-shaped folds when stretched (Table 2) (Figure 1, 2).

The acceptance and satisfaction at 14 days is 94% for score 2 and 91% for score 3 and 88% for score 4. After one month and also at three months satisfaction briefly.

**Table 2:** Visible fold rating scale.

Visible fold	Number of patient	Score
Mild	0 ( 0% )	1
Moderate	58 (11%)	2
Severe	214 ( 41% )	3
Extreme	252 (48%)	4

## Discussion

Treatment of facial lipoatrophy is justified to overcome the physical and social consequences of facial fat loss that occur as a natural part of aging or as a consequence of certain diseases and drug therapy.

Once lipoatrophy occurs, the goal of treatment is to re-establish the facial arcs and convexities that characterize the young face.

Autologous fat is the same as fat tissue in the body and therefore is reasonably safe and well-tolerated when administered. Fat transfer is a very safe and effective tool for age control. The amount of fat required is decided by the grade of groove usually between 1.5 to 3 ml for nasolabial folds.

Fat transfer highlights the fact that the patient appreciates the result of its best 30 days after injection.

Counseling of patients regarding the results to be expected before the procedure will lead to better patient satisfaction [14].

The complication is very rare but severe and may be cerebral fat embolism related to reported by Yoon et al., in which a 39-year-old woman suffered an acute fatal stroke immediately after autologous fat injection into the glabella region [15].

Autologous fat is the closest thing to an ideal facial filler. It is readily available, inexpensive, and simple to obtain. Its excellent suitability, taken with the high rates of patient satisfaction, ensures that it will become even more popular [16].

The only important for the late result of fat transfer is graft survival and rarely report about it [17].

It is related to patient satisfaction and graft survival. Unfortunately, the long-term survival rate of fat graft varied in the literature from 20% to 90%, and most studies are based on subjective analysis. [18,19] Some studies have tried to evaluate fat survival with objective tools such as sonography or Magnetic Resonance Imaging (MRI) [19-21].

Regardless of the follow-up in our patients the same as in most studies, the survival rate is estimated to range from 30% to 45% [20-23].

Related to the result of this study we discuss are multi factors that exist for patient satisfaction, from the consultation before the procedure, select suitable cases, good science about fat biology, and do not error in technique.

## Conclusion

Fat is a very safe and effective modality and also rarely complication for improving the nasolabial fold. The use of autogenous fat is uncomplicated and its only disadvantage is the absorption of almost half of it.

This could prove to be a very useful tool for fate atrophy in the nasolabial fold. The patient's expectations after the procedure are very good or well satisfied and happy.

## Conflict of Interest

The author has no known conflict of interest to disclose.

## Consent to Publish

Informed consent was obtained in all cases.

## Funding

No.

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