

# Injectable Fillers in the Upper Face



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## KEYWORDS

- Upper facial rejuvenation • Facial fillers • Autologous fat grafting • Fat transfer • Periorbital rejuvenation
- Facial aging

## KEY POINTS

- Facial fillers are valuable in volumetric rejuvenation of the upper face, alone, or as an adjunct to cosmetic surgical facial procedures and neurotoxins. The injector must evaluate the need of the patient and select the appropriate filler for specific anatomic area.
- HA fillers are considered the workhorse of volumetric facial enhancement owing to simplicity of use, limited adverse effects, and reversibility.
- Autologous fat grafting is gaining more popularity with long-term predictable results.
- Choice of facial filler is a shared decision between the patient and the surgeon. It is important for the facial surgeon to familiarize himself or herself with different types of existing facial fillers to choose the right material for the right anatomic area.

 Video content accompanies this article at <http://www.oralmxsurgeriatlas.theclinics.com>.

## Introduction

Over the past few decades, it has become clear that facial aging is a complex 3-dimensional process that involves all tissue planes and results in cutaneous changes, muscle laxity, fat atrophy and loss of volume, as well as bone loss in certain parts of the face. Aging in the upper face, like aging in the remainder of the face, is affected by genetics, loss of volume, and loss of support over time. In addition, extrinsic and environmental factors such as sun exposure, smoking and use of alcohol, as well as emotional stress play a role in upper facial aging.

A youthful forehead has no lines or wrinkles, and the brow in a male is at or above the bony orbital rim, whereas in a female it is usually arched with highest convexity at the junction of the medial two-thirds to the lateral one-third of the brow. This line usually coincides with the lateral border of the limbus.

With aging and loss of volume in the brow and periorbital region, the brows tend to descend, causing lateral hooding and flattening of the brow. This results in the appearance of a smaller eye, and many patients will complain of looking tired despite many hours of sleep and rest. In addition, these patients often have horizontal wrinkles on the forehead from subconsciously repeatedly raising their brows.

Some patients are very expressive in their face and with continual flexing of the corrugator and procerus muscles in the forehead, the patients can develop glabellar frown lines that are deep and visible even without flexing.

The brows and upper eyelids are interrelated, and changes in 1 area affect the other. With age, the brow fat attenuates and leads to loss of support and tissue descent that can also lead to lateral hooding and enhance upper eyelids' skin redundancy. In addition, loss of volume in the periorbital area and weakening of the orbital septum and laxity of the orbicularis-retaining ligaments produce aged contours, hollowing of the upper eyelid, and skin redundancy. Repeated flexing of orbicularis muscle and cutaneous aging results in lateral canthal lines or crow's feet, which also contribute to upper facial aging.

Laxity of the lower eyelid and fat protrusion can result in increased scleral show and lateral canthal rounding and give the patient a tired and aged appearance. In addition, the descent of the malar fat pad and exposure of the inferior orbital rim accentuate the nasojugal groove or the tear trough deformity.

## Surgical technique

In the last 2 decades, volume loss has been recognized to be a major factor in upper facial aging, and thus the use of fillers has increased exponentially on a yearly basis. There are a slew of fillers available in the market, and new ones are in the pipeline; the ideal filler is yet to be found, however.

Fillers can be classified into several categories:

1. Autologous fillers (fat, cartilage, dermis, fascia, collagen from patient's skin)

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2. Biologic fillers (animal- or human-derived collagen, animal- or human-derived hyaluronic acid)
3. Synthetic fillers (Radiesse, sculptra, bellafill, Silikone 1000)

The most common fillers used in the US market are the hyaluronic acids. Hyaluronic acid is a naturally occurring hydrophilic polysaccharide found in all living cells. These materials are manufactured by recombinant technology through bacterial fermentation. The biggest advantage of the hyaluronic acid fillers is that they are hydrophilic, and they are easily reversible with an injection of an enzyme called hyaluronidase.

This is extremely important when injecting in difficult areas with thin skin such as the tear trough. In this area, too superficial an injection can result in a bluish hue under thin skin, known as the Tyndall effect. On the other hand, too much volume can result in lumpiness and exacerbation of bags under the eyes, especially when the patient is smiling.

### Glabellar folds

Dynamic glabellar lines are best treated with botulinum toxins. Some glabellar folds, however, may have a deeper etched component that is best treated with filler, and therefore a combination treatment will be preferable. Oftentimes in this area, a combination of botulinum toxin and hyaluronic acid filler is used. Although both materials can be injected during the same session, it is more desirable to inject the toxin first and have the patient come back 2 weeks later for an accurate filler injection. The authors have used both Restylane and Juvederm in this location. If the lines are superficial, the material can be diluted with saline in a 1:1 ratio. A small amount of material is needed and may need to be layered in the mid-dermis to superficial dermis with a linear threading technique. When injecting superficially, temporary blanching may occur, which should be differentiated from an occlusive blanching due to intravascular injection (Figs. 1 and 2).

### Forehead lines

Forehead lines are transverse lines formed by the action of the frontalis muscle in elevating the brow. Patients with dynamic forehead lines are best treated with neurotoxins. In patients with moderate-to-severe ptosis, however, caution should be exercised, as with relaxation of the frontalis, the forehead and brow ptosis worsens. For patients with deep static lines on the forehead, injection of filler may be a good option. Restylane or Juvederm can be injected to the forehead lines. If the person is thin in this area, the material can be diluted in a 1:1 ratio with saline (see Figs. 1 and 2).

### Lateral canthal lines: (crow's feet)

The lateral canthal lines are formed by action of the orbicularis oculi muscle and are influenced by sun damage and smoking. Because in most cases, these are dynamic lines, they are best treated with neurotoxins. In cases where the lines are etched in to the skin and are visible without any muscle action, an addition of filler may be indicated. In these cases, the authors use Juvederm Ultra hydrated with saline 1:1 or Restylane Silk. They use a 32 gauge needle and small amounts of material in this area; 0.2 cc or less per side.



Fig. 1 Preoperative photo.



Fig. 2 Postoperative photo, status after Restylane and Botox injection to the upper face.

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