

Structure and Symmetry Analysis Prove Essential to Success of Non-Surgical Facial Enhancement

By Alexander Z. Rivkin, M.D.

The world of aesthetic medicine has experienced a shift over the last decade. As every survey has shown, non-invasive laser and injectable aesthetic treatments have easily overtaken surgical procedures in popularity. More importantly, their advent has made the very concept of cosmetic enhancement much more accessible, acceptable and affordable for ordinary people.



Some of the more technically difficult injection procedures involve altering the contours of facial structures, which I call non-surgical facial sculpting. In my practice, I perform sculpting for either aesthetic enhancement (nose, chin, facial slimming, etc.), or for age related volume replacement (cheek, temple, tear trough, etc.).

Many consider the foremost challenge of this field to be injection technique; but in actuality that can be learned with relative ease. It is the ability to accurately analyze facial aesthetics and symmetry that takes some time and practice to develop.

Many consider the foremost challenge of this field to be injection technique; but in actuality it is the ability to accurately analyze facial aesthetics and symmetry that takes some time and practice to develop.

Patients do not come in complaining of volume loss in the malar fat pad, the canine fossa and the nasojugal groove. They complain that their face is falling. They don't tell us that they have middle vault collapse, pollybeak deformity or dorsal saddling. They complain that they had a bad nose job. The trick is to understand the anatomy behind their aesthetic shortcomings and how to correct them.

I frequently encounter patients who come to my practice after having received a round of expensive injections that they feel did not work. They complained to their previous physician about looking old and tired and the physician reflexively filled their nasolabial folds without performing a good aesthetic analysis. After treatment the patient still felt that they looked old and tired so they did not go

back. The physician couldn't see that the source of the complaint was the patient's tear trough and malar volume loss.

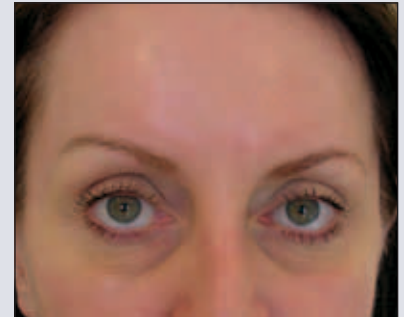
When I examine a face I make sure to do so from five major angles: frontal, both profiles and both oblique (45°) views. These are the main views that people see in the mirror and in photographs. If I can improve the patient's appearance from all five angles, I know that I have done a complete job.

During my evaluation, I am also paying close attention to skin quality and laxity. Quality of the skin will determine further recommendations of fractionated CO₂ laser resurfacing for fine lines and pore size; pulsed dye laser treatment of telangiectases; and intense pulsed light (IPL) treatment of brown spots and rosacea.

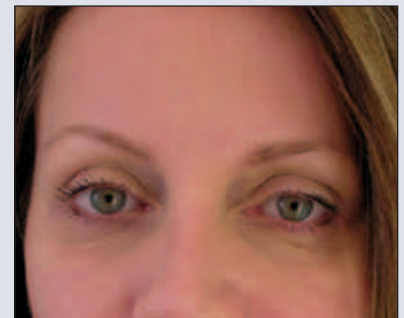
Skin laxity affects how aggressive I am with volume correction. In an area like the tear troughs, for example, I will be more conservative with a patient who has laxity and wrinkles, compared with someone who has firm skin. It is easy to over inject a patient with laxity in an effort to get as smooth a result as possible under the eyes. The outcome is an undesirable puffiness. Fortunately, as long as we are using a hyaluronic acid (HA) product such as Restylane from Medicis (Scottsdale, Ariz.) or Juvéderm from Allergan (Irvine, Calif.), this effect can be reversed with hyaluronidase.

As the patient is explaining their aesthetic goals, I am watching their face move and evaluating the dynamic lines of their forehead, glabella and crow's feet. As with any sculpture, the skin's surface should be relatively smooth, thus neurotoxin is almost always part of the treatment plan for the aging face.

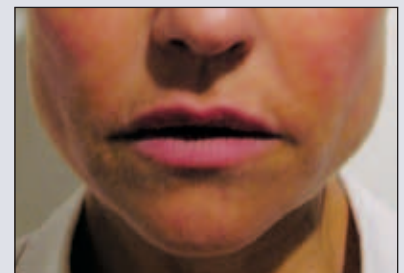
For medial brow ptosis, I place 12 to 20 units of neurotoxin into the procerus, corrugators and depressor superciliaris, taking care to affect the frontalis muscle as little as possible. For lateral brow ptosis



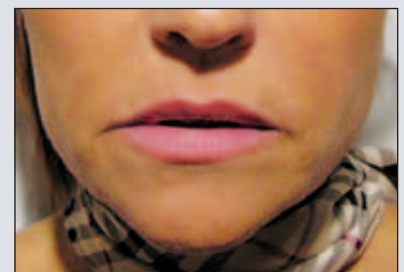
Nasojugal groove area before Tx



Nasojugal groove area after injections
Photos courtesy of Alexander Z. Rivkin, M.D.



Masseter muscle before Tx



Masseter muscle after BOTOX injections
Photos courtesy of Alexander Z. Rivkin, M.D.

When examining a patient's face Dr. Rivkin evaluates the following:

- Position of the eyebrows for brow ptosis (medial or lateral)
- Arch of the brows
- Temporal fossae for volume loss
- Nasojugal area for fine lines and volume loss
- Eyelashes for thinning and lightening of black pigment
- Zygoma for flattening, affecting the overall shape of the face (oval is youthful, whereas square looks older)
- Malar area for volume loss and splitting of the malar fat pad
- Upper nasolabial fold in the area of the canine fossa for volume loss
- Nasolabial folds
- Nasal tip for ptosis
- Soft cheek area for volume loss, giving the gaunt, hollow look of the aging face
- Lips for general volume loss, loss of definition of the vermillion border, flattening of the cupid's bow and fading of red pigment
- Oral commissure for inferior descent
- Melomental area for volume loss and development of a fold
- Angle of the mandible for hypertrophy of the masseter muscle, affecting the shape of the face (a soft oval looks young vs. an angular square shape looks hard and aged)
- Jawline for skin laxity, jowling and loss of volume in the antionion notch or prejowl sulcus
- Mental crease
- Submental area for visible skin laxity and ptosis of the submental fat pad

or to increase the arch of a flatter eyebrow, four to eight units of neurotoxin, distributed in the lateral orbicularis oculi should give a subtle lifting effect. Small amounts of Juvéderm or Perlane can also be injected under the brow to push it up. This should be done carefully to avoid giving the patient an overhanging brow.

Descended oral commissures respond well to neurotoxin injection into the depressor anguli oris. Four units in two injections is enough for most people. If more of a lift is needed, I inject HA into the melomental folds.

With time, many women shift from an oval shaped face to a more square shape. This is due in some part to inferior descent of the tissues, but masseter hypertrophy also plays a big role. Bruxism and teeth clenching are very common and, like any muscle, the masseter muscle builds bulk with regular exercise. A course of neurotoxin injections will atrophy the muscle noticeably and reduce the appearance of a heavy, masculine jaw. While some patients do not need more than three rounds of injections to get long lasting results, others will need to be injected for a longer period of time. The key is to keep the muscle weak by injecting every three months.

Filling the nasojugal groove should be done with particular care and gentleness since the skin in this area is thin, the area is very vascular and you are within millimeters of the eye.

Filling lines with dermal filler products is no longer enough. We know, and increasingly patients know, that loss of volume and support structures in the face are the most important signs of aging. The eye

associates youth with full cheeks, minimal depressions and indentations, as well as smooth transitions between facial zones.

Volume replacement in the temporal fossa can be accomplished with Juvéderm, Radiesse from Merz Aesthetics (San Mateo, Calif.) or Sculptra from Dermik, a sanofi aventis company (Bridgewater, N.J.). I prefer Sculptra because it gives the smoothest result and lasts a very long time. Volumizing a large surface area smoothly is difficult, but I can achieve results with Sculptra that are perfectly natural. The product should be diluted to 8+ ccs per bottle and injected deep into the subdermis to avoid lumping. Sculptra's results are not instant but appear over time.

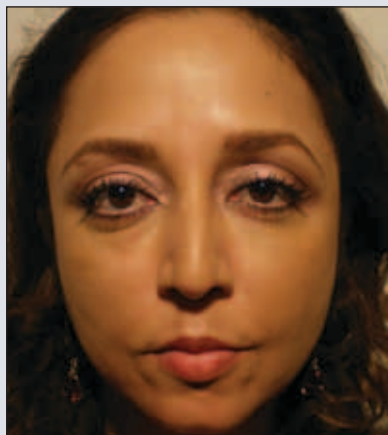
Filling the nasojugal groove should be done with particular care and gentleness since the skin in this area is thin, the area is very vascular and you are within millimeters of the eye. I think that an HA filler (Restylane or Juvéderm) is best for this region, as the ability to dissolve part or even all of the product with hyaluronidase is critical. There is some unpredictability with the final result and this is one area where the contour should be perfectly smooth.

Lumping of the product, the Tyndall effect or swelling are significant risks. Restylane seems to be less hydrophilic and I am not seeing swelling nearly as much as I did with Juvéderm. I only hope that the duration of effect for Restylane is as long as that of Juvéderm. I routinely see Juvéderm patients with results lasting two or three years after injection.

I usually correct volume loss of the malar and zygomatic areas with Radiesse. In these areas I am looking for a well-defined lift and Radiesse is a thick material that maintains its shape and doesn't spread out like some softer dermal fillers. I inject deep, next to the bone so that the contours are natural. For patients who are worried that they might not like the effect, I offer Perlane. I inject it deep, just like Radiesse. Volumization with Perlane



Before Tx



After nasojugal groove and anterior cheek injections
Photos courtesy of Alexander Z. Rivkin, M.D.

is very good and the option of reversal is reassuring to the hesitant patient. Duration of effect, of course, is not quite as long. Occasionally, I will use Sculptra for patients who complain about having to come back every year for Radiesse. With Sculptra, the effect is great, but it takes multiple visits over several months to be complete.

Like the temporal fossa, the soft part of the cheek has a lot of surface area, so I like to use Sculptra here. I usually inject the product in a fanning technique for a smoother contour.

To fill a sunken upper nasolabial fold, I will inject deep against the bone. I offer patients the same options as the malar and zygomatic regions, with Radiesse being my preferred dermal filler. This area should be injected with great care to avoid compression of, or intravascular injection into, the angular artery. Ischemia or even necrosis of the nasal ala, sidewall and dorsum has been reported after dermal filler injection in this area. I inject slowly, watching the skin for blanching and I never overfill to where the skin is taut. I have recently begun using blunt tip cannulas instead of needles to fill this area, as well as the cheeks and tear troughs. It takes a bit longer, but the pain and risk of bruising is much less.

Other areas that are often overlooked in the reversal of facial aging include the nose, lips and eyelashes.

The choice of product for the nasolabial folds depends on the depth of the fold. For superficial folds I use Juvéderm because it is the softest and smoothest of the dermal fillers and I can inject superficially. For deep folds I use Radiesse subdermally. Sculptra is an option, but most nasolabial fold patients don't like to wait. Unless

the patient is in their 30s, I do not want to fully fill the nasolabial folds. Leaving a soft, shallow line makes the result appear more natural. There is no bigger giveaway than having a 15-year old's nasolabial folds on a 60-year old's face.

With time, the melomental area loses volume and visible hollowing develops on both sides. Just like the nasolabial fold, filling the line is often not enough. Only by replacing volume with HA or Radiesse can we make the area look more youthful.

A deep mental crease is another area of volume loss and an indicator of age. The skin here is tethered relatively tightly to the underlying structures, so the amount of lift is limited. Over injection of the area can result in over projection of the lower lip as the dermal filler tracks superiorly. It can also make the crease appear deeper if the product tracks inferiorly and augments the skin under the crease.

Early jowling can be camouflaged by filling the antionion notch or pre-jowl sulcus. I prefer the smoothness of HA here.

Conversely, the submental area cannot be addressed with dermal fillers or neurotoxins. If skin laxity here is minor, radiofrequency-based skin tightening can be attempted. Otherwise it is a surgical question.

Other areas that are often overlooked in the reversal of facial aging include the nose, lips and eyelashes. Nasal tip ptosis that is worsening over time can be corrected by injecting Radiesse or Perlane in the super perichondral plane to lift the skin. Filling the columella can also provide some lift and support to the nasal tip. Dermal filler injection in the tip of the nose is a bit tricky and carries some risk of ischemia and necrosis if not done correctly. I always recommend using Perlane until the injector is very comfortable with this procedure. Nitropaste and hyaluronidase should be close at hand when filling the nasal tip area.

Great lip enhancement is an art form. The upper and lower lips should have a one-third to two-thirds ratio in height and projection. The cupid's bow and vermilion border should be well-defined, but not shelf-like. For the lips, Juvéderm is my favorite product. It is soft and flows smoothly through the tissues. Nodularity after Juvéderm injection in the lips is rare.

Eyelashes are a frequently overlooked sign of aging. Latisse works for almost everybody and is safe. I tell patients to apply daily until they reach the desired length, darkness and thickness. Then they can back off to every other day or less to maintain the effect.

In replacing volume and smoothing contours, we are truly sculpting our patient's faces. Today we have the tools to sculpt through a needle with dramatic results – making a patient look ten years younger in ten minutes. However, these procedures are also more accessible to under trained and inexperienced providers. Since nothing prevents any medical practitioner from performing injections

and laser treatments, some physicians may start seeing patients before they are optimally trained. As a result, we see burns, over-inflated lips, lumpy nasolabial folds and droopy eyebrows.

Education and training are the keys to success. Before treating we have to be able to perform accurate and precise aesthetic analysis.

Education and training are the keys to success. Before treating we have to be able to perform accurate and precise aesthetic analysis. Like any sculptor, the aesthetic physician must have a keen aesthetic sense, completely understand the anatomy and know his instruments intimately. Comprehensive knowledge of the advantages and limitations of each dermal filler, collagen stimulator and neurotoxin is the best guarantee of optimal results. ■



Before Tx



After nasojugal groove and anterior cheek injections and non-surgical rhinoplasty

Photos courtesy of Alexander Z. Rivkin, M.D.



Alexander Z. Rivkin, M.D.

Dr. Rivkin, cosmetic surgeon and founder of Westside Aesthetics in Brentwood, Calif., is also an assistant clinical instructor at the UCLA Department of Medicine, Division of Dermatology. His practice is focused on non-invasive cosmetic procedures and clinical research. Dr. Rivkin received his undergraduate degree from Columbia University and his medical degree from Yale. He was the first physician in the country to offer the Non-Surgical Nose Job, his signature method for non-invasive correction of cosmetic nasal irregularities.

Dr. Rivkin has become an international authority on non-surgical cosmetic treatments and has been featured throughout the national media on shows like *The Today Show*, *The Doctors* and *EXTRA*.

He currently divides his time between patient care, research, educating other physicians, media appearances and lecturing at scientific conferences throughout the world.