



Browlift and Forehead Lifts

Our facial expressions are made with the muscles around the eyes and around the mouth.

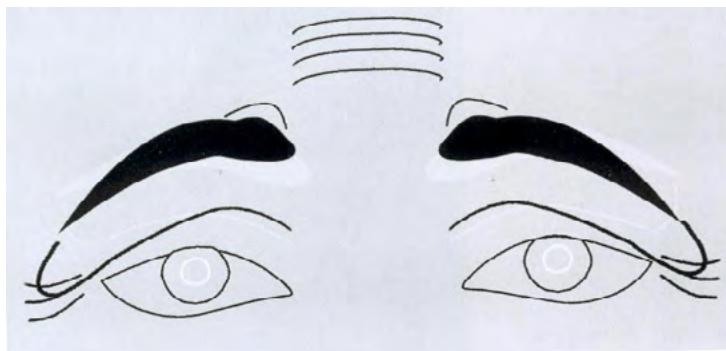
For decades, cosmetic surgery ignored the importance of the forehead and brow on facial expression.

Caricaturists and cartoonists have always understood the link between the emotions and their expressions. In the best of animation, emotion is conveyed by a few simple lines.

Much of this is conveyed by the position and shape of the brows, and by lines that are formed by contraction of the muscles around the eyes. Fear, anger, sadness and fatigue are all read from subtle but significant differences in these expressions.



Angry expression, resulting from overactive frown muscles



Sad looking expression, from sagging temples

Much of the astonishing success of Botox® relates to this; it has become the treatment of choice for many patients who see expressions they don't like becoming etched on their faces.

Sagging of the brows may also contribute to the apparent excess of skin of the upper eyelids. *Removal of upper lid skin when the problem is brow sag will make matters worse and may cause a patient to look angry.*



Anatomy

The forehead is the hairless frontal skin between the hairline and the brows, and between the temples.

The brow includes the eyebrows, but is also the heavier and thicker area beginning above the eyelids and arching over the bony ridge surrounding the upper eye.

The eyebrows are a vital part of how we express ourselves (which is why people who "have had too much Botox®" look so weird).

When the brow sags, or descends, it does so in several different ways.

- From the temples down and in, giving a sad appearance
- Sharply down in the inner portion giving an angry appearance (often with a sharp vertical crease above the nose)
- Sag along the entire length, making a fatigued appearance
- In other, less common combinations

Treatment of brow sag may involve treatment of either the forehead or temple or both.

Skin

The skin of the forehead is often sun damaged with spots and wrinkles. The skin can be very thin or surprisingly thick and tough. This plays a major role in how we treat brow sag – patients with thick and heavy brows don't respond well to minimal incision procedures.

Horizontal and vertical lines are mostly related to excess activity of muscles of expression over years.

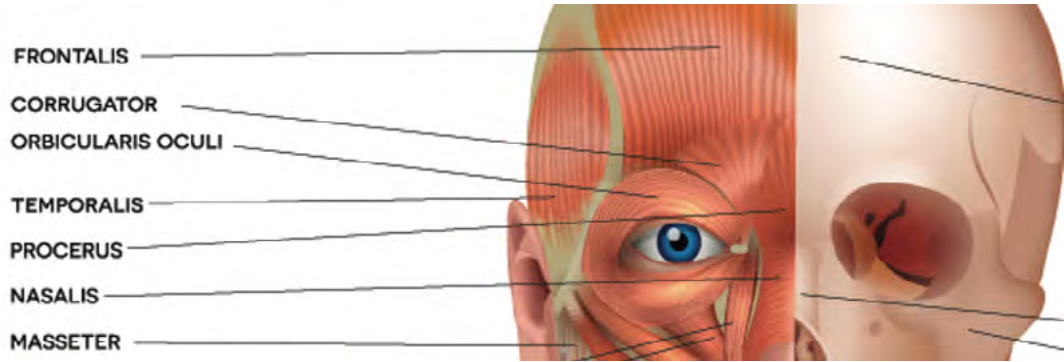
Fat

The forehead and brow vary quite a bit in how much fat is under the skin. There is a thicker pad of fat at the level of the brow and extending a short way upwards. How thick this is plays a big role.

Muscles

Under the surface, there are two groups of muscles. Deep vertical frown lines are caused by a group of muscles fanning out from the root of the nose, and long rows of horizontal lines are related to the muscles that raise the brow. The "elevators" raise the brow and the "depressors" pull the brow down.

The elevators are the wide, thin frontalis muscles. They attach to the brow and connect through the forehead and scalp to similar muscles at the back of the skull. The depressors are more complex. This is the array of muscles above and at the top of the nose. The forehead is also pulled down by the orbicularis muscles which go around and close the eyes when they contract.



The two groups act in opposite ways to each other much like the biceps vs. the triceps.

Reducing or weakening one group makes the other relatively stronger, which is why the brow may move up a little when Botox® is used to paralyze the depressor group. Surgery to weaken or remove some of the depressor group also makes the brow rise.

Incisions

Forehead and browlifts have been done in many ways.

- Direct removal of skin just above the eyebrows
- Removal of a crescent of skin in each temple hairline region
- Central forehead lift with incision in a deep forehead crease
- Traditional "open" lifts with incisions from ear to ear
 - Across the top of the head ("coronal")
 - Along the frontal hairline
- Endoscopic (minimal incision) "endobrowlift"
- A "semi-open" brow lift
 - Crescent Incisions at the hairline, *and* use of the endoscope

Because the forehead is such a prominent part of the face, visibility of the incision is often the most important consideration.

I rarely do open brow lifts any more. Even though the scar is placed where we think it may be best concealed, the length alone makes it intimidating for patients. Healing with even a little bit of scar widening or hair loss can make it conspicuous. And there is also significant sensation change behind the incision which may be permanent.



Direct skin removal above the eyebrows and central skin removal in a brow crease line are also more or less historical procedures only. The scars are just too obvious.

Since the endoscopic procedure was developed in the early 90's, I have only done open forehead lifts for patients with extremely loose forehead skin. Again, the incision running from ear to ear either across the top of the head or along the frontal hairline just isn't acceptable anymore.

The open approach and the endobrowlift both allow the surgeon to see the muscles and to remove, divide, or cauterize the muscles to make them less active. I do not believe the frown muscles should ever be made completely inactive. An expressionless brow is not attractive. It looks strangely "empty" Striving for this is fruitless and wrongheaded.

Direct removal of skin either in the mid-forehead crease or along the upper edge of the brows may also leave a conspicuous scar, and these techniques are rarely used as well. Skin is removed and the incisions are closed with stitches, without treatment of the muscles. . This limits the effectiveness of the operation but also makes it a lot simpler to do.

Instead, the most common technique is endoscopic, through a series of small incisions behind the edge of the hairline. The endoscope and surgical instruments are manipulated through these incisions to separate layers, remove or divide muscle, and lift the scalp and forehead gently, leaving minimal scars and subtle, natural changes.

Many plastic surgeons have little or no familiarity with endoscopic techniques. Experienced endoscopic surgeons are confident the operation is a valuable one. But it isn't for every surgeon, and it isn't right for every patient. Surgical judgement is involved. You will need to discuss what techniques are being suggested and how their pros and cons relate to you before making a plan with your surgeon.

Anaesthesia

Surgery is usually done under general anesthesia (completely asleep), although it is possible to do browlifts under local anaesthesia with sedation. We add local anaesthetic by injecting it at the start of and during surgery, which helps to minimize post-operative pain. There are some surgeons who do all their facial rejuvenation surgery including browlifts under local anaesthesia with sedation ("twilight"). This may sound attractive, but I think a modern well run general anaesthetic given by a qualified anaesthesia specialist provides a patient with the best possible experience.



Procedure

Once you are put to sleep, and the face has been washed with antiseptics and surrounded with sterile towels ("drapes"), the operating team does a final "time-out".

Safety checklist. http://www.who.int/patientsafety/safesurgery/ss_checklist/en/

The incisions are created and the process continues depending on which approach is used. With the endoscopic approach, there is a series of small incisions through the scalp just back of the hairline, and these are used to lift the scalp from the forehead all the way down to and beyond the brow. Most of this is done while the telescope is inserted, with the surgeon working with the image on a video screen. Once the base of the nose and the frown muscles are reached, they are divided, cauterized or reduced. The scalp is slid back and upwards and held in place with either tiny titanium or absorbable fixation devices and stitches, and the incisions are closed, with little or no skin being removed. A semi-open procedure also removes crescent shaped areas of skin, to further lift the forehead upwards and outwards.

With an open browlift, scalp is totally separated in front of the incision and turned down, giving the surgeon access to the muscles directly. Scalp is removed along the incision line to lift the forehead and brow. This is a very powerful lift and unlike other techniques, if overdone it can cause a surprised or frightened look.

AFTERCARE AND "RECOVERY":

Many browlifts are done in conjunction with a facelift, and I keep all my facelift patients overnight in the surgery centre. When a browlift is done alone or with eyelids only, they go home after a suitable period in the post anaesthesia recovery unit.

There is often a significant headache as the long acting local anaesthetic we inject prior to surgery wears off. This is typically at about 8 – 12 hours after surgery. It doesn't last, but usually pain relievers are required. Iced compresses may be very helpful.

Risks:

- Infection
- Bleeding
- Sensation changes
- Hairline alteration



An unexpected benefit:

Shortly after we began doing endobrowlifts in the mid-1990s, we noticed patients who had long suffered migraine headaches began to tell us their headaches were diminished dramatically in severity and frequency. Not long after, doctors began to use Botox® to get some of the same effect.

Current research shows significant benefit from surgery for migraine sufferers who have not responded by other treatments. Surgery for migraines sometimes combines endoscopically removing the corrugator frown muscles with similar release of nerves in two or three other locations. This surgery is not widely available but shows great promise.

<https://journals.lww.com/plasreconsurg/pages/articleviewer.aspx?year=2011&issue=02000&article=00014&type=Abstract>



Summary

Brow and forehead lifts are done in many ways.

Aging changes of the forehead is an area of facial rejuvenation that may be neglected but often plays a substantial role in an appearance that patients wish to change. An appropriate browlift procedure, done either with or without a facelift and or eyelid surgery, may substantially add to the effect of the rejuvenation process.

Meet the Doctor

Benjamin Gelfant, MD FRCSC

Dr Gelfant is a member of the Canadian Society for Aesthetic (Cosmetic) Plastic Surgery (CSAPS), as well as the American Society of Plastic Surgeons (ASPS) and the American Society for Aesthetic Plastic Surgery (ASAPS).

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