



Eyebrow transplant procedure of 550 grafts for transgender male to female process.

Raising Eyebrows

Jeffrey Epstein, MD, FACS, discusses the ins and outs of eyebrow transplants

By Jeffrey Epstein, MD, FACS

When it comes to eyebrows, bushy is back. Going, going, gone are the pencil-thin, overly manicured brows that involved almost daily maintenance with tweezing, waxing, threading, or laser hair removal.

But what's a patient to do now that his/her natural brows are all but gone or simply too thin?

Enter eyebrow transplants. The great majority of which are performed to repair the thin or complete absence of eyebrows due to overplucking.

As with all hair transplant procedures, the goal of eyebrow restoration is to reapproximate the natural direction, angle of growth, and distribution of hairs. Because of how reliably they regrow, scalp hairs make the best donor hairs. On request to avoid the need for regular trimming, I have used both chest and leg hairs with less reliable regrowth. The scalp donor hairs need to be trimmed usually (or typically) twice monthly because they continue to grow as if they were still on the scalp. The preferred technique for obtaining these donor hairs is follicular unit grafting, where a single donor strip is

removed then sutured closed.

These donor sites typically heal as a fine-line scar less than 2 mm wide and 5 cm long. The best scalp location is where the hairs are least likely to turn gray and (ideally) there is a slight curl to the hairs. In patients who want to keep open the possibility of shaving their head, the follicular unit extraction (FUE) technique avoids any linear donor-site incision. One downside of FUE is the slightly lower percentage of hair regrowth. This compounds what is already a challenge in all eyebrow procedures as hair regrowth is typically around 85%, versus more than 90% for the scalp. Another downside with using FUE hairs is that because the hairs need to be trimmed quite short for extraction, it's more difficult to appreciate the natural curl of the donor hairs, thus making it challenging to achieve proper alignment of each graft so that its curl complements the desired angulation of hair growth.

The great majority of eyebrow procedures are performed to repair the overly thin or complete absence of eyebrows due to overplucking. Other causes include hypothyroidism (thus the need for obtaining thyroid function tests), trichotillomania

Take-Home Points About Eyebrow Transplants

- 1) Shallow angulation (less than 15°) is key to assure eyebrow hairs grow close to the skin rather than sticking out.
- 2) The use of the smallest possible recipient sites and follicular unit microscopic dissection allows for the most natural-appearing and impressive results.
- 3) For patients who shave their head, follicular unit extraction can be a viable alternative to follicular unit grafting.

(patients must no longer pluck), scarring from prior trauma, and genetics. While not a contraindication to having the procedure, occasionally a prior tattoo for permanent makeup can result in some hair loss.



Direction of recipient sites is critical for eyebrow transplants.



Patients need to understand that the goal of the procedure is not to achieve “perfect” eyebrows, but rather a significant improvement in their appearance. A small percentage of hairs will typically not grow in the ideal direction, so they can be plucked out or trained to grow in the desired direction. Patients are also instructed on the need for trimming of the eyebrow hairs which grow at the same rate as scalp hairs.

EYEBROW ARTISTRY

The design of the eyebrows typically differs by sex, reflecting concepts of masculine versus feminine beauty. In women, there is generally an arch that usually corresponds somewhere between the lateral limbus and lateral canthus. This design can be slightly or more sharply angled depending on how dramatic an eyebrow shape is desired. The inner aspect of the eyebrow usually corresponds to the medial canthal region, keeping in mind that there will be progressive medialization of the eyebrow with aging which connotes senescence. Not uncommonly, female patients will already have a good idea of the desired shape and size of the brows and are offered the opportunity to bring in photos of eyebrows they like and even mark out the eyebrows.

Men usually have less of an idea of

what they want, which corresponds to the fact that the masculine eyebrow is usually rather flat and not very sculpted, with some scattered hairs both below and above the main eyebrow. There can be the suggestion of an arch along the lateral limbus region, achieved by having the vertical width (thickness of the eyebrow) in this area a bit greater. For both men and women, other factors that impact the shape, size, and position of the eyebrows include the shape of the orbital region and the position of the hairline.

UNDERSTANDING THE EYEBROW TRANSPLANT PROCEDURE

These procedures are usually performed under local anesthesia complemented by oral sedation with diazepam and Ambien®. Once anesthetized, the donor strip is removed with the patient sitting in an upright position, then the area is sutured closed with a running 3-0 Prolene® or Caprosyn® suture. The latter is self-absorbing, making it convenient for out-of-town patients. With the typical procedure consisting of 600 grafts, this donor strip is on average 4 to 5 cm in length and approximately 1 cm in width. Care is taken to find the best possible donor location, which is where the hairs are least likely to turn gray, have a slight to



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moderate curl as desired (if available), and are of somewhat thin caliber (once again, if available).

If the procedure is to be done by the FUE technique, these donor grafts are typically extracted from the back of the head with the patient lying in a prone position. Rather than having to divide three and four hair follicular units into one and two hair grafts, it is best to extract just one and two hair follicular units (the ideal number of hairs per graft with these eyebrow procedures) that will likely have a higher percentage of hair regrowth than these divided grafts. For most patients, one hair graft will achieve the most natural-appearing results. Patients with fine hairs often require use of some two hair grafts in the center aspect of the eyebrows to increase the density.

As the grafts are being dissected under microscopes by trained hair technicians, I will craft the recipient sites (between any already-existing hairs) into which the hair grafts will get placed. These recipient sites are made with the small blades 0.5 and occasionally 0.6 mm in size to minimize movement of the grafts during the early postop period that can result in a direction of hair growth different from what was intended, as well as to reduce crusting and the healing. Working within the surgical markings, any existing hairs can serve as a template for direction of growth (unless that direction is distorted as a result of scarring in the area). It is important that the surgeon understand the aesthetics of natural direction of hair growth because sometimes there are no original hairs.

The direction of growth of eyebrow hairs varies from patient to patient and from one region to another. In general, from medial to lateral, the hairs first grow upward/vertical then quickly become more horizontal as they create a crossed-hatch pattern. The cephalic hairs grow gently downward and the caudal hairs grow gently upward. In the lateral one-third of the eyebrow (the tail), the hairs grow mostly lateral and sometimes slightly downward. The other important consideration for making recipient sites is to have the hairs grow as flat as possible along the surface of the skin so that they don't stick out.

The grafts get transplanted into the recipient sites with jewelers' forceps, a delicate process requiring minimal mechanical trauma to the grafts and keeping them moist. The individual hairs must be rotated so that the curl of the hairs complements the desired aesthetic direction of growth. Any two hair grafts get placed into the central aspect of the brows to maximize density. Most procedures typically require me to go back several times to make additional



Natural-appearing eyebrows can be achieved in patients with curly hair.

recipient sites to maximize density and assure symmetry. The procedure is only completed once the patient approves of the final appearance, helping to achieve the highest patient satisfaction.

EYEBROW TRANSPLANT RECOVERY

For the first 5 days, the eyebrows are kept dry to minimize the chance of the hairs moving or falling out, after which makeup if desired can be used. Antibiotics and analgesics (for the donor site) are provided for the first several days. The tiny crusts usually fall off usually by day 5, leaving in place the transplanted hairs for 1 to 2 more weeks before they fall out.

The transplanted hairs start growing back in 4 to 6 months and require trimming every few weeks. A variety of techniques can be used to "train" any misdirected hairs so that they grow closer to the desired direction, which include the application of some gels and other products. Despite the efforts taken to keep the grafts moist and cool and be handled as gently as possible, regrowth rates of 80% are not uncommon. All patients are advised that a touch-up procedure of additional grafts after 10 months may be desired to achieve greater density.

The cost of an eyebrow transplant ranges from \$4,000 to \$8,000, and requires routine trimming and some grooming, but these costs seem well worth it for patients who can now wake up and go swimming without having to worry about how their eyebrows look. Challenges do exist, but eyebrow patients are among my happiest and most appreciative. ■

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WATCH THE VIDEO

In the PSP Digital Edition, watch three videos of Dr Epstein performing eyebrow procedures:

- Video 1 shows in great detail the making of the recipient sites.
- Video 2 shows the planting of the grafts.
- Video 3 shows the immediate postprocedure result after 600 grafts to the eyebrows.