



Other fillers are awaiting FDA approval, such as polymethylmethacrylate, which is a mixture of miniature plastic spheres and bovine collagen. Once injected into the skin, the collagen holds the synthetic spheres in place. The collagen dissipates, and the spheres remain to plump up the skin and stimulate the body to produce more collagen, which forms around the spheres. Possible side effects of polymethylmethacrylate include long-term or permanent lumps, and temporary swelling and redness, especially when it is used to rejuvenate lips. Patients should consult a dermatologist or dermatologic surgeon who is skilled in the procedure once it is approved, suggests the American Academy of Dermatology (AAD).

Likewise, Crutchfield advises patients to take their time in deciding to undergo procedures, such as polymethylmethacrylate, which make permanent changes to the face. "The way you look today is probably just a little bit different than how you looked five years ago and probably five years from now. If I do something that is customized to the way your face looks right now that's permanent, five years from now it's going to look peculiar," he explains. "For example, some people get permanent eye-liner-type tattoos, and usually in another three to four years, I see a lot of these patients in consultation wanting to know what they can do to get rid of them."

"You really don't want anything that's permanent. Ideally, you want something that will last a couple of years, but we're not quite there yet. Most of the treatments that we have last six to 12 months."

The AAD recommends that patients considering any skin filler treatment ask the following questions:

- Are the results permanent or temporary?
- What are the potential side effects?
- Is the filler approved by the FDA for this particular use?
- How long has the dermatologist used the filler?
- How many patients has the dermatologist treated?
- Are before and after photos available?

Peeling away the layers

To lessen the appearance of fine lines and wrinkles and reveal fresher, smoother skin beneath, dermatologists use several techniques to safely remove layers of skin.

One method, microdermabrasion, involves buffing the face with a special tool to slough away dead skin cells. The technique helps lessen the appearance of fine lines and reduce age spots. Patients may experience mild swelling and redness for up to two days following the procedure.

Microdermabrasion affects only the top layer of skin, and works best when used in conjunction with other procedures. "We use it as an adjunctive measure or as an exfoliant, so that when I do chemical peels and things like that, the medicines don't have to penetrate through a lot of dead skin," Crutchfield says.

Chemical peels delve deeper into the skin, offering more dramatic results than microdermabrasion. Peels consist of the application of a chemical solution to the skin, which causes the aged or damaged skin to peel off—much like a sunburn—revealing a fresh, new layer underneath. The solution can be applied in different concentrations, depending on how many layers of skin a patient wants to remove.

For some patients, three visits are enough to remove fine wrinkles, lines, and acne scars. Peels cannot remove deep scars. Chemical peels may be painful, and depending on how deep they penetrate, they can require up to a week's worth of recovery time. Patients who are sensitive to pain are given an antibiotic ointment following the peel to minimize the discomfort and should avoid overexposure to the sun to prevent damage while the new skin is susceptible to injury.

Prices for mild peels start at \$100, while procedures treating severely damaged skin cost several thousands of dollars.

Less is more

Some patients opt to combine multiple cosmetic procedures. "If you've got little wrinkles around your eyes that are caused by muscle action, then somebody will inject Botox there," says Dr. Jan Adams, a plastic surgeon in Beverly Hills. "In the crease where your nose and cheek come together, they'll put in a filler, such as collagen. A lot of people, rather than getting facelifts, are opting to get multiple kinds of procedures done to address specific problems."

"People are always looking for less-invasive ways to accomplish a goal. One of the reasons these things have increased in popularity is price. They're cheaper. The second idea is that the downtime is less, so people can get back to doing whatever it is that they do, and that's also attractive."

This convenience makes it possible for patients to keep receiving treatments a secret from friends and coworkers, in order to avoid any social stigmas associated with undergoing cosmetic procedures. "I tell my patients I don't want people to look at you and know you had some thing done. I want them to look at you and say, 'Wow, you look great. Did you get a haircut?' " Crutchfield says. "If other people can tell you had something done, you've gone overboard."

Techniques on the horizon

A new, but controversial technique that helps reduce fat and cellulite without the use of surgery is a procedure called "mesotherapy." Used in France for more than 50 years, mesotherapy is now available to doctors in the United States. The technique involves injecting small amounts of medication, vitamins, and supplements into the fat and connective tissue that compose the middle layer of skin, or mesoderm.

French physician and inventor Michael Pistor discovered that when small amounts of medications are injected into the mesoderm, blood flow increases to the treated area, dissolving excess fat deposits. It also improves lymphatic drainage and removes the hardened connective tissues.

Mesotherapy may work as an alternative to liposuction, a surgical procedure in which excess fatty tissue is removed from specific areas, such as the abdomen, hips, and buttocks, by means of suction. Because it is non-surgical, mesotherapy requires no anesthesia. The injections cause slight discomfort, similar to the pain experienced from the waxing procedure used to remove hair. Mesotherapy requires at least three sessions—with up to 15 doctor visits for more serious treatments. The cost ranges from \$200 to \$600.

Questions and answers

The AAD recommends that patients ask the following questions before they decide if a cosmetic surgery procedure and the doctor are right for them:

- **What are the doctor's credentials? Is he/ she a board-certified dermatologist?**

The education and training for dermatologists involves at least four years of postgraduate residency training in a program accredited by the Accreditation Council for Graduate Medical Education. The first year involves a broad-based, clinical emphasis that is similar to that of all medical specialties. This year is followed by three years of intensive training in dermatology including dermatopathology and dermatologic surgery. Beyond this, dermatologists engage in continuing medical education (CME) throughout their careers (in fact, almost every state requires a minimum number of CME hours per year for relicensure).

- **How many of these cosmetic dermatology procedures has the physician performed?**

Dermatologists have, in fact, developed many of the advances in cosmetic dermatology. For example, procedures such as hair transplants, dermabrasion, and chemical peels were dermatologic innovations. Dermatologists were also quick to appreciate the power and utility of the laser and developed most of the cosmetic laser procedures including its use in tattoo removal and skin resurfacing.

- **What results can be expected? How long is the recuperation period?**

With any cosmetic procedure, the results achieved largely depend not only on the skill and experience of the physician, but also on the patient's age, general health, overall skin texture, healing capacity, and the specific skin problem. A patient's realistic expectations also help contribute to a positive outcome.

- **What are the risks?**

The risks involved in most cosmetic dermatological procedures are minimal. However, there are inherent risks associated with many types of medical procedures, and these should be discussed with your physician.

- **Where is the cosmetic procedure usually performed?**

Because most cosmetic dermatologic procedures do not require general anesthesia, cosmetic procedures are most often effectively and efficiently performed safely in the dermatologist's office.

- **What is the cost?**

As with any medical procedure, the cost will vary depending on the nature of the treatment. It is important that you ask up front how much the procedure will cost and how payment is required. When you seek skin rejuvenation, you have some goals in mind as to what skin rejuvenation should accomplish. You need to share those goals with your dermatologist and make the dermatologist your partner in achieving them.

Charles E. Crutchfield III, MD. is a nationally recognized Board Certified Dermatologist and Clinical Associate Professor of Dermatology at the University of Minnesota Medical School. He is a graduate of the Mayo Clinic Medical School. Dr. Crutchfield has been recognized as one of the "Best Doctors in America", an honor bestowed on only 4% of all practicing physicians. He has been selected, annually, as a "Top Doctor" by Minneapolis St. Paul Magazine and was recently named as "One of the 5 Top Dermatologists for Women in Minnesota", by Minnesota Monthly magazine. For more information and to view before and after photographs, please visit www.CrutchfieldDermatology.com.



MEDICAL GUIDE

COSMETIC DERMATOLOGY: EVERYTHING YOU NEED TO KNOW TO AGE GRACEFULLY
SPECIAL SECTION: TOP DOCS

Deep Skin

New technologies are changing the face of cosmetic dermatology

During the 16th century, Spanish explorer Juan Ponce de Leon went on a journey in search for the answer to the age-old question of how to stop the inevitable aging process. Although he was unable to find the fountain of youth, the field of cosmetic dermatology promises new means for us to extend our youthful appearance.



Cosmetic dermatologists use a number of innovative techniques to treat stubborn fine lines and wrinkles, effectively turning back the clock. Best of all, the procedures can be performed without surgery and in a single afternoon, often allowing patients to return to work the next day. For these reasons, non-surgical cosmetic procedures are increasing in popularity. The American Society for Aesthetic Plastic Surgery (ASAPS) reported a 51 percent increase in non-surgical cosmetic procedures in 2004, compared to 2003. Among the most-requested non-surgical cosmetic procedures are Botox, fillers such as collagen, and chemical peels.

Our facial muscles age us

The facial muscles used for smiling, frowning, squinting, and laughing eventually leave creases where they expand and contract. As we age, these lines become more noticeable. Cosmetic dermatologists use a compound called botulinum toxin—commonly referred to by its brand name, Botox—to treat these wrinkles.

Doctors discovered the cosmetic benefits of Botox in the early 1990s. At first, patients were concerned about the product's safety, because the botulinum toxin is related to botulin—a toxin that can sometimes induce fatal food poisoning. "People used to be afraid, but they realize now that it's very safe," says Dr. Charles Crutchfield III, from Crutchfield Dermatology in Eagan, Minnesota. "There has never been one adverse event or fatality."

Cosmetic dermatologists ensure patients' safety by using a diluted concentration of the toxin for procedures. "With the amount that's in one vial of what we use to treat patients, you would need 300 vials to cause any problems," Crutchfield says.

The substance is injected directly into the muscles that cause wrinkles in order to relax them, softening frown lines, furrows, and crow's feet. The procedure is performed in one office visit, and patients can immediately return to work.

However, the results are temporary. Patients need to return to their doctor every four to six months to maintain their younger-looking appearance. "Once you achieve the look you want, then you maintain it," Crutchfield says. "Some patients say, 'I have to redo this every six months?' Well how often do you have your hair color touched up or your nails redone?"

Compared to a surgical facelift—which may cost thousands of dollars and require significant healing time—Botox is relatively convenient and inexpensive. For example, treating a single area, such as the forehead, costs \$300 to \$400.

Because of its ease and effectiveness, Botox is becoming increasingly popular. According to the ASAPS, more than 2.8 million Botox injection procedures were performed in the United States in 2004. "The operative phrase is 'less is more,'" Crutchfield says. "Botox is probably the number one non-surgical procedure in the United States today."

Search for the perfect filler

Cosmetic dermatologists use other treatments to repair aged or damaged skin on the rest of the face. One method is to make the skin plumper by injecting materials, such as collagen, underneath the surface.

Collagen is a natural substance that is already present in the skin and promotes elasticity. Another natural substance called "hyaluronic acid" is also a crucial component of human skin. As we age, the body produces less collagen and hyaluronic acid, causing the skin to become wrinkled. Replacing these substances restores the skin's volume, thus smoothing out wrinkles.

The collagen used for cosmetic procedures is usually derived from cows, and has been in use since the 1970s. The results from bovine collagen are short-lived, because the body naturally dissolves the foreign substance in only a few months. Many patients also develop allergic reactions to bovine collagen.

In search of a better alternative, many dermatologists are switching to human bioengineered collagen, or they're using hyaluronic acid to safely replace the other component found in skin.

Recently approved by the FDA, hyaluronic acid works by connecting the natural collagen and another compound in the skin called elastin to create a framework under the skin. This framework then absorbs water and builds volume, which fills in the wrinkles. The effects of hyaluronic acid last longer than collagen, without posing the risk of an allergic reaction. However, hyaluronic acid gel does not contain any anesthetic to numb the pain of the injections. As with collagen, there is usually temporary inflammation following the injection. Hyaluronic injections cost \$500 to \$1,000. Collagen tends to cost a bit less, starting at \$400.