



# Stop Grays with a Pill! Melt Fat with a Laser! (And Other Possibilities By 2020)

Oprah.com



Ten years ago, we were just starting to hear buzz about Botox. Lasers seemed totally sci-fi. And you probably didn't think you'd soon be using clear plastic strips to bleach your teeth at home. So what innovations will the next decade bring? Will you be tightening your skin with a wand? Not quite. But you may be erasing lines with a topical gel, or slimming your love handles in one

afternoon, without a single incision. We canvassed dermatologists, plastic surgeons, dentists, and chemists about what's ahead, and found that the future is looking bright—and very beautiful.

## More Effective Sun Protection

The sun does a number on your skin: dark spots, wrinkles...not to mention potential cancers. The best protection against all of this damage is sunscreen. And it will soon be more powerful. In the next several years, the FDA will likely approve a proposal requiring sunscreen bottles to carry an SPF value (which denotes protection only from UVB rays) *and* a designation of its UVA protection level. "The new rules will ensure that sunscreen manufacturers are providing adequate protection from UVA rays," says Steven Wang, MD, director of dermatologic surgery and dermatology at Memorial Sloan-Kettering Cancer Center at Basking Ridge, New Jersey. Once the proposed guidelines go into effect, the FDA will also likely green-light Tinosorb, a sunscreen ingredient that absorbs a wide spectrum of UVA and UVB rays and is currently approved in Europe and South America.

## A Slimmer Waistline, Trimmer Hips—No Surgery Necessary

It sounds too good to be true, but it may soon be a reality: Many dermatologists and plastic surgeons are confident that in the coming years they'll be able to eliminate unwanted fat painlessly, without the invasiveness and risks of liposuction. One new technology uses high-intensity focused ultrasound waves to penetrate the skin and break up the fat cells that lie about three-quarters of an inch beneath the surface. Once these cells are destroyed, they are eliminated from the body (some are metabolized as calories and the rest are processed through the liver as waste, along with normal dietary fats). A machine that has harnessed this technology, UltraShape, is currently cleared for use in 57 countries, and its manufacturer is pursuing FDA approval. The UltraShape treatments are said to be relatively painless—"just a slight tingly sensation," says Canadian dermatologist Mark Lupin, MD. Three treatments, spaced two weeks apart, are usually required, with noticeable results seen within a month after each. "On average, patients ultimately see about a two-inch reduction in circumference in the treated area," Lupin says. "And we've seen as much as three inches."

Another new body-contouring option is Zeltiq, a machine that uses intense cold to destroy fat cells (which are more vulnerable to freezing temperatures than surrounding tissue). Like the ultrasound treatment, Zeltiq requires no needles, incisions, anesthesia, or recovery time. It's already FDA approved to cool the skin during other dermatologic procedures, and some doctors are starting to use it off-label to reduce fat. "These technologies are still in the early stages, but they will be perfected over the next decade and we will finally have the ability to eliminate fat without surgery," says Sadick. Big caveat: UltraShape and Zeltiq are not designed to remove large volumes of fat; doctors stress that the machines are most effective on areas of "localized fat," like love handles or back bulges.

### **Prettier Skin, Without a Doctor's Visit**

The past year has given us some effective at-home laser hair-removal options (we've seen impressive results from the Silk'n SensEpil, \$499, and the Tria Laser Hair Removal System, \$595)—but hair-free legs are just the beginning. "In the not too distant future, lasers and intense pulsed light machines that remove pigment, soften lines, and treat acne will be sitting on bathroom counters next to our toothbrushes," says Tina Alster, MD, clinical professor of dermatology at Georgetown University Medical Center in Washington, D.C. First up: An at-home skin-resurfacing laser will be available for purchase in doctors' offices next year. The device pinpoints small areas of skin with every treatment to gradually improve discoloration and fine lines.

### **Custom-tailored collagen (with no danger of allergies) Fuller, Firmer Skin**

In 2020 dermatologists probably won't be plumping up fine lines with the injectable hyaluronic acid gels they use today. A few doctors are already using a patient's own blood to create a protein-rich solution that is injected into the skin to fill wrinkles and stimulate collagen production. It's just a hint of what's to come: "In a few years, we'll actually be able to use a patient's own skin tissue as the basis for a custom-tailored filler that will ideally last longer—with no possibility of allergy or rejection," says Ranella Hirsch, MD, assistant clinical professor of dermatology at Boston University School of Medicine.

### **Fewer Grays, No Dye**

Researchers are in hot pursuit of a "cure" for gray hair—and they're getting closer. A study published last year showed that gray is caused by hydrogen peroxide and other cell-damaging molecules that build up as we age, bleaching color from the hair. The absence of an enzyme called catalase allows these molecules to accumulate, but EXT Life Sciences, a Michigan-based biotechnology company, believes it has found a chemical compound that can restore catalase and thus return hair to its original color. The company is working to incorporate the ingredient into leave-in conditioners and serums, says cofounder Stanley Terlecky, PhD, professor of pharmacology at Wayne State University School of Medicine. And across the Atlantic, L'Oréal's Paris-based hair biology research group recently identified a pair of genes that may determine the longevity of the cells that give hair its color. L'Oréal scientists are hard at work developing a treatment (either a pill or a topical formula) to block the progressive decline in these color-giving cells and stop—or at least slow—the graying process, says group director Bruno Bernard, PhD.

### **The Beauty of Stem Cells**

A stem cell is an exquisitely blank slate—it has the potential to become a nerve, a muscle, a retina. Or...breast tissue, a hair follicle, elastin. Now that researchers are beginning to tap into these cells' programmable potential—to treat cancer, paralysis, cardiac disease (see page 152 for more on the cells' promise in rebuilding damaged hearts)—the science will inevitably make its way into the cosmetics industry. (Remember, Botox was first developed to treat muscle spasms of the eye, and the hyaluronic acid in facial fillers was used for lubricating joints.) Stem cells could potentially create new collagen, grow new hair, and restore skin color in people with pigmentation disorders, says David Goldberg, MD, director of laser research at Mount Sinai School of Medicine. Stunning prospects, aren't they?

No more needles—Botox will become a topical gel **Thicker Hair**

There are currently several over-the-counter handheld lasers marketed for hair growth (one, the HairMax, is FDA approved). But scientists are working on more powerful ways to thicken hair with light. "Soon you may be able to go to the dermatologist and sit under a hood of red-light-emitting diodes that boost hair growth," says Neil Sadick, MD, clinical associate professor of dermatology at New York Presbyterian Hospital–Weill Cornell Medical Center. "The lights increase blood flow to stimulate the follicles."

Hair transplants will also evolve. Today's versions require surgically removing hair from an area of the scalp where growth is dense and transferring it to thinning patches—a technique that's often not feasible for women, who usually experience all-over thinning. In the next decade, however, doctors hope to be able to take just one hair follicle and use it to grow your hair in a lab. That hair could then be used to fill out thinning areas—without compromising thickness elsewhere.

### **A Smoother Brow—Minus the Needles**

Doctors will soon be able to rub out fine lines—literally. A new gel that contains botulinum toxin type A penetrates the skin topically to smooth wrinkles. The gel is applied, left on for 30 minutes, then wiped off. "As with injectable Botox, you'll notice lines smoothing after a few days; results last at least three months," says Fredric Brandt, MD, who has conducted early studies on the product. Revance Therapeutics, the biopharmaceutical company behind the drug, hopes it will be FDA approved for use on crow's-feet (it could then be applied "off-label" to other areas of the face) and available in doctors' offices by early 2013.

### **A Brighter Smile, Faster**

"In ten years, I think in-office teeth-whitening will take five to ten minutes, not 45," says Jeff Golub-Evans, DDS. Peroxide will remain the active ingredient in the process, but chemical systems now in development will help it penetrate more quickly. This advance should make at-home teeth-whitening faster, too. And if your teeth are crooked, gapped, or badly stained, getting veneers should be a far simpler process within the next five years, say Marc Lowenberg, DDS. Using camera imaging, dentists will be able to make porcelain veneers right in their offices—and they'll be so thin, they'll require hardly any filing of the natural tooth. Plus, since the veneers will be produced by machine—not by hand as they are now—they'll cost about half as much (\$500 to \$1,250 per tooth).

Beauty tips that work *right now* from *O Magazine*