

# Pentagon Push Gives Face Transplants a Major Lift

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It's one of the most extreme surgical procedures an individual could possibly undergo: Having his or her entire face, from bone to blood vessels to muscle, reconstructed using the donated face of another person.

Face transplants are already a reality. And now, those incredible procedures are poised to become much more common, largely thanks to a Pentagon research push that's catalyzed a major new [Face Transplantation Program](#) at the University of California, Los Angeles (UCLA). Since 2008, the military has spent upward of \$250 million on research into cutting-edge procedures, including face transplants and regenerative medicine, meant to more effectively treat wounded veterans.

UCLA's new program, which is expected to perform its first transplantation within the year, is particularly geared toward injured veterans (though civilians will also qualify). It's one part of a larger UCLA collaboration with the military's Brooke Army Medical Center, called [Operation Mend](#), that applies avant garde surgical procedures — including hand transplants and prosthetic ears — to help soldiers with missing limbs or ravaged body parts.

“Some servicemembers, unfortunately, have wounds we can't heal using conventional medicine,” Dr. Kodi Azari, chief of reconstructive transplantation at UCLA and the head of this new program, tells Danger Room. “Techniques to help with devastating facial injuries do exist. They just aren't very good.”

Right now, those techniques are essentially limited to extensive and ongoing cosmetic surgeries. Patients often receive skin grafts, wherein surgeons take skin from a patient's back or butt to reconstruct damaged areas of the face. But patients require dozens of procedures, and results tend to be mediocre at best. Mobility and sensation, in particular, often remain permanently hindered.

Face transplants are vastly different. Surgeons start by removing damaged parts of a patient's face, and then replace them with parts harvested from a donor. Typically, that means new skin, fat, muscles, tendons and even bones. The procedure, which can exceed 24 hours, also involves painstakingly attaching nerves and blood vessels from the donor's face to the patient's. With time and rehabilitation, patients will ideally experience sensations and mobility on par with those of an organic, uninjured face.

Those transplants represent a game-changer for the [estimated 200](#) soldiers who've come home from Iraq and Afghanistan with severe facial injuries — typically described as a loss of more than 25 percent of one's face, among other criteria. So far, only five face transplants have been performed in the United States. None of them have been performed on veterans with war-related injuries.

The extent of the transplant means that it can be exceedingly difficult to find the right donor for a given patient. "We need to match them for age, blood type, skin type, gender," Dr. Azari says. "A patient can be ready and willing, but it might be years before a donor comes along."

The procedure carries lifelong implications. Patients require years of rehabilitative therapy to finesse facial movements like chewing and swallowing, along with immuno-suppressing drugs to prevent rejection of the foreign tissue. Then there are the psychological considerations: Patients need to adjust to a new set of facial characteristics — often a hybrid of their former face and their donor's — which is inevitably a weighty toll.

"Finding the right donor is challenge, but the right candidate is another," Dr. Azari says. "Being psychologically ready for this surgery, and what it means afterwards, can be a lot for someone to grasp."

UCLA's program, which will follow patients for five years post-surgery and incorporate physical rehab and psychological counseling, is designed to finesse the complex procedure into one that can be ushered into clinical practice across the country. Right now, the program is relying on philanthropic donations (including \$11 million raised by [Dr. Ronald Katz](#), a UCLA Medical Center board member) to fund the procedures, which are each expected to cost around \$600,000. Another, [Pentagon-funded program](#) at Brigham and Women's Hospital in Boston, is already two years, and four face transplants, into a clinical trial meant to do the same.

But while the ins and outs of facial transplantation are advancing at a rapid pace, Dr. Azari worries that some of the administrative groundwork necessary for widespread face transplants is still lagging. Namely, there's no national database that can match patients with potential donors — like those that already exist for organ transplants.

"This is such a new field, we don't have a streamlined way to find donors," he says. "We'd like to push to see that happen, because it's an important part of accelerating the pace of these procedures."