

Home

All Stories

Top Stories

People

Voices

Around Campus

Faculty Bulletin Board

Archives

Contact Info

## Quick Links

The BHiP Bloggers

Faculty Resources

Human Resources News

UCOP at Your Service

UCLA Sports

UCLA Health Care

UCLA on YouTube

UCLA on Facebook

UCLA on iTunes U

UCLA Today → All Stories

Share:             

Jul 28, 2010 - By Alison Hewitt

 Print this Page  Mail this Page

## Hand transplant program to offer life-altering surgery

Since hand transplantation became feasible in 1998, there have only been nine hand transplant patients in the United States, and Dr. Kodi Azari worked on five of them. The remarkable moment for him comes not during the surgery, but the instant when the patient stops talking about "the hand."

"Something happens down the line as the nerves regenerate, and they start getting sensation in the transplanted hand," Azari said. "They start calling it 'my hand.'"

Azari recently began working at UCLA as surgical director of the new [UCLA Hand Transplantation Program](#). He's eager to help more people who have lost one or both hands in accidents, war and other traumas. This week marks the start of the program — the only one on the West Coast and one of only four in the country.

Dr. Sue McDiarmid, the medical director of the program, has been interested in offering hand transplants at UCLA for years.

"We've been a major transplant center for more than 25 years, and this is a new frontier in transplantation that we thought we should really explore," said McDiarmid, who specializes in transplant medicine and is medical director of the pediatric liver transplant program at the David Geffen School of Medicine.

"We have so much expertise here in the surgical techniques and in transplant medicine. We've brought the two sides together and formed a fantastic team," McDiarmid continued. The program will make a natural addition to UCLA's role in [Operation Mend](#), which provides reconstructive surgery to maimed soldiers. "We want to offer this to anyone who had the tragedy of losing one or both hands, and with two wars on now, the need for our servicemen and women is there."

### Matching blood types and hand 'personalities'

In some ways, hand transplants are more difficult than organ transplants, Azari and McDiarmid said. After all, no one sees your liver or heart, but hands have to match more than just a person's blood type. Hands are matched by skin tone, size and other physical characteristics. It's not quite medically required, but it's more than an aesthetic hang-up, McDiarmid explained: It's about helping the patient get through a year or more of physical therapy before they can even feel the hand, and the lifetime of anti-rejection medicine.

"Your hands are such a visible part of your identity," McDiarmid said. "You see them in front of you; you touch your loved ones with them. Suppose your hand looked way too big or too small, or if a woman had a man's hand, or if it were the wrong color. You'd think, 'This isn't really part of me,' and psychologically reject it. That makes it harder to get through the rehab and the medicine."

Surgically it's also a challenge, McDiarmid said. "You need a really skilled surgeon like Dr. Azari."



Dr. Azari performing hand surgery at UCLA.

 Sign Up for UCLA Today Headlines by E-mail

 Sign Up for Our RSS

 Contribute News Tips

## UCLA Today

Bird flu findings fly in face of assumptions

Verbatim – online degrees, sports social media, economic forecast, gift giving and parking

Turning a new page on book art

> [View All Stories](#)

## UCLA Newsroom

Disparities in cardiovascular risk based more on socioeconomic status than race, ethnicity

Obituary: Economist and emeritus professor Earl Thompson, 71

UCLA research program gives voice to local high school students

> [Visit UCLA Newsroom](#)



Azari, who is an associate professor in the UCLA Department of Orthopaedic Surgery and the Division of Plastic and Reconstructive surgery, will work with a team to reattach two bones, two arteries, four veins, three nerves and nearly 20 tendons for every hand they transplant.

"It's a very technically demanding operation, and takes eight to 14 hours," he said. "It requires a team of surgeons. We open up the old amputation site and find the original structures. And we use a lot of micro-vascular surgery – done under a microscope – to attach those structures to the new hand."

The hand transplantation team is also sensitive to the needs and feelings of the donors' families, McDiarmid said. The hands will all come from cadaver donors.

"It's one thing to agree to donate your loved one's heart or a kidney, because you don't see it," she said. "But to donate an arm? That's a serious impact on your loved one's body. We're making sure to be careful, aware and sensitive to the feelings of the donor families."

They're planning down to the last detail: if donor families wish it, the transplant staff will provide prosthetics for an open-casket funeral so that nothing will look amiss.

#### **A better quality of life**

UCLA's program won't just offer patients new hands — it's also a chance for doctors to perfect transplantation medicine. Currently, transplant patients must take anti-rejection medication that suppresses their immune systems for life — something UCLA doctors hope to change.

"Patients have struggled with the immunosuppressants," Azari said. "We used to provide transplants to save lives. The difference is that now we'll do it to improve quality of life."

More than that, McDiarmid added, "this is life-enhancing ... Imagine walking around without any hands, unable to hold someone's hand — a child's hand. Psychologically, losing that is every bit as difficult as losing the function."

Previous hand transplant patients have regained full motor control. Among Azari's patients, one returned to a job as a paramedic instructor, and another is apprenticing to become an electrician. But getting a new hand isn't easy, both doctors emphasized.

Depending on how much of the forearm is transplanted, the regenerating nerves can take more than a year to reach the fingers, leaving the patient without feeling during the first year of intensive rehabilitation. That can amount to several hours a day of hand exercises if they hope to regain full function.

Because the transplant procedure is so demanding, UCLA will screen patients to ensure they're up to the challenge.

"We want the person to have spent at least six months wearing a prosthesis, because those risks are almost nil, whereas the risks of a transplant are quite serious," McDiarmid said. "We don't want someone thinking a new hand is a walk in the park."

"They need to have tried a prosthetic and found that unacceptable," Azari elaborated. "Some people conclude, 'Hey, this is my life, the only life I have, and I want more from it than what a prosthetic can provide.'"

Patients must also be 18-60 years old, have no serious infections and have lost a hand due to trauma. Cancer patients who lose a hand run the risk that a lifelong course of anti-rejection medications could create a cancer relapse. Doctors are also reluctant to prescribe the lifelong course of anti-rejection medications to patients born without hands.

Children born without hands "are much better adapted than adults who face hand loss," Azari explained. "These children regain very good function because their brains adapt to it from the start – their feet take over many of the same functions. You've probably seen videos of people who learn to eat, type, drive with their feet. But the adult brain cannot adapt to use the foot as the hand."

The restrictions imposed by the risks of immunosuppressants are part of why it's so important to find an alternative to anti-rejection medicines for hand transplants and all organ transplants, Azari added.

"The goal is to decrease the amount of immunosuppression medicine to a safe level, free of side effects," Azari said. "That's the holy grail. Once that happens, we will have entered a brand new frontier in medicine."

[Home](#) [All Stories](#) [Top Stories](#) [People](#) [Voices](#) [Around Campus](#) [Faculty Bulletin Board](#) [Archives](#)

[Terms of Use](#) [University of California](#) [UCLA Home](#) [Office of Media Relations](#)

© 2010 UC Regents