

Hand-made tale: Indian amputee's new lower limbs adapt to her body

March 12 2020, by Abhaya Srivastava



Shreya Siddanagowder gestures during an interview with AFP at her home in Pune, more than two years after she had both hands transplanted

When amputee Shreya Siddanagowder was offered new hands, the Indian student didn't hesitate—even though they were big, dark and

hairy, and once belonged to a man.

Now though, not only have her new hands become more slender, they have also changed colour to match her [skin tone](#), mystifying the doctors who carried out the rare 13-hour transplant.

"The donor was a tall man with big spindly fingers," Siddanagowder's mother Suma told AFP by phone from their home in Pune in western India.

"Now nobody can make out that they are a man's hands... She has even started wearing jewellery and nail varnish."

Siddanagowder's life was turned upside down in 2016 when, aged 18, she was involved in a bus accident that crushed both her arms.

A delay in getting first aid meant that both her hands had to be amputated below the elbow.

Only 200 successful hand transplants have taken place worldwide—including nine in India—since the first in the United States in 1999 on a man whose left [lower limb](#) had been blown off by a firework.

Search for donor

The first in India was conducted in 2015 at the Amrita Institute of Medical Science (AIMS) in the southern state of Kerala, where Siddanagowder's family took her.



Shreya Siddanagowder had both hands amputated after a bus accident, but had new limbs transplanted

The biggest problem was finding a donor. For cultural reasons, Indian families are often reluctant for the hands of their loved ones to be made available after their death.

"Usually you have to wait for a long time," said Subramania Iyer, a member of a team of doctors who operated on Siddanagowder.

As a result, those seeking a transplant "are so desperate that they don't mind if the hands are from a different gender", Iyer, a specialist in reconstructive surgery, told AFP.

Eventually, the hospital obtained a pair of hands from a man in August 2017. Siddanagowder and her family accepted.

The donor hands were first attached by the bones before the tendons, [blood vessels](#) and skin were painstakingly stitched together.

After the transplant, she had to undergo more than a year of physiotherapy for her body and brain to get used to the new hands and obtain mobility and sensation.



A family picture of Shreya Siddanagowder after her hands transplant surgery

Birthday gift

Iyer said that the colour of Siddanagowder's hands quickly began to show "a lot of change", but that it is difficult to pinpoint why.

"It could be because of MSH.... a brain-controlled hormone that stimulates melanin production. We are wondering if MSH levels can really influence the [skin colour](#)."

Melanin is a natural pigment that gives skin—as well as hair and eyes—their colour.



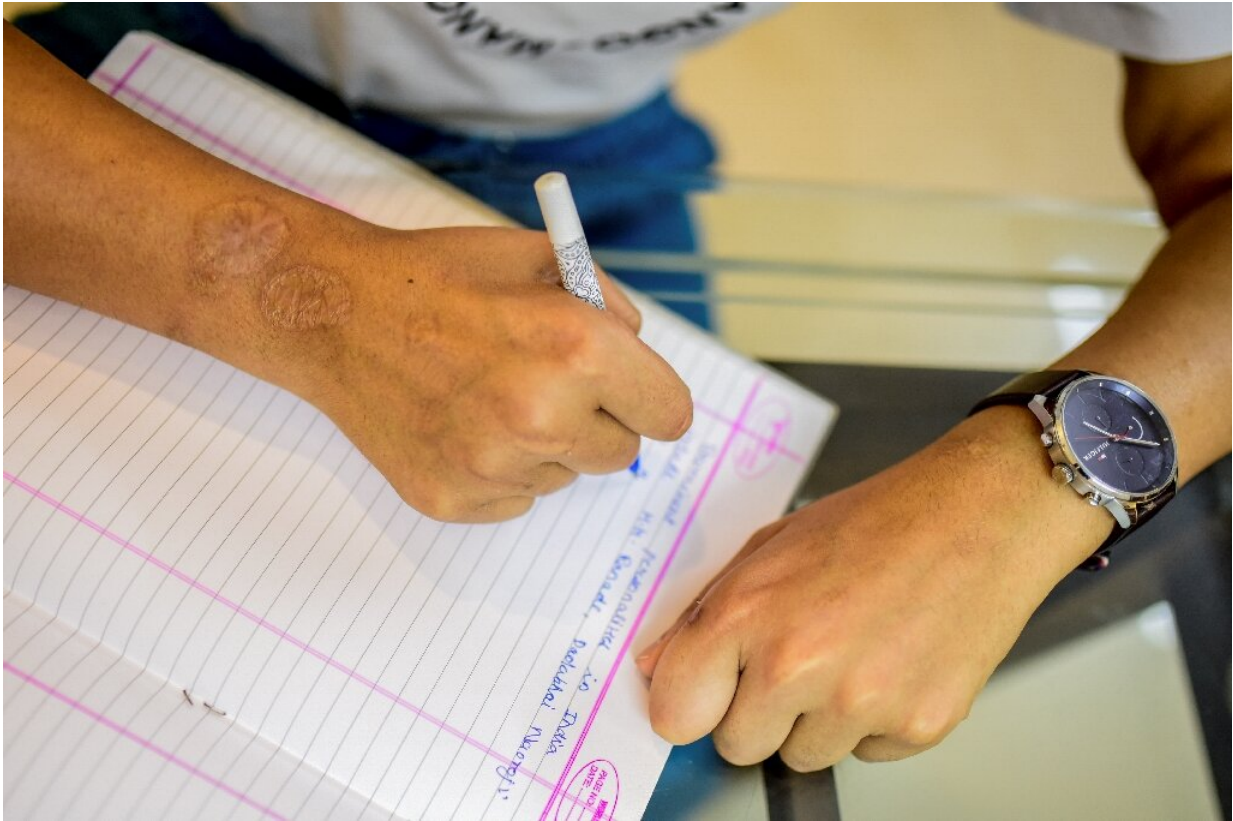
Shreya Siddanagowder has recovered much mobility with her new hands

Dr Shehla Agarwal, a leading dermatologist in New Delhi, said that the absence of testosterone explained why the hands became less hairy, and agreed that other hormonal changes might explain the change in colour.

But she also cited other possible factors.

"The donor male may have been exposed to more sunlight and [physical activity](#) compared to the woman," Agarwal told AFP.

Shreya on her part is loving the transformation—she even wrote her recent college exam with her new hands—and so are her doctors.



Shreya Siddanagowder's new hands came from a male donor and have changed colour and shape since the operation

"We all feel very happy for her," said Iyer.

"The best moment was when she sent me a [hand](#)-written note on my birthday. I could not have asked for a better birthday gift."

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