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Recipient doing well after first artificial windpipe graft

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The word's first artificial windpipe transplant has been such a success that a second operation has been carried out and a third is being planned, The Lancet reported on Thursday.

Andemariam Teklesenbet Beyene, a 36-year-old Eritrean, is doing well after undergoing the ground-breaking operation in Stockholm in June, it said.

Beyene, a post-graduate geology student currently living in Reykjavik, Iceland, had had his trachea removed because of cancer.

It was replaced in a 12-hour operation on June 9 with a synthetic "scaffold" covered with his own stem cells, or precursor cells of windpipe tissue.

"The patient has been doing great for the last four months and has been able to live a normal life," the British journal quoted Tomas Gudbjartsson, a professor at Landspitali University Hospital and University of Iceland in Reykjavik, as saying.

"For the last two months he has been able to focus on his studies and the plan is that he will defend his thesis at the end of this year."

The operation, led by Professor Paolo Macchiarini of Stockholm's Karolinska University Hospital, entailed using 3-D imaging to scan Beyene and then building a glass model of the afflicted section of his

windpipe.

The glass was used to shape the artificial scaffold, which was then seeded with stemcells.

Macchiarini has just carried out his second transplant, on a 30-year-old man from Maryland, United States, who also had cancer of the trachea. The scaffold was made from nanofibres and thus "represents a further advance," the Journal quoted Macchiarini as saying.

His team is now hoping to treat a 13-month-old South Korean infant with the same technique.

"We will continue to improve the regenerative medicine approaches for transplanting the windpipe and extend it to the lungs, heart, and oesophagus," said Macchiarini.

It marks a step forward in regenerative medicine, as the organ is tailor-made to the patient, he said.

In addition, artificial organs do not require the long waiting time that usually happens in human donation.

As the stem cells come from the patient himself, this reduces risk of attack by the immune system, which is the case for donated organs whose rejection has to be combatted by taking powerful immunosuppressive drugs.