Medical Xpress

S.Africa medics use 3-D printer for middle ear transplant

March 14 2019

South African surgeons have successfully performed the world's first transplant of middle-ear bones that uses 3-D printed components, a research university said.

The technique "may be the answer to conductive hearing loss—a middle ear problem caused by congenital birth defects, infection, trauma or metabolic diseases," Pretoria University said in a statement seen Thursday.

The surgery replaced the hammer, anvil and stirrup—the smallest bones in the body which make up the middle ear—with similarly-shaped titanium pieces produced on a 3-D printer.

"3-D technology is allowing us to do things we never thought we could," said University of Pretoria health faculty professor Mashudu Tshifularo.

Tshifularo conducted the surgery on Wednesday on a 35-year-old man at the Steve Biko Academic Hospital in Pretoria.

The patient's middle ear was shattered in a car crash.

"By replacing only the ossicles (bones) that aren't functioning properly, the procedure carries significantly less risk than known prostheses (implants) and their associated surgical procedures," said Tshifularo.

Health Minister Aaron Motsoaledi promised to "do everything in our

power to assist and mobilise resources... for this far-reaching innovation".