

Bionic reconstruction enables mind-controlled prosthetic hands

Bionic hands are go. Three men with serious nerve damage had their hands amputated and replaced by prosthetic ones that they can control with their minds.

The procedure, dubbed “bionic reconstruction”, was carried out by [Oskar Aszmann](#) at the Medical University of Vienna, Austria.

The men had all suffered accidents which damaged the brachial plexus – the bundle of nerve fibres that runs from the spine to the hand. Despite attempted repairs to those nerves, the arm and hand remained paralysed.

Before the operation, Aszmann’s patients had to prepare their bodies and brains. First he transplanted leg muscle into their arms to boost the signal from the remaining nerve fibres. Three months later, after the nerves had grown into the new muscle, the men started training their brains. Finally, Aszmann amputated their hands, and replaced them with a standard prosthesis under the control of the muscle and sensors.

For Aszmann’s patients, that simple, functional prosthetic hand works better than their biological one. After the transplant, all three were able to pick up a ball, pour water from a jug and do up buttons.

[youtube=https://www.youtube.com/watch?v=lgu6ajeiwk&rel=0&w=500]

Read full, original article: [Men have hands amputated and replaced with bionic ones](#)