

## **MEANS TO RESTORE NATURAL MOVEMENT TO THE DISABLED PEOPLE**

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Such daily needs as to drink some water, to open the door, to turn on the light are things that we do by rote, but for those who are no longer capable to move the body it is a real challenge.

Progressive diseases of nervous system can put a healthy person in a wheelchair and result in quadriplegia. These are the consequences of different trauma, car accidents, strokes and heart attacks etc. that can be the reason of paralysis.

Due to the constant development of science and technology, scientists of University of Pittsburgh and its Medical Centre (UPMC) have invented robot arm which is controlled by the paralyzed and computer. The treatment complex for disabled people will include electrical stimulation of nerve endings of spinal cord by means of implant and special course of exercises and massage which will allow patients to feel their muscles and use them. Firstly, scientists fix brainwaves of a healthy person when walking to the brain implant.

After the course of treatment disabled people will get the robot extremity which they will manipulate due to the implant stimulating neurons of spinal cord responsible for motion.

Patients will have a small sensor of a tablet size implanted under the brainpan in the cerebral cortex which will activate when people move. The sensor is a silicon chip with 96 tiny electrodes which are attached to the neuron area. It will send typical signals about imaginary activities through wires to the computer. Computer will record the signals and render them into electronic commands.

The experiments showed that patients learned to manipulate robot arm when they watched scientists moving their hands and imagined themselves moving it.

Thus, the research is the spectacular leap toward greater function and independence for people who are unable to move their own arms.

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