

МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
СУМСЬКИЙ ДЕРЖАВНИЙ УНІВЕРСИТЕТ
КАФЕДРА ІНОЗЕМНИХ МОВ
ЛІНГВІСТИЧНИЙ НАВЧАЛЬНО-МЕТОДИЧНИЙ ЦЕНТР

МАТЕРІАЛИ ІХ МІЖВУЗІВСЬКОЇ
НАУКОВО-ПРАКТИЧНОЇ КОНФЕРЕНЦІЇ
ЛІНГВІСТИЧНОГО НАВЧАЛЬНО-МЕТОДИЧНОГО ЦЕНТРУ
КАФЕДРИ ІНОЗЕМНИХ МОВ

“TO MAKE THE WORLD SMARTER AND SAFER”

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E-DURA IMPLANT

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Researchers from all over the world every day try to find new ways to improve medical equipment, release patients' pain, make life of injured people more comfortable.

A group of researchers from the Ecole Polytechnique Fédérale de Lausanne has developed a solution that will get back on their feet paralyzed people with spinal cord injury.

Researchers have created an implant poses called e-Dura. This device can replace the damaged areas of the spinal cord. The implant is a flexible tape which equipped with electrodes. It is set along the spinal cord. The implant e-Dura is flexible enough to bend with the tissue located next to the spine, and not cause discomfort in the patient.

The relationship between different parts of the spine is lost as a result of injury. The implant is capable to transmit electrical signals between parts of the spine due to the current electrodes and conductive compounds. Also, the device is able to transmit medication. E-Dura implant is made of silicone and coated with gold conductive tracks. They can stretch and bend. The electrodes are made of silicone and platinum microscopic beads, which can also be bent in different directions without disconnection.

Researchers have conducted experiments on paralyzed rats. After surgery to implant e-Dura rats were able to walk again after only a few weeks of training. In the future, the researchers intend to initiate clinical trials with humans. As expected, the implant can remain in the human body to perform its function, and for over 10 years without requiring replacement. The apparatus is so effective, since emits soft tissue around the spine, also known as the dura (dura mater), whereby the implant body does not reject.

Finally, there is a drug-releasing component in the implant. This component is used to reanimate nerve cells.

Though e-dura implant allowed only the rats to run when they had been previously paralyzed, the scientists hope to use it for people in future. They do all necessary researches.