CONFIRM - a step towards improved mobility
Neuromonitoring for spinal cord stimulation implants

In May 2019, a European research consortium consisting of industrial and academic partners (GTX Medical, Lausanne/Eindhoven; inomed, Emmendingen; EPFL, Lausanne; Heidelberg University Hospital) has launched the CONFIRM project aiming at improving the surgical procedure of spinal cord stimulation implants.
Targeted electrical stimulation via a spinal cord implant can restore leg movement in patients with lesions of the spinal cord.

While inomed has already worked on the development of such an implant in the context of the former research project NeuWalk, GTX is developing the worldwide first spinal cord implant for rehabilitation after spinal cord injury. In the next 30 months, the CONFIRM project funded within the Eurostars program will develop a neuromonitoring system, that facilitates optimal intraoperative placement of the stimulation electrodes.

Neuromonitoring for exact placement of spinal cord implants

For targeted stimulation, an electrode must be placed close to the relevant stimulation hot spots of the spinal cord. Exact placement is of great importance, in order to selectively and reliably activate the target structures with the electrical stimulation.

The new intraoperative device will perform verification of the electrode placement by intraoperative test stimulations and assessment of the elicited leg muscle responses depending on the position of the implant. Based on the analysis of these responses, a procedure for automated identification of the best electrode location will be implemented. Additionally, the general functionality of the implant will be confirmed.
Such a system will support the surgeon during implantation in order to achieve the best stimulation results while reducing the implantation time to the minimum. This system can support clinical personnel in the critical setup of the implant system to achieve the best outcome of the therapy.

Neurostimulation as a promising therapy option

Currently more than 480,000 people in in Europe and the USA with spinal cord injuries are permanently wheelchair dependent, with around 24,000 new incidents annually. Targeted stimulation of the neural circuitry of the lumbar spinal cord represents a very promising therapy for functional restoration. It has recently been published, that spinal cord stimulation in conjunction with intensive task-oriented therapies may lead to independent ambulation in patients with incomplete spinal cord lesions (Read more >>).

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Further information: https://www.inomed.com/
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