Spinal cord neurostimulation

Neurostimulation is a treatment that can potentially help improve the quality of life and mobility of patients with high paraplegia. It is an implantable system which, by producing electricity, stimulates the injured spinal nerves. Electricity comes from an implantable generator and is applied to specific areas of the spinal cord via electrodes. The patient can assess the effect of neurostimulation as a test stimulation is performed. It is a completely reversible treatment, meaning the patient can at any time turn off or remove the neurostimulation system without any side effects.

Application of neurostimulation

Neurostimulation therapy is applied in two stages: first the trial stimulation takes place, during which the patient evaluates the effect of the neurostimulation, and then, if the patient chooses, the permanent implantation of the neurostimulation system takes place.

Test stimulation

A thin electrode is placed under anesthesia at an appropriate site and connected to a temporary external stimulator. The goal during experimental neurostimulation is the recording of stimuli through intraoperative neuromonitoring, as well as the effect on phenomena such as spasticity. Then either the system is removed, or the permanent implantation is performed.

Permanent implantation

Depending on the type and complexity of the paraplegia, the attending physician selects the appropriate system for implantation. With anesthesia, a small incision is made in the buttock or elsewhere (eg abdomen) and the stimulator is placed under the skin, which is connected to the electrode. The patient has his own programmer with which he can easily change the settings for optimal performance. It is usually rechargeable, for better performance and long-term use.

Neurostimulation is a minimally invasive method, which has a low rate of complications. Most of these can be avoided by following the guidelines of both the treating physician and the patient.