Vagus Nerve Stimulation without surgery for the treatment of epilepsies
Few treatment options are available for patients who suffer from continued occurrence of seizures, despite appropriate treatment with anticonvulsive drugs: surgery, deep brain stimulation and invasive vagus nerve stimulation (iVNS).1

iVNS has been successfully used for over ten years to treat patients with drug-resistant epilepsy.2,3 Since 2012 the transcutaneous Vagus Nerve Stimulation (t-VNS®) is also available for the treatment of epilepsies. More than 1,000 volunteers and patients already used t-VNS®.

transcutaneous Vagus Nerve Stimulation – a targeted and patient-friendly treatment option

Trancutaneous Vagus Nerve Stimulation (t-VNS®) uses the fact that the auricular branch of the vagus nerve, the so-called ramus auricularis nervi vagi (RANV), supplies the skin of the concha of the human ear.4 This allows for transcutaneous electrical stimulation of the nerve fibres in this area.

The intensity, pulse duration and frequency of the t-VNS® stimulation have been optimised to induce signals in the thick, myelinated Aβ fibres of the RANV, as with iVNS. Like those of the cervical branch of the vagus nerve, these project directly to the nucleus of the solitary tract (NTS).5-6,7 The NTS is the starting point to activate a complex cerebral network, corresponding closely to that targeted by iVNS, and associated with the anticonvulsive effect.2,3,8,9

THE AURICULAR BRANCH OF THE VAGUS NERVE

Results of a trial finished in 2014 show:7

- The central projections of the RANV correspond to the “classical” central vagal projections.
- The central vagal projections may be non-invasively activated via the outer ear.
- Therefore t-VNS® is a targeted treatment option.
t-VNS® – a port of entry into the brain

Advantages of treatment with t-VNS®

- No surgical interventions
- Minor side effects
- Can be used early on as an adjunct to drug therapy
- Test period of 6 months for patients

Trial: t-VNS® for the Treatment of Drug-Resistant Epilepsy

The results of a randomised, controlled, double-blind, two-arm clinical multicenter trial show:10

- Excellent compliance
- t-VNS® was well tolerated for a period of 5 months
- Clear seizure reduction under 25 Hz treatment

NEMOS® - More Autonomy in Everyday Life

t-VNS® for treatment of epilepsies uses the transcutaneous vagus nerve stimulator NEMOS®.

NEMOS® consists of a stimulation unit and a dedicated ear electrode, which patients wear like an earphone, approximately 4 hours per day. Patients adjust the current until they feel a slight tingling sensation at the stimulation site (Aβ fibre activation).

Patients can carry on with their usual everyday activities during stimulation, the treatment can be integrated into patients' daily routine.

Test Period: Patients can test the NEMOS® device for a period of 6 months. If patients do not respond sufficiently to the therapy, they can return the device after 6 months for a partial refund of the purchase price. Further information is available on www.cerbomed.com.
Do you still have questions?
Do not hesitate to contact us.

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The transcutaneous vagus nerve stimulator NEMOS® is CE-certified for treatment of epilepsy.

NEMOS® is not approved for use in the U.S.

Indications, contraindications, warnings, and directions for use of NEMOS® can be found in the manual supplied with each device.

LITERATURE

10. t-VNS in Epilepsy Study Group: Transcutaneous Vagus Nerve Stimulation (t-VNS) in Pharamcoresistant Epilepsy – Results of the Prospective Randomized Double-blind Multi-Center Trial cMPS-E02. Ahead of publication (April 2015).

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