

NEUROLITH®
Transcranial Pulse Stimulation (TPS®)
in Alzheimer's Disease



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TPS® method of action

Destructive protein molecules (so-called plaques) disrupt the function of neurons and cause a reduction of cerebral blood flow. This leads to disruptions of the oxygen and energy supply of the brain. The stimulation of growth factors, primarily VEGF, not only improves cerebral blood flow, but also promotes the formation of new blood vessels (angiogenesis) and nerve regeneration. The release of nitric oxide (NO) leads to direct vasodilation and improved blood circulation.

Study results: TPS® significantly improves brain performance

Since then, more than 1500 treatments have been performed. There are no known side effects. In 2019, the first treatment results were published in the prestigious journal »Advanced Science«.¹ In the pilot study, the CERAD score significantly improved after TPS® treatment. The improvements lasted for 3 months after the completion of the treatment series. A longer lasting therapeutic success can be expected according to current treatment results.

TPS® treatment: effective and safe

TPS® can stimulate deep cerebral regions, reaching as much as 8 cm into the brain. Owing to the short duration of the TPS® stimulation, tissue heating is avoided. The patient is not immobilized during the treatment and able to move freely.

The TPS® advantages:

- Treatment of patients with mild to moderate dementia
- Outpatient treatment (30 minutes/session, 6 treatment sessions in 2 weeks)
- Non-surgical, outpatient treatment through the closed skull
- Painless and without side effects
- Adjuvant cognitive training not required
- No shaving of the scalp, no immobilization of the patient

Documented effectiveness: TPS® treatment has been shown to significantly improve CERAD test performance and to reduce Beck's depression index in patients with mild to moderate dementia.¹

The NEUROLITH® system: ergonomic and precise

The ergonomic shape of the handpiece minimizes hand fatigue to facilitate treatment working directly on the patient and the coupling surface adapts easily to any shape of head. The NEUROLITH® software includes patient management functionalities with retrievable data and recommended treatment parameters.

Advantages of the NEUROLITH® system:

- Focused stimulation of deep cerebral regions up to 8 cm
- 3D infrared camera system for precise cerebral tracking
- Personalized treatment based on MRI/CT data
- Treatment documentation in real time
- CE mark and based on studies



Diagram: improvement over 3 months
TPS® boost: 6 treatment sessions in 2 weeks

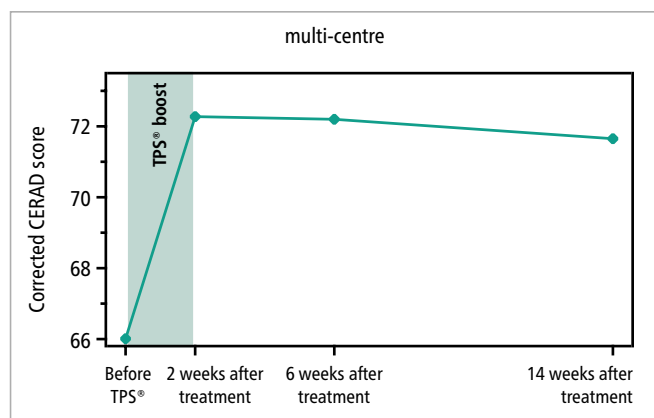
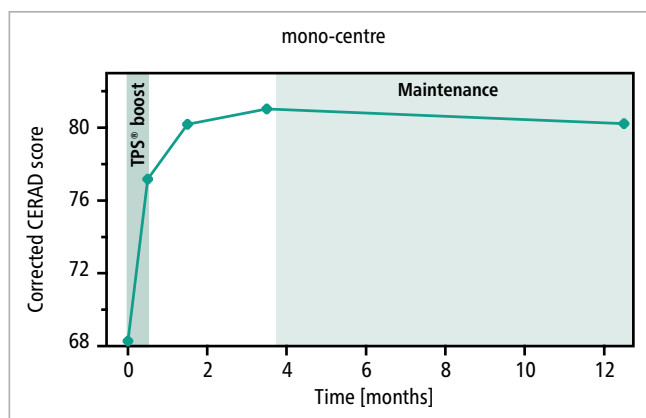


Diagram: improvement over 12 months
TPS® boost: 6 treatment sessions in 2 weeks
Maintenance: 1 treatment every 6 weeks (after 3 months)



The BodyTrack® software: treatment documentation in real time



With the help of magnetic resonance imaging, the doctor creates a precise »map« of the brain. Afterwards, the affected areas can be stimulated in a targeted and safe way, using real-time documentation. Real-time tracking of the handpiece position enables automatic visualization of the treated regions on the monitor.

The advantages of the BodyTrack® software:

- 3D visualization for maximum precision, control and safety
- Use of personalized MRI/CT data
- Coloured visualization of the treatment regions in 3 planes (axial, coronal, sagittal)
- Continuous visualization and documentation of the energy applied and of treatment progress

Literature:

¹Beisteiner, R. et al.: Transcranial Pulse Stimulation with Ultrasound in Alzheimer's Disease – A New Navigated Focal Brain Therapy. Advanced Science, First published: 23 December 2019, DOI: 10.1002/adv.201902583.

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