



Transcranial Pulse Stimulation, TPS reduces significantly the Alzheimer’s Disease Symptoms

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Abstract:

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Low intensity shock waves proofed to be efficient for the treatment of non-unions, tendon and muscular pain, wound healing, heart insufficiency, erectile dysfunction, aesthetic and finally also neurological indications. The working principle is the mechanical stimulation of biological processes called mechanotransduction resulting in increased cell metabolism, release of nitride oxide (NO) and numerous growth factors. There is also an anti-inflammatory effect and the stimulation of stem cells and the innate immune system. There are no significant side effects. Alzheimer’s disease or dementia in general is multi modal disease resulting from different causes like deposition of dedicated proteins (tau, beta-amyloid), inflammation, reduced blood supply and others.

Transcranial Pulse Stimulation was applied to patients suffering from minor Alzheimer’s disease in two centers. 35 patients were treated in this multicenter clinical pilot study. The treatment consisted of 6 sessions in 2 weeks, with 6000 pulses per session, energy flux density of 0.2 mJ/mm² at 5Hz. It was performed with an unshaved head through the hair. The treatment is painless and very well tolerated by the patients. The patients showed a significant improvement of the Alzheimer’s disease symptoms of up to 20% measured with CERAD Plus battery of tests. No side effects have been observed. The device has meanwhile the CE mark clearance in Europe and there are regulatory activities in further regions. Further clinical evaluation with placebo controlled, randomized trials are ongoing.

Biography:

- 1974 and 1980: Dipl.Ing. and Dr.-Ing. in Electrical Engineering and degree in Biomedical Engineering, Mu-



nich Technical University, Germany.

- 1974–1985: Fraunhofer Institute for Solid State Technology, Munich. Applied research and development in the area of biomedical engineering.
- 1985–1990: Dornier Medizintechnik GmbH, Germering, Germany, Department Head of Electronics Development.
- 1990–2003: Storz Endoskop Produktions GmbH, Schaffhausen, Switzerland, Head of Development and Production.

Recent Publications:

1. Pavel Novak, Journal of Cosmetic and Laser Therapy, 2013
2. Pavel Novak, Journal of Cosmetic and Laser Therapy, 2011
3. Pavel Novak Journal of Cosmetic and Laser Therapy, 2010
4. Pavel Novak, Aesthetic surgery journal / the American Society for Aesthetic Plastic surgery, 2008
5. Pavel Novak, Minimally Invasive Therapy & Allied Technologies, 1997

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