

Transauricular Vagal Nerve Stimulation (taVNStVNS) in ASD Reducing Deficits

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Abstract

The Autism Spectrum Disorders (ASD) are a heterogeneous group of developmental disorders, with clinical appearance in few major neurological and general paediatric deficits. Last decade few neuromodulation approaches demonstrated ability to reduce such deficits. Those are non-invasive brain stimulation (NIBS) methods, namely transcranial direct current stimulation (tDCS) and transcranial magnetic stimulation (TMS). Although the "Doctrine" is a clinical institution that does not have a proper scientific resource, and no "gold standard" research has been conducted, nevertheless, a large data array has been collected, analysed and results implemented into routine therapeutic work. More than 350 000 procedures were supervised in the clinics of Prognoz Group (Doctrine and Prognoz) for last 15 years. While tDCS using direct current exclusively, the use of other types of current reported to be effective in stimulation. Likewise, Trans auricular Vagal nerve stimulation (taVNS) uses pulse current for stimulating autonomic pathways by means of an ear-clip electrode. Vagal nerve stimulation is FDA-approved treatment for epilepsy and depression. Since 2016 we were using mass-market device for taVNS. Retrospectively, major positive effect on eating behaviour were observed. In March 2022 we adapted a clinical device for stimulation. We have synthesized taVNS protocol starting from scientific search and further combining parameters from reports of maximal effectiveness in each. This approach showed up as successful one. Clinical trial was conducted - 807 procedures in 70 personal cases were supervised. Doctors found positive behavioural changes in up to 85% cases, which is the brightest positive achievement. By December 2022 more than 6000 procedures were supervised. Reduction of deficits and general positive influence are observed in same percentiles.