Neuromodulation & Autism

TMS, tDCS and what is being sold alongside them. The evidence base is weak and the framing is the pathology paradigm.

> Reach for it when a clinic or an advertisement offers a treatment and you have an appointment on Thursday.

Neuromodulation treatments for Autistic people are *not neuroaffirming*.

TMS, tDCS, and other neuromodulation approaches are being marketed to Autistic people and their families. The evidence base is weak. The ethical framework is rooted in the pathology paradigm. Autistic people deserve to know.

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What neuromodulation is — and what it's being sold as.

- Neuromodulation uses magnetic or electrical fields to stimulate specific brain regions. TMS (Transcranial Magnetic Stimulation) and tDCS (Transcranial Direct Current Stimulation) are the most common non-invasive forms currently marketed for autism.
- TMS uses a magnetic coil placed on the scalp to send repetitive pulses to targeted brain areas. A standard course is 30 sessions, typically daily across 4–6 weeks.

- These treatments are being marketed directly to families of Autistic children — often at significant financial cost — with language suggesting they reduce "core autism symptoms."
- The phrase "core autism symptoms" is a red flag. It signals that the treatment is targeting Autistic neurology itself, not a co-occurring condition like depression or epilepsy.
- TMS does have an established evidence base — for depression and OCD. Its use specifically for autism is a different and far more contested matter.

The evidence base is weak and inconsistent.

- "TMS efficacy in ASD exhibits marked heterogeneity, primarily due to the lack of robust scientific theoretical support for existing therapeutic approaches — this severely hinders the standardisation of TMS in ASD clinical practice." (Journal of Translational Medicine, 2026) (https://link.springer.com/article/10.1186/s12967-026-07754-6)
- At present, it is most accurate to conclude that neuromodulation "cannot be recommended as an evidence-based treatment" for autism. Researchers call for standardised protocols, randomised controlled trials, and agreed outcome measures before it can be clinically recommended. (Advances in Neurodevelopmental Disorders, 2023) (https://link.springer.com/article/10.1007/s41252-023-00364-z)
- A 2014 consensus conference — funded in part by Autism Speaks and a TMS manufacturer — concluded that TMS research in autism lacked reliable biomarkers, standardised protocols, or conclusive therapeutic findings. (Frontiers in Human Neuroscience, 2015) (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4295436/)
- Studies have reported temporary reductions in some behaviours — but long-term outcomes remain unknown, and some families have reported significant distress when effects reversed after treatment ended.
- The studies that do exist use small sample sizes, inconsistent outcome measures, and rarely include the perspectives of Autistic participants themselves.

> “Development of novel treatment strategies for ASD will require efforts for better clinical characterisation, identification of more homogeneous subgroups, and improved understanding of underlying pathophysiology."
>
> — TMS Therapy for Autism Consensus Conference, 2014

Neuromodulation treats autism as a problem to be fixed.

- Some researchers have explicitly stated the goal is to "shift focus to interventions that target core pathologies of autism" — framing Autistic neurology itself as pathological. (Autism Research Institute, 2021) (https://autism.org/tms-asd-2021/)

- The neurodiversity paradigm understands Autistic neurology as a natural human variation — not a disorder to be corrected. Interventions that target Autistic cognition directly are incompatible with this framework. (Walker, 2021) (https://neuroqueer.com/wp-content/uploads/2021/07/Walker-2021-Toward-a-neuroqueer-future.pdf)
- "Neurodiversity-informed intervention opposes any attempt to cure or normalise Autistic children... there are still many interventions purporting an explicit or implicit curative or normative agenda." (Leadbitter et al., 2021, Frontiers in Psychology) (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8075160/)
- The outcome measures used in TMS research are "strongly focused on the reduction of autism symptoms" — a normalisation agenda that targets things like social behaviour and sensory responses that many Autistic people understand as core parts of who they are. (Leadbitter et al., 2021) (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8075160/)
- Many of these target variables — reducing sensory behaviours, imposing neurotypical social patterns — "are incompatible with a balanced view of neurodiversity." (Leadbitter et al., 2021) (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8075160/)
- The Autistic Self Advocacy Network is clear: "We shouldn't try to cure or get rid of autism. Autistic people should be allowed to exist." (ASAN) (https://autisticadvocacy.org/about-asan/what-we-believe/)

Normalisation causes harm.

- Interventions focused on normalising Autistic people — changing how they think, communicate, and move through the world — are not neutral. They communicate that Autistic people are not acceptable as they are.
- Chapman and Botha (2023) argue that the ethics of intervention must focus on neurodivergent flourishing — not normalisation. This is a fundamentally different goal. (Developmental Medicine & Child Neurology, 2023) (https://onlinelibrary.wiley.com/doi/10.1111/dmcn.15384)
- Epistemic injustice — the systematic dismissal of Autistic people's knowledge of their own experience — limits our capacity to understand what Autistic thriving actually looks like. (Chapman, 2022, Journal of Social Philosophy) (https://onlinelibrary.wiley.com/doi/10.1111/josp.12456)
- Research consistently shows that having a positive Autistic identity protects against mental health problems. Interventions that pathologise Autistic traits actively undermine that identity.
- Sensory behaviours targeted in some neuromodulation studies often serve as coping and regulation strategies. Reducing them does not reduce distress — it removes the tools people use to manage it.
- The procedure itself is not sensory-neutral. For many Autistic people, the tactile, auditory, and positional demands of TMS sessions — stillness, head contact, loud clicking — are themselves distressing and not accounted for in standard protocols.

Note on co-occurring conditions:

This critique applies to neuromodulation when it targets Autistic neurology itself. TMS for depression, OCD, or epilepsy in Autistic people is a different matter — and may be legitimate when it is genuinely treating those co-occurring conditions, rather than Autistic traits. Always ask clearly: what is being targeted, and why?

Consent is complicated — especially for children.

- Most neuromodulation studies in autism are conducted with children. Children cannot meaningfully consent to treatments that alter how their brain works, especially when the framing is that their neurology is the problem.
- Meaningful consent requires understanding the purpose of treatment, its risks, the alternatives, and the right to refuse. Standard clinical settings rarely build this with Autistic children in a genuinely accessible way.
- When the goal of treatment is to reduce the very traits that define a person's sense of self, the consent framework must ask: whose goals does this serve?
- Parents acting in good faith may consent on behalf of their children. But "core autism symptoms" targeted by neuromodulation are often behaviours that are distressing to others — not to the Autistic person themselves.
- Clinicians should, to the extent possible, follow the guidance of neurodivergent individuals regarding what they are in a therapeutic space for — and why. This "may stand at odds with the idea of remediation and normalisation which sits at the heart of the medical model." (Chapman & Botha, 2023) (https://onlinelibrary.wiley.com/doi/10.1111/dmcn.15384)

The research gap itself is a form of epistemic injustice.

Honest about what we know:

There is currently no peer-reviewed paper that directly critiques neuromodulation for autism from a neuroaffirming standpoint. That absence is not evidence of safety or acceptability. It reflects a research landscape in which Autistic people have been excluded from shaping the questions — studied upon, not consulted. The ethical argument is legitimate and well-grounded in the broader neurodiversity literature, but it must be constructed and applied. It has not yet been made for us.

- Historically, Autistic people have been excluded from the production of knowledge about autism, "leading to an undue emphasis on perceived autistic deficits." (Billington et al., 2025) (https://journals.sagepub.com/doi/10.1177/16094069251346839)
- "Autism intervention researchers must respond to these debates by reframing effectiveness, developing tools to measure autistic-prioritised outcomes, and forming partnerships with autistic people." (Leadbitter et al., 2021) (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8075160/)

- No neuromodulation study for autism that we are aware of has used Autistic-prioritised outcome measures, or been co-designed with Autistic people.
- The fact that a critical neuroaffirming analysis of TMS has not been formally published does not mean the concern is invalid. It means the concern has not yet had the platform it deserves.

Questions to ask any provider offering neuromodulation.

If you or someone you support is being offered neuromodulation treatment, these are the questions that matter:

Target

What specifically is being targeted — Autistic traits, or a co-occurring condition?

Evidence

What peer-reviewed evidence supports this for this specific population and purpose?

Outcomes

Who decided what a good outcome looks like — clinicians, or the Autistic person?

Consent

Has the Autistic person been given accessible, honest information and a genuine choice?

Goals

Is this about reducing distress the person experiences — or distress they cause others?

Identity

Does this treatment communicate that this person's neurology is acceptable as it is?

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