

Neuromodulation in Psychiatry

A Giving Smarter Guide

OCTOBER 2026

Executive Summary

More than one billion people worldwide live with one or more psychiatric conditions. In the United States, mental illness carries an estimated annual economic burden of \$282 billion, driven largely by lost productivity and reduced work capacity, not just treatment costs. Even with evidence-based psychotherapy and medication, many people with conditions such as depression and obsessive-compulsive disorder (OCD) do not achieve meaningful relief.

Neuromodulation offers a complementary approach: It uses precisely targeted electrical, magnetic, or acoustic energy to change the activity of brain cells and neural circuits that contribute to symptoms. Several neuromodulation therapies already have psychiatric indications approved or cleared by the US Food and Drug Administration (FDA) and are helping some patients who have not responded to standard care. Recent advances in neuroscience and engineering have made these therapies more precise, more responsive, and less invasive.

However, neuromodulation therapies have advanced more slowly for psychiatric conditions compared with other areas of brain health, largely because their use requires a clear understanding of the biological mechanisms of illness. Psychiatric conditions are incredibly complex, often involving alterations in the functionality of multiple brain regions, significantly increasing the difficulty of appropriately targeting therapeutic stimulation.

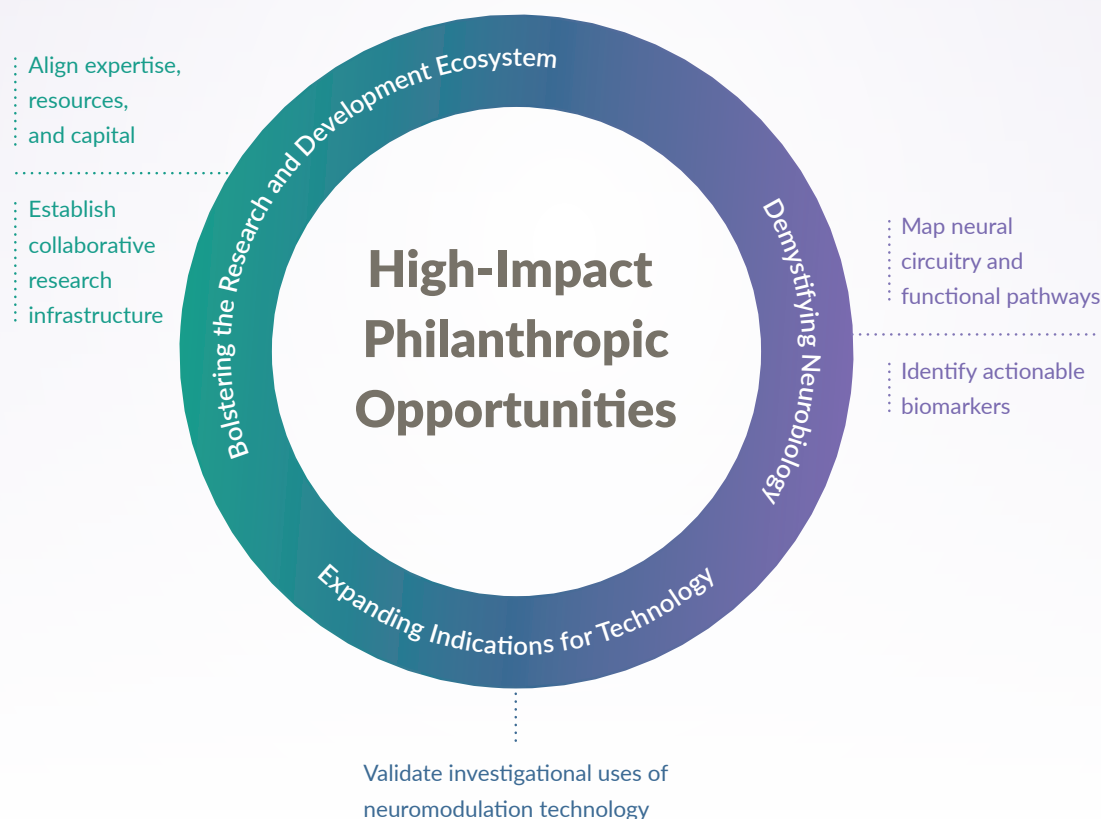
OCD provides a compelling case study for how neuromodulation research can improve our understanding of these biological mechanisms and inform better treatment protocols. Its underlying circuitry is already comparatively well understood and can be further studied through both noninvasive and surgically implanted neuromodulation approaches. As many conditions (including depression, post-traumatic stress disorder [PTSD], and substance use disorders) feature shared symptoms and overlapping biology, findings from OCD research can be broadly applied to inform progress across the field of psychiatry.

Despite the transformative potential of neuromodulation in psychiatric conditions, the current funding landscape is severely constrained. The National Institutes of Health (NIH) Brain Research through Advancing Innovative Neurotechnologies® (BRAIN) Initiative has driven innovation in brain science for over 10 years, with programmatic investments peaking at \$680 million in 2023. However, far-reaching changes in the availability and administration of public funding, including the expiration of BRAIN Initiative funding from the 21st Century Cures Act in 2026, have introduced significant uncertainty regarding the future of federally funded health research. Meanwhile, private

investment in neurotechnology is increasing, but only a small fraction supports psychiatric applications. This gap presents a strategic opportunity for philanthropy to fund high-risk, high-impact projects that are too early for commercial investors to consider, too cross-disciplinary for traditional funding, or so diffusely impactful that no single funding institution should bear the risk alone.

In June 2026, the Milken Institute's Science Philanthropy Accelerator for Research and Collaboration (SPARC), in partnership with the Rodan Family Foundation, convened the Neuromodulation in Psychiatry Stakeholders' Roundtable to identify the field's most pressing barriers and highest-leverage opportunities; this Giving Smarter Guide details the key learnings from that gathering of experts. Drawing on SPARC analysis of scientific literature, public and private funding opportunities, and structured interviews with more than 70 leading experts from across the scientific, regulatory, and funding ecosystem, this guide outlines five opportunities in which philanthropy can strengthen the translational pipeline and accelerate progress toward more precise, accessible, and effective care (see **Figure E1**).

Figure E1: High-Impact Philanthropic Opportunities



Source: Milken Institute (2026)

Every advancement in neuromodulation brings us closer to meeting the most critical needs of those living with severe psychiatric conditions, not just alleviating symptoms but achieving functional recovery and, ultimately, cures. With focused philanthropic investment, funders can transform scientific breakthroughs into lasting improvements for patients and their families.

To view the full report,
visit www.milkeninstitute.org.