



# Non-Invasive Neuromodulation of the Central Nervous System: Opportunities and Challenges: Workshop Summary

*Lisa Bain, Sheena Posey Norris, Clare Stroud, Forum on Neuroscience and Nervous System Disorders, Board on Health Sciences Policy, Institute of Medicine, Engineering, and Medicine National Academies of Sciences*

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Based on advances in biotechnology and neuroscience, non-invasive neuromodulation devices are poised to gain clinical importance in the coming years and to be of increasing interest to patients, clinicians, health systems, payers, and industry. Evidence suggests that both therapeutic and non-therapeutic applications of non-invasive neuromodulation will continue to expand in coming years, particularly for indications where treatments are currently insufficient, such as drug-resistant depression.

Given the growing interest in non-invasive neuromodulation technologies, the Institute of Medicine's Forum on Neuroscience and Nervous System Disorders convened a workshop, inviting a range of stakeholders - including developers of devices and new technologies, researchers, clinicians, ethicists, regulators, and payers - to explore the opportunities, challenges, and ethical questions surrounding the development, regulation, and reimbursement of these devices for the treatment of nervous system disorders as well as for non-therapeutic uses, including cognitive and functional enhancement. This report highlights the presentation and discussion of the workshop.

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