NeuroRegulation

ISNR INTERNATIONAL SOCIETY FOR NEUROREGULATION & RESEARCH

# Editorial: Advancing Neurofeedback Through a Holistic and Functional Lens

**Citation**: Longo, R. (2025). Editorial: Advancing neurofeedback through a holistic and functional lens. *NeuroRegulation, 12*(2), 87–88. https://doi.org/10.15540/nr.12.2.87



***Address correspondence to**: Rob Longo, 124 Walnut St, Apt 304, Wilmington, NC 28401, USA. Email: NFBRob@outlook.com

As the field of neurofeedback continues to evolve, it is imperative that we ground our progress in a comprehensive understanding of both its historical foundations and the latest scientific advancements. Neurofeedback transcends the mere application of electrodes to a client's scalp for a training session; it represents a dynamic opportunity to integrate holistic health principles into brain-based care. This perspective aligns with emerging trends in healthcare that emphasize the interconnectedness of mind, body, and environment.

At the 2023 International Society for Neurofeedback and Research (ISNR) conference, a recurring theme emerged among invited and keynote speakers: the relevance of functional medicine to our discipline. This observation resonates deeply with the vision I articulated during my candidacy for president—a commitment to advancing neurofeedback through a holistic and functional framework. Functional neurofeedback is an integrative, client-centered model of care designed to address disorders of the brain and central nervous system. It recognizes that each symptom or diagnosis may reflect a constellation of underlying factors unique to the individual, rejecting a one-size-fits-all approach (Hammond, 2011).

At its core, functional neurofeedback leverages quantitative electroencephalography (qEEG) brain mapping for precise assessment and employs brainwave training to promote not only symptom resolution but also a broader state of well-being (Thatcher, 2012). This begins with a thorough intake process, including a comprehensive health history, to ensure a holistic understanding of the client's needs. Such an approach moves beyond treating isolated disorders to fostering sustainable lifestyle improvements.

A critical aspect of this model is the practitioner's awareness of the bidirectional relationship between mental and physical health, particularly the roles of stress and anxiety. In the United States, recent estimates highlight the scale of these challenges. In 2024, approximately 23.08% of adults experienced a mental illness in the past year (Reinert et al., 2024), 21 million adults reported at least one major depressive episode (National Institute of Mental Health, 2024), and 20.17% of youths aged 12–17 faced similar struggles (Substance Abuse and Mental Health Services Administration, 2024). Furthermore, 43% of adults reported heightened anxiety compared to the previous year, often attributing this to escalating stress, while 53% and 40% identified stress and sleep, respectively, as primary lifestyle factors impacting mental health (American Psychiatric Association, 2024).

Stress and anxiety, though closely related, differ in origin. Stress typically arises from external triggers—such as interpersonal conflicts, workplace demands, or chronic illness—manifesting in symptoms like irritability, fatigue, gastrointestinal distress, and sleep disturbances (Selye, 1976). Anxiety, conversely, stems from internal triggers, such as intrusive thoughts or past experiences, activating the body's fight-or-flight response (American Psychological Association, 2019). Neurofeedback practitioners are uniquely positioned to address these conditions, leveraging technology to mitigate stress, anxiety, depression, and sleep disorders, among other health concerns (Arns et al., 2009).

To fully realize this potential, we must adopt a holistic, functional neurofeedback perspective in our clinical practice. This entails educating both our clients and our referral networks, including psychologists, physicians, psychiatrists, counselors, social workers, chiropractors, nurses, and other allied health professionals, about the mechanisms and benefits of neurofeedback. As a self-regulating organ, the brain governs both mind and body; by articulating this principle, we can position neurofeedback as a complementary intervention alongside other therapeutic modalities. In turn, we

should seek education from these professionals to foster mutual referral relationships, thereby promoting a comprehensive wellness model.

Moreover, we must champion neurofeedback as a preventive strategy. The evidence is clear: stress and anxiety contribute to physical health decline, while neurofeedback and related neuroregulation interventions can significantly reduce, if not eliminate, these burdens (Marzbani et al., 2016). Research also underscores neurofeedback's efficacy in alleviating depression and enhancing sleep quality (Cheon et al., 2016). Given this, there is no reason we should not market ourselves as practitioners of preventive health, dedicated to improving quality of life.

As we look to the future, let us commit to advancing neurofeedback not merely as a reactive treatment but as a proactive tool for wellness. By embracing a functional and holistic approach, we can elevate our field, strengthen interdisciplinary collaboration, and empower our clients to lead healthier, more balanced lives.

Rob Longo, LPC
President, ISNR
Email: NFBRob@outlook.com

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**Received:** March 17, 2025
**Accepted:** May 5, 2025
**Published:** June 27, 2025