BOSTON
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Introduction to Neurofeedback Online Training

36 hour BCIA Approved Training

with optional 36 hours approved CE credits

9 Weeks on Tuesdays (March 7, 14, 21, 28, April 4, 11, 18, and May 2, 9)

Contact Information:
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Neurofeedback Basic Training

This document outlines a neurofeedback training course designed for clinicians seeking to acquire neurofeedback skills. The introductory level training provides the participants with the knowledge and practical skills necessary to successfully integrate neurofeedback into their clinical practice. The training is also a necessary part of preparing the participants for Board Certification in Neurofeedback.

This 36-hour neurofeedback training is accredited by Biofeedback Certification International Alliance (BCIA) and fulfills all the criteria of didactic training necessary for BCIA board certification in Neurofeedback.

The training prepares its participants to immediately begin the practice of neurofeedback on the way to board certification. Neurofeedback is a powerful clinical tool that enables clinicians to successfully work with otherwise difficult to treat patients suffering from a variety of psychophysiological disorders. Neurofeedback has been empirically demonstrated to be an efficacious treatment of ADHD, epilepsy, depression, anxiety, post-traumatic stress disorder, autism, and many others.

This training provides sufficient material so clinicians will gain:

- Knowledge the psychophysiological and electrical bases to understand the theory underlying neurofeedback
- Understanding of the conditions appropriate for neurofeedback treatment
- Familiarity with common assessments
- Understanding of different neurofeedback modalities
- Knowledge of the neurofeedback recording devices
- Practical experience to perform an effective neurofeedback session and assessments.

Learning objectives: To provide in-depth knowledge of the psychophysiology, electrical and neurofeedback training techniques required to perform neurofeedback training. This knowledge is crucial to effectively integrate and apply neurofeedback into the clinician's practice. In particular:

1. Summarize the psychophysiological and electrical background as a basis to understand neurofeedback treatment
2. List the conditions appropriate for neurofeedback treatment.
3. Explain the theoretical knowledge of the different modalities and protocols and assess their appropriate use.
4. Demonstrate the ability to use neurofeedback equipment to successfully perform neurofeedback sessions and assessments.
5. Apply theoretical knowledge to implement both assessments and sessions.

For a complete list of learning objectives, please see Addendum 1.

BCIA-approved health care fields include: psychology, nursing, (including 2-year registered nurses with license; not LVNs or LPNs), physical therapy, occupational therapy, social work, counseling, rehabilitation, chiropractic, recreational therapy, physician's assistant (with certification or license), exercise physiology, speech pathology, and sports medicine. The following fields require a master's degree: music therapy and counseling education (M.Ed. in counseling). Appropriately credentialed doctors of medicine are also accepted. Degrees in health care fields other than those listed above must be submitted to the Certification Review Committee.
Boston NeuroDynamics and BCIA will consider requests for special review for the demonstration of equivalency for most of our requirements, including prerequisite education. However, degree review requests must be compared to a BCIA-approved clinical health care field.

The training consists:

- 36-hours of didactic teaching, through a live, interactive online format
- Live demonstrations of practical skills
- All workshop materials provided in a PDF format
- Discussion group and exam review
- Official certificate of course completion
- Help with completing BCIA application

Credit hours: This workshop provides participants with the 36 didactic hours necessary for BCIA certification. These hours correspond to the BCIA blueprint requirements for each area of knowledge.

CE Credits: up to 36 CE credit hours are available through R. Cassidy. Evaluations and Certificates are available by email and online following course completion at www.ceuregistration.com

For more information about CE credits, see Addendum 2

Neurofeedback blueprint and hours:

Unit	Topic	Hours
I	Introduction	4
II	Anatomy and Physiology	4
III	Electricity	4
IV	Research and Protocols	2
V	Psychopharmacology	2
VI	Assessments	4
VII	Protocol Development	6
VIII	Treatment Implementation	6
IX	Trends	2
X	Ethics	2
		Total: 36

Schedule and format: The March 2022 training will take place weekly on Tuesdays for 9 weeks from March 7, 2023 - May 9, 2023 virtually over ZOOM. The schedule will be as follows:

10:00 - 10:15 Review/Q&A (optional)
10:15 - 12:00 Lecture
12:15 - 12:30 Break
12:30 - 2:30 Lecture

All times are in Eastern Time. This schedule may change slightly. For a more detailed agenda, see Addendum 3.

While this is a virtual training, we are making it as interactive as possible. The majority of the presentations will be live, with options to ask questions, have conversations, and see each other. It will also include demonstrations and an optional review each week. This 36-hour training is sufficient to get BCIA accreditation.

A hands-on intermediate practicum, called "From Protocol Development to Conducting a Neurofeedback Session: Theory and Hands-on Practicum", will be offered to supplement this training. The training is an intermediate neurofeedback course that will focus on the intricacies of performing neurofeedback sessions and theoretical knowledge of protocol development. It will be held in-person in June 2023 in Boston, MA (COVID permitting).

Location: Virtual over ZOOM. The link will be provided prior to the start date. All presentations will be emailed in a PDF file format.

Language: The sessions will be taught live in English, with real-time translation into Spanish, Portuguese and Italian. All presentation PDFs will be provided in English, Spanish and Italian.

Tuition and fees: Tuition for the training in March-May 2023 training is $1240 (if paid in full) and $1390 (in 4 installments). Separate costs are available for Europe and Latin America. An additional discount to students and groups will be given. In-house training may be arranged to train staff within an organization, with tuition negotiated separately, based on the number of attendees (minimum number applies).

Cancellation policy: All payments will be fully refunded if the cancellation is made 4 weeks prior to the training, with a $50 processing fee. Cancellations made less than 4 weeks, but more than 5 days before the training can be refunded at 50% or fully credited towards the next workshop. Cancellations made 5 days or fewer before class cannot be refunded or credited.

Disclosure Statement: There is no conflict of interest or commercial support for this program

Questions/Concerns: For questions or concerns, you can call us at (617) 855-9295 or email us at info@bostonneurodyanmics.com

Faculty: The training is designed and will be taught by Ainat Rogel, PhD, MSW and Diana Martinez, MD, PhD in collaboration with Leon Morales-Quezada, MD, PhD and Mirret M. El-Hagrassy, MD

Ainat Rogel, PhD, MSW, BCN, LICSW
Ainat is the co-founder and co-director of Boston Neurodynamics where she practices neurofeedback, performs and analyzes brain mapping (qEEG). She trains and supervises neurofeedback practitioners and students and gives international presentations. She specialized in developmental trauma and PTSD. Ainat currently serves as the President-Elect of ISNR (International Society of Neuroregulation and Research). She believes in incorporating neurofeedback as part of therapy, and focuses on developmental trauma. She also believes in fundamental and large-scale research studies.
Ainat received her Ph.D. in Computer-Science and Neurobiology from The Hebrew University in Jerusalem, Israel, and her MSW from Simmons College in 2014 and LICSW in 2017. She has worked in brain research at various places such as MIT, the Marinos Center for Biomedical Imaging and Hebrew University in Jerusalem, Israel. Since 2010, she has focused on neurofeedback research and clinical work at the Mental Health Center in Beer-Sheva, Israel and at Ben-Gurion University. Ainat worked as a clinician, educator, and group intake coordinator at Arbour Outpatient Clinic in Jamaica Plain, Boston. She has been on the staff at the Trauma Center at JRI since 2012 as a chief scientist of neurofeedback and a senior affiliate at the neurofeedback clinic. She also trains and supervises NFB clinicians. She coordinated the child

Neurofeedback Study and was part of the adult NFB study.
Ainat is fluent in Hebrew and English
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Diana Martinez, MD, PHD, LMHC, BCN

Diana is a medical doctor with a specialty in Neurorehabilitation. She received her medical degree from University of Aguascalientes, Mexico in 2002, Fellowship in Neurological Rehabilitation from IAHP, Philadelphia, USA in 2006; M.Sc in Neurological Rehabilitation in 2009, Fellowship Neurophysiology from University Hospital, Cleveland, USA in 2012 and PhD from De Montfort University from Leicester, UK in 2018. She has 15 years of experience treating severe brain injured patients in United States, Mexico, Spain, Italy, China, Brazil, Colombia and Honduras. She developed, along with other professionals, an integrative intervention to rehabilitated neurological conditions including neurofeedback and other non-invasive brain stimulation techniques. She is the CEO (since 2012) of Neocemod (Neuromodulation Center), Mexico City and Aguascalientes, Mexico, with experience treating patients with epilepsy, learning disorders, behavioral disorders, mood disorders, sleep disorders, TBI and CP. She has extensive experience in neurophysiology, EEG/qEEG/ERP interpretation. Also, she is an international consultant for Neurofeedback professionals and currently she combines clinical work, and research; which lead to study the effects of Neurofeedback in epilepsy for her PhD thesis. She continues received invitations to give lectures and workshops for ISNR, BFE, NRBS and SMNB (Mexican Neurofeedback society) and other international neurological and neurophysiology societies.
In 2017 she became the Director of Neurofeedback Clinic at Trauma Center at JRI in Boston and currently she is cofounder of Boston Neurodynamics offering high quality training and consulting for neurophysiological evaluations, neurofeedback,biofeedback and noninvasive brain stimulation interventions.
Diana is fluent in Spanish and English
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Leon Morales-Quezada, MD, BCN

Dr. Leon Morales-Quezada is a physician-scientist with experience in neurocognitive rehabilitation, noninvasive neuromodulation, applied psychophysiology, and technology development for neurological rehabilitation. Dr. Morales-Quezada received his MD degree from Universidad Autonoma de Aguascalientes and completed clinical training in emergency medicine and intensive care. He also completed a fellowship and Masters in Neuropsychology Rehabilitation at Touro College, a PhD in Cognitive Neurosciences from De Montfort University in Leicester UK, and a Master's in Public Health from Harvard School of Public Health. Dr. Morales-Quezada completed a fellowship in Integrative Medicine from the Harvard-NIH

program, at the Division of General Medicine and Primary Care at Beth Israel Deaconess Medical Center (BIDMC) and Spaulding Rehabilitation Hospital (SRH), Harvard Medical School. Dr. Morales-Quezada research interests focus on noninvasive neuromodulation, the placebo effect, and technology development applied in rehabilitation and behavioral medicine.

Mirret M. El-Hagrassy, MD

Mirret M. El-Hagrassy, MD, is a licensed neurologist, board-certified in Neurology and Epilepsy. She is a neurologist at UMass Memorial and Assistant Professor of Neurology at University of Massachusetts Medical School. Prior to that she was a post-doctoral research fellow at the Spaulding Neuromodulation Center, Harvard Medical School. Dr. El-Hagrassy was conducting research in neuromodulation with an emphasis on neurologic disorders, and her research projects involved the effects of non-invasive brain stimulation on Parkinson's disease, chronic pain as well as EEG changes in healthy volunteers. She has authored peer-reviewed articles, as well as book chapters on topics including digital EEG signal analysis, non-invasive brain stimulation, epilepsy and clinical research. Dr. El-Hagrassy has a special interest in non-invasive brain stimulation, EEG, epilepsy, and neurofeedback. She enjoys living and working in multicultural environments and multi-specialty groups. Dr. El-Hagrassy completed her medical training at the Faculty of Medicine, Cairo University (Cairo, Egypt) over a decade ago, and has moved to the US since. She completed her neurology residency at SUNY Upstate University Hospital (Syracuse, NY), clinical neurophysiology (EEG and Epilepsy track) fellowship at Cleveland Clinic (Cleveland, Ohio).

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Addendum 1
Complete list of Learning Objectives

Presentation Title	Learning Objectives
1A **Introduction to Neurofeedback**	1. List the different neuroimaging techniques 2. Define neurofeedback, its mechanism and uses 3. Name 4 assumptions related to neurofeedback
1B **History and Development of Neurofeedback**	1. Review the pioneers of neurofeedback 2. Describe the early clinical applications of neurofeedback
1C **Learning Theories and Clinical Applications**	1. Analyze and summarize classical conditioning and operant conditioning 2. Define important terms related to learning theories (secondary reinforcement, extinction, generalization, habituation, and shaping)
1D **Arousal, Attention, EEG and Neurofeedback**	1. Define and identify arousal 2. Differentiate between the different types of arousal 3. Describe and analyze the relationship between arousal, attention, EEG and neurofeedback
1D **Homeostasis, Allostasis, Feedback and Control Systems**	1. Name two different feedback mechanism 2. Identify homeostasis and allostasis 3. Describe the physiological mechanisms of the stress response 4. Summarize the different types of stress mechanisms
2 **Neuroanatomy and Neurophysiology**	1. Summarize the different parts of a neuron and their communication 2. List the three levels of the brain and their functioning 3. List the four lobes and their function 4. Describe how EEG is being generated 5. Define neuroplasticity and its role in NFB
3 **International 10-20 System of Electrode Placement**	1. Explain, use and apply the 10-20 electrode placement system 2. Demonstrate the ability to place electrodes according to the 10-20 system
3A **Electricity and EEG**	1. Explain the history and relevance of an EEG 2. Define and use the basic terms of electricity relevant to EEG 3. Describe the processing of electrical signals
3B **Posterior Dominant Rhythm (PDR)**	1. Describe the role of PDR 2. Identify PDR 3. Differentiate between normal and abnormal PDR 4. Measure PDR by using Minimaps as an assessment tool

3BC **Montages**	1. Summarize the different montages 2. Describe the advantages and disadvantages of the different montages 3. Compare and analyze the different montages and when to use them
3BC **Artifacts**	1. Identify a variety of artifacts in an EEG recording 2. Explain how to prevent and minimize artifacts
3C **Band Widths and Wave Forms**	1. Identify the different brain bandwidths and their functioning 2. Describe the connection between brain bandwidths and arousal 3. Summarize the different conditions of EEG
4 **Research in Neurofeedback**	1. Identify evidence-based research in neurofeedback 2. List the efficacy levels of NFB research 3. Demonstrate the ability to review a NFB research 4. List key research papers in neurofeedback 5. Describe clinical and research challenges in NFB
5 **Psychopharmacology**	1. Describe the effects of medications, drugs, alcohol and other substances on the brain and EEG 2. Explain the reward mechanism 3. Explain the physiological mechanism of substances
6 **Client Assessment**	1. Describe the importance of assessments 2. Summarize the different assessments for intake and ongoing sessions 3. Detect and address adverse reactions
Practicum: **Arousal Assessment**	1. Explain and demonstrate intake and assess the client's arousal level 2. Create a NFB protocol based on different arousal assessments 3. Demonstrate the ability to perform a NFB session based on the arousal assessment protocol
Practicum: **Minimap PDR**	1. Explain the purpose of a minimap PDR 2. Demonstrate the ability to perform a minimap PDR 3. Interpret PDR data
7 **Protocol Development**	1. List four factors to take into account when defining a protocol 2. Describe how to accommodate client needs and practitioner's experience when defining a protocol 3. List three factors needed to gather information 4. Select an appropriate treatment modality based on a variety of factors 5. Analyze a client case presentation
8 **Treatment Implementation**	1. Describe and demonstrate the role of a neurotherapist 2. Summarize alpha theta training 3. Explain the process of remote training and assess its pros and cons
Practicum: **qEEG**	1. Inspect the brain activity from a qEEG acquisition demonstration 2. Describe the steps to analyze the data

	3. Create a NFB protocol based on a qEEG
Practicum: Running a Session	1. Explain and demonstrate the intake and assess the client's arousal level 2. Demonstrate client's preparation for a NFB session 3. Create a NFB protocol based on different arousal assessments 4. Conduct the first NFB session
Practicum: Protocol Adjustment	1. Evaluate the effectiveness of a previous NFB session 2. Adjust the reward band or the protocol based on (a) client's feedback, (b) Symptom Checklist questionnaire, (c) modification in the arousal assessment 3. Discuss the role of threshold in performing a NFB session
9 Trends in Neurofeedback	1. List five different treatment modalities 2. Design trainings which combine neurofeedback with other modalities
10 Ethical & Professional Conduct	1. Review the different biofeedback organizations 2. Summarize the NFB code of ethics 3. Discuss the supervision/mentoring process

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Addendum 2
CE Credits