

Research with ILF NFB

ILF Neurofeedback Mechanisms and Neurophysiology

- Dobrushina, O. et al. (2020). Modulation of Intrinsic Brain Connectivity by Implicit Electroencephalographic Neurofeedback. *Frontiers in Human Neuroscience*, **14**: 192.
- Grin-Yatsenko, V., Kara, O., Evdokimov, S., Gregory, M., Othmer, S. & Kropotov, J. (2020). Infra-Low Frequency Neurofeedback Modulates Infra-Slow Oscillations of Brain Potentials: A Controlled Study. *Journal of Biomedical Engineering and Research*, **4**, 1-11.
- Grin-Yatsenko, V. A., Ponomarev, V. A., Kara, O., Wandernoth, B., Gregory, M., Ilyukhina, V. A., & Kropotov, J. D. (2018). Effect of Infra-Low Frequency Neurofeedback on Infra-Slow EEG Fluctuations. In *Biofeedback*. IntechOpen
- Grin-Yatsenko, V. A., Ponomarev, V. A. & Kropotov, J. D. The Changes of the Infra-Slow EEG Fluctuations of the Brain Potentials under Influence of Infra-Low Frequency Neurofeedback. *J. Evol. Biochem. Physiol.* 59, 831–840 (2023).
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- Arina, G., Osina, E., Dobrushina, O. & Aziatskaya, G. (2017). Sham-neurofeedback as an intervention: Placebo or nocebo? *European Psychiatry*, **41**, 253-254.
- Altan, S., Berberoglu, B., Canan, S. & Dane, S. (2016). Effects of neurofeedback therapy in healthy young subjects. *Clin invest Med* **39**, 27–30.
- Dobrushina, O. et al. (2015). The effect of Infra-Low Frequency Neurofeedback on default mode network of the brain. Conference paper at Applied Neuroscience and Social Well being, Moscow. (in Russian).
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- Legarda S., McMahon D., Othmer S. & Othmer SF. (2011). Clinical Neurofeedback: Case Studies, Proposed Mechanism and Implication for Paediatric Neurology Practice. *Journal of Child Neurology*, **26**(8), 1045-1051.
- Othmer S., Othmer SF. & Legarda S. (2011). Clinical Neurofeedback: Training Brain Behavior. *Pediatric Neurology and Psychiatry*, **2**, 67-73.
- Seuß S, Riederle J. Erfahrungen mit Neurofeedback in der therapeutischen Praxis. *Prax Ergotherapie*. 2021;2:75–81.
- Fleischman, M. J. (2022). Documenting the Impact of Infra Low Frequency Neurofeedback on Underserved Populations With Complex Clinical Presentations. *Front. Hum. Neurosci.* 16, 1–9.

Bazzana F, Finzi S, Di Fini G and Veglia F (2022) Infra-Low Frequency Neurofeedback: A Systematic Mixed Studies Review. *Front. Hum. Neurosci.* 16:920659. doi: 10.3389/fnhum.2022.920659

Kropotov JD (2022) The enigma of infra-slow fluctuations in the human EEG *Front. Hum. Neurosci.* 16:928410. doi: 10.3389/fnhum.2022.928410

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ILF Neurofeedback in latest clinical application

Addiction

Corominas-Roso, M. et al. (2020): Benefits of EEG-Neurofeedback on the Modulation of Impulsivity in a Sample of Cocaine and Heroin Long-Term Abstinent Inmates: A Pilot Study. *International Journal of Offender Therapy and Comparative Criminology*, **64**(12), 1275-1298.

ADHD

Schneider, H., Riederle, J. & Seuss, S. (2021): Therapeutic Effect of Infra-Low_Frequency Neurofeedback Training on Children and Adolescents with ADHD. In: *Brain-Computer Interface*, Vahid Asadpour ed., IntechOpen Limited, 2021:**13**, doi: 10.5772/intechopen.97938

Prinz, W. (2015): Neurofeedbacktherapie als Spezialtherapieangebot. *Psychopraxis. Neuropraxis* **18**, 180–183.

Flatz, T. & Gleußner, M. (2014): Neurofeedbacktherapie bei ADHS und Autismus. *Pädiatrie & Pädologie* **49**, 22–27.

Ahlstrand, P. & Grattbeck, M. (2013): *Neurofeedback - ett behandlingsalternativ vid ADHD*.

Aging & Parkinson's

Dobrushina, O. R. et al. (2022). Enhancing Brain Connectivity With Infra-Low Frequency Neurofeedback During Aging : A Pilot Study. *Front. Hum. Neurosci.* 16, 1–12.

Legarda SB, Michas-Martin PA and McDermott D (2022) Managing Intractable Symptoms of Parkinson's Disease: A Nonsurgical Approach Employing Infralow Frequency Neuromodulation. *Front. Hum. Neurosci.* 16:894781. doi: 10.3389/fnhum.2022.894781

Autism

Rauter, A., Schneider, H. & Prinz, W. (2022): Effectivity of ILF Neurofeedback on Autism spectrum disorder – a Case Study. *Front. Hum. Neurosci.* 16, 1-6.

Prinz, W. (2015): Neurofeedbacktherapie als Spezialtherapieangebot. *psychopraxis. neuropraxis* **18**, 180-183. (in German)

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Saleem, S. & Habib, S. H. Neurofeedback Recuperates Cognitive Functions in Children with Autism Spectrum Disorders (ASD). *J. Autism Dev. Disord.* (2023).
doi:10.1007/s10803-023-06037-z

Brain Injury

Annaheim C, Hug K, Stumm C, Messerli M, Simon Y and Hund-Georgiadis M (2022): Neurofeedback in patients with frontal brain lesions: A randomized, controlled double-blind trial. *Front. Hum. Neurosci.* 16:979723. doi: 10.3389/fnhum.2022.979723

Carlson, J. & Ross, G. (2021): Neurofeedback Impact on Chronic Headache, Sleep and Attention Disorders Experienced by Veterans with Mild Traumatic Brain Injury: A Pilot Study. *Biofeedback*, **49**(1), 2-9.

Chronic Illness

Borchert, N. et al. Learning from Läkklabbet : An integrative transdisciplinary eco therapeutic treatment approach designed to promote resource capacity in people recovering from chronic ill health . 1–9 (2023).

Depression

Grin-Yatsenko, V. A., & Kropotov, J. D. (2020): Effect of infra-low frequency neurofeedback on the functional state of the brain in health and depressed individuals. In *H. W. Kirk (Ed.), Restoring the brain: Neurofeedback as an integrative approach to health (2nd ed.)*. Routledge, pp. 244-255.

Grin-Yatsenko, V. A. et al. (2018): Infra-low frequency neurofeedback in depression: Three case studies. *NeuroRegulation* **5**, 30–42.

Tschiesner, R. Infra-Low-Frequency Neurofeedback Treatment in Dysthymia : A Case Study. *Behav. Sci. (Basel)*. 13, (2023).

Eating disorders

Winkeler, A., Winkeler, M. & Imgart, H. (2022): Infra-Low Frequency Neurofeedback in the Treatment of Patients With Chronic Eating Disorder and Comorbid Post-Traumatic Stress Disorder. *Front. Hum. Neurosci.* 16, 1–11.

Leong, S. L., Vanneste, S., Lim, J., Smith, M., Manning, P., & De Ridder, D. (2018): A randomised, double-blind, placebo-controlled parallel trial of closed-loop infraslow brain training in food addiction. *Scientific reports*, **8**(1), 1-9.

Chirita-Emandi, A., & Puiu, M. (2014): Outcomes of neurofeedback training in childhood obesity management: A pilot study. *Journal of Alternative and Complementary Medicine*, 20(11), 831–837.

Fibromyalgia, Multiple Sclerosis, Concussion

Legarda, S. B., Lahti, C. E., Mcdermott, D. & Michas-martin, A. (2022): Use of Novel Concussion Protocol With Infralow Frequency Neuromodulation Demonstrates Significant Treatment Response in Patients With Persistent Postconcussion Symptoms , a Retrospective Study. *Front. Hum. Neurosci.* 16, 1–16.

Ingvaldsen, S. H. (2019): QEEG and Infra-Low Frequency Neurofeedback Training in Fibromyalgia: A Pilot Study (Master's thesis, NTNU).

Lamprecht, C. E. (2019): The effect of neurofeedback in post-concussion syndrome. Doctoral dissertation, Stellenbosch University.

Dobrushina, O. R., Varako, N. A., Kovyazina, M. S. & Zinchenko, Y. P. (2016): Combination of Neurofeedback and cognitive training in attention deficit due to multiple sclerosis. *Int. J. Psychophysiol.* **108**, 118.

Insomnia

Orakpo N, Yuan C, Olukitibi O, Burdette J and Arrington K (2022): Does Virtual Reality Feedback at Infra-Low Frequency Improve Centralized Pain With Comorbid Insomnia While Mitigating Risks for Sedative Use Disorder?: A Case Report. *Front. Hum. Neurosci.* 16:915376. doi: 10.3389/fnhum.2022.915376

Moore PT (2022): Infra-low frequency neurofeedback and insomnia as a model of CNS dysregulation. *Front. Hum. Neurosci.* 16:959491. doi: 10.3389/fnhum.2022.959491

Migraine & Tension Headache

Dobrushina, O., Arina, G., Osina, E. & Aziatskaya, G. (2017): Clinical and psychological confirmation of stabilizing effect of neurofeedback in migraine. *European Psychiatry*, **41**.

Arina, G. A. et al. (2022): Infra-Low Frequency Neurofeedback in Tension-Type Headache: A Cross-Over Sham-Controlled Study. *Front. Hum. Neurosci.* 16, 1–9.

Legarda SB, Michas-Martin PA and McDermott D (2022): Remediating Intractable Headache: An Effective Nonpharmacological Approach Employing Infralow Frequency Neuromodulation. *Front. Hum. Neurosci.* 16:894856. doi: 10.3389/fnhum.2022.894856

Pain

Orakpo N, Yuan C, Olukitibi O, Burdette J and Arrington K (2022): Does Virtual Reality Feedback at Infra-Low Frequency Improve Centralized Pain With Comorbid Insomnia While Mitigating Risks for Sedative Use Disorder?: A Case Report. *Front. Hum. Neurosci.* 16:915376. doi: 10.3389/fnhum.2022.915376

Peak Performance

Othmer, S. F. S. & Othmer, S. F. S. Performance Enhancement Applications of Neurofeedback. in *Case Studies in Applied Psychophysiology: Neurofeedback and Biofeedback Treatments for Advances in Human Performance* 17–30 (2011). doi:10.1002/9781119959984.ch2

Persistent postural-perceptual dizziness

Sasu R (2022): Infra-low frequency neurofeedback in persistent postural-perceptual dizziness—Case report. *Front. Hum. Neurosci.* 16:959579. doi: 10.3389/fnhum.2022.959579

PTSD

Spreyermann, R. (2022): Case Report : Infra-Low-Frequency Neurofeedback for PTSD : A Therapist ' s Perspective. *Front. Hum. Neurosci.* 16.

Winkeler, A., Winkeler, M. & Imgart, H. (2022): Infra-Low Frequency Neurofeedback in the Treatment of Patients With Chronic Eating Disorder and Comorbid Post-Traumatic Stress Disorder. *Front. Hum. Neurosci.* 16, 1–11.

Kirk HW and Dahl MG (2022): Infra Low Frequency Neurofeedback Training for Trauma Recovery: A Case Report. *Front. Hum. Neurosci.* 16:905823. doi: 10.3389/fnhum.2022.905823

Gerge, A. (2020): A multifaceted case-vignette integrating neurofeedback and EMDR in the treatment of complex PTSD. *European Journal of Trauma & Dissociation*, 4(3), 100157.

Dahl, M. G. (2020): Neurofeedback with PTSD and traumatic brain injury. In *H. W. Kirk (Ed.), Restoring the brain: Neurofeedback as an integrative approach to health (2nd ed.)*. New York, NY: Routledge, pp.256-284.

Nilsson, R. M. & Nilsson, V. (2014): Neurofeedback Treatment for Traumatized Refugees-A Pilot Study. Lund University, Department of Psychology.

Othmer, S., Othmer, S. F. & Legarda, S. B. (2011): Clinical Neurofeedback: Training Brain Behavior. *Treat. Strateg. Pediatr. Neurol. Psychiatry* 2, 67–73.

Othmer, S. & Othmer, S. F. (2009): Post Traumatic Stress Disorder—The Neurofeedback Remedy. *Biofeedback* 37, 24–31.

Kelson, C. Y. The Impact of EEG Biofeedback on Veterans' Symptoms of Posttraumatic Stress Disorder (PTSD). (2013).

Refractory neurological disorders (Epilepsy, Cerebral Palsy)

Legarda, S. B., McMahon, D., Othmer, S. S. & Othmer, S. S. (2011): Clinical neurofeedback: Case studies, proposed mechanism, and implications for pediatric neurology practice. *J. Child Neurol.* **26**, 1045–1051.

Schmidt, C. & Laugesen, H. Infra-low frequency neurofeedback training in Dravet syndrome : a case study. *Epilepsy Behav. Reports* 100606 (2023). doi:10.1016/j.ebr.2023.100606

Schizophrenia

Nestoros JN and Vallianatou NG (2022): Infra-Low Frequency Neurofeedback rapidly ameliorates schizophrenia symptoms: A case report of the first session. *Front. Hum. Neurosci.* 16:923695. doi: 10.3389/fnhum.2022.923695

Tinnitus

Güntensperger, D. (2018): Treatment of chronic tinnitus with neurofeedback. (Doctoral Dissertation, University of Zurich). (*Attn: they have primarily used frequency band NFB training in their studies and are (just) referring to ILF-NFB*)

Güntensperger, D., Thüring, C., Meyer, M., Neff, P. Kleinjung, T. (2017): Neurofeedback for Tinnitus Treatment - Review and Current Concepts. *Frontiers in Aging Neuroscience*, **9**,386. (*Attn: they have primarily used frequency band NFB training in their studies and are (just) referring to ILF-NFB*)

Tourette/Tic Disorders

Solberg B and Solberg E (2022): Infra-low frequency neurofeedback in application to Tourette syndrome and other tic disorders: A clinical case series. *Front. Hum. Neurosci.* 16:891924. doi: 10.3389/fnhum.2022.891924

Virtual Reality NFB in Pain Treatment

Orakpo, N., Yuan, C., Olukitibi, O., Burdette, J. & Arrington, K. (2022): Does Virtual Reality Feedback at Infra-Low Frequency Improve Centralized Pain With Comorbid Insomnia While Mitigating Risks for Sedative Use Disorder ? : A Case Report. *Front. Hum. Neurosci.* 16, 1–5.

Orakpo, N., Vieux, U. & Castro-Nunez, C. (2021): Case Report: Virtual Reality Neurofeedback Therapy as a Novel Modality for Sustained Analgesia in Centralized Pain Syndromes. *Frontiers in Psychiatry*, **12**, 418. DOI: 10.3389/fpsy.2021.660105

Books and book chapters on ILF Neurofeedback

Kirk, H. W. (2020): *Restoring the Brain: Neurofeedback as an Integrative Approach to Health*. Second Edition, Routledge, Taylor and Francis Group. Othmer S. (2019). Protocol Guide for Neurofeedback Clinicians, 7th Edition. EEG Info

Kirk H. (2015): *Restoring the Brain: Neurofeedback as an Integrative Approach to Health*. CRC Press, Taylor and Francis Group.

Othmer, S. & Othmer, S. F. (2011): Performance Enhancement Applications of Neurofeedback. In *Case Studies in Applied Psychophysiology: Neurofeedback and Biofeedback Treatments for Advances in Human Performance* 17–30. Wiley-Blackwell.

Haus, K.-M. et al. (2015): *Praxisbuch Biofeedback und Neurofeedback*. Springer Berlin, Heidelberg, doi:10.1007/978-3-662-59720-0

Wiedemann, M. & Segler, K. (2017): *Neurofeedback - Wie eine spielerisch leichte Therapie dem Gehirn hilft, Probleme zu überwinden*. Kösel, ISBN: 3466346827.