**Program of the 4-day BCIA accredited Neurofeedback course**

This training course will be presented by Dr. Martijn Arns (BCN, QEEG-D), Dr. Kerstin Mayer, (BCN) and Drs. Vera Kruiver (BCN). Martijn Arns is director at Research Institute Brainclinics, CSO at the neuroCare Group and affiliated with Utrecht University, Dept. of Experimental Psychology, Kerstin Mayer is part of the faculty from neuroCademy (neuroCare Group) in Munich and Vera Kruiver is therapist, rTMS and Neurofeedback specialist at Psychology Practice Brainclinics.

Below you can find a recommended reading list, which serves as a good preparation to the course. Most of these can be obtained via the Brainclinics Community (<http://www.brainclinics.com/community>). These articles are also included in the course binder, which will be handed out at the beginning of the course. The course is intended for academics in human sciences, specifically psychologists, psychiatrists, pediatricians and neurologists who would like to apply neurofeedback in clinical practice or apply this technique in research settings. In addition to hands-on practice of neurofeedback, there will also be hands on practice with sleep diagnostics and actigraphy.

**Suggested reading material**

Arns, M. (2010a). Handboek neurofeedback bij ADHD. [Handbook Neurofeedback in ADHD] In *Handboek neurofeedback bij ADHD* (1 ed.). Amsterdam: SWP.

Arns, M., Feddema, I. & Kenemans, J.L. (2014) Differential effects of theta/beta and SMR neurofeedback in ADHD on sleep onset latency. *Frontiers in Human Neuroscience*, doi: http://dx.doi.org/10.3389/fnhum.2014.01019 **\***

Arns, M., & Kenemans, J. L. (2012). Neurofeedback in ADHD and insomnia: Vigilance stabilization through sleep spindles and circadian networks. *Neuroscience and Biobehavioral Reviews.* doi:10.1016/j.neubiorev.2012.10.006 **\***

Arns, M., Conners, C. K., & Kraemer, H. C. (2012). A decade of EEG theta/beta ratio research in ADHD: A meta-analysis. *Journal of Attention Disorders.* doi:10.1177/1087054712460087

Arns, M., Heinrich, H., & Strehl, U. (2014). Evaluation of neurofeedback in ADHD: The long and winding road. Biological Psychology, 95, 108-15. doi:10.1016/j.biopsycho.2013.11.013 **\***

Arns, M., de Ridder, S., Strehl, U., Breteler, M., & Coenen, A. (2009). Efficacy of neurofeedback treatment in ADHD: The effects on inattention, impulsivity and hyperactivity: A meta-analysis. *Clinical EEG and Neuroscience*, *40*(3), 180-9. **\***

Arns, M., Drinkenburg, W., & Leon Kenemans, J. (2012). The effects of QEEG-informed neurofeedback in ADHD: An open-label pilot study. *Applied Psychophysiology and Biofeedback*, *37*(3), 171-80.

Mayer, K., Wyckoff, S. N., & Strehl, U. (2013). One size fits all? Slow cortical potentials neurofeedback: A review. *Journal of Attention Disorders*, *17*(5), 393-409. doi:10.1177/1087054712468053 **\***

Sherlin, L., Arns, M., Lubar, J., Heinrich, H., Kerson, C., Strehl, U., & Sterman, M. B. (2011). Neurofeedback and basic learning theory: Implications for research and practice. *Journal of Neurotherapy*, *15*(4), 292-304.

Sherlin, L., Arns, M., Lubar, J. F., & Sokhadze, E. (2010). A position paper on neurofeedback for the treatment of ADHD. *Journal of Neurotherapy*, *14*(2), 66-78. **\***

**\* reflect the most recommended articles**

**Program**

|  |  |
| --- | --- |
| **Day 1** | |
| 9.00 – 9.30 hr | Welcome and Introduction |
| 9.30 – 11.00 hr | Neurophysiological basis of the EEG |
| 11.00 – 11.15 hr | Coffee break |
| 11.15 – 11.45 hr | Learning theory: Operant and Classical Conditioning |
| 11.45 – 12.30 hr | History of Neurofeedback |
| 12.30 – 13.30 hr | Lunch |
| 13.30 – 15.00 hr | Neurofeedback in ADHD: Evidence Based and long term effects |
| 15.00 – 15.45 hr | Neurofeedback hands-on practice / QEEG, Sleep and actigraphy practice |
| 15.45 – 16.15 hr | Coffee break |
| 16.15 – 18.00 hr | QEEG, Sleep and actigraphy practice / Neurofeedback hands-on practice |
| 18.00 hr | Questions and closing of the day |
| **Day 2** | |
| 9.00 – 10.15 hr | Technical aspects of Neurofeedback |
| 10.15 – 10.30 hr | Coffee break |
| 10.30 – 12.3010 | Slow Cortical Potential neurofeedback (SCP) and ERP’s |
| 12.30 – 13.30 hr | Lunch |
| 13.30 – 14.00 hr | New developments and other applications in Neurofeedback and Neuromodulation |
| 14.00 – 15.15 hr | Interpretation of the QEEG and EEG: EEG Phenotype and EEG Vigilance model |
| 15.15 – 15.30 hr | Coffee break |
| 15.30 – 18.00 hr | Practice and demonstration: QEEG examples and interpretation |

|  |  |
| --- | --- |
| **Day 3** | |
| 9.00 – 10.30 hr | QEEG and Neurofeedback in ADHD: From diagnosis to prognosis… |
| 10.30 – 10.45 hr | Coffee break |
| 10.45 – 12.30 hr | QEEG and Neurofeedback in ADHD: From prognosis to treatment… to prevention…? |
| 12.30 – 13.30 hr | Lunch |
| 13.30 – 14.45 hr | Interpretation of the QEEG and EEG: EEG Phenotypes and EEG Vigilance model |
| 14.45 – 15.30 hr | Neurofeedback: Hands-on practice / Actigraphy: Scoring and Interpretation |
| 15.30 – 15.45 hr | Coffee break |
| 15.45 – 18.00 hr | Actigraphy: Scoring and Interpretation / Neurofeedback: Hands-on practice |
| **Day 4** | |
| 9.00 – 11.00 hr | Clinical embedding of neurofeedback and case examples: ADHD and Sleep I |
| 11.00 – 11.15 hr | Coffee break |
| 11.00 – 12.30 . | Clinical embedding of neurofeedback and case examples: ADHD and Sleep II |
| 12.30 – 13.30 hr | Lunch |
| 13.00 – 14.00 hr | QEEG in ADHD: In depth focus and application |
| 14.00 – 15.30 hr | Hands-on practicum: QEEG Interpretation: Part 1 |
| 15.30 – 15.45 hr | Coffee break |
| 15.45 – 18.00 hr | Hands-on practicum: QEEG Interpretation: Part 2 |
| 18.00 hr | Evaluation, Exam and closing |