

An introduction to therapeutic chess - background, methods and applications

References

Manuals

1. Training Manual on Chess-Based Cognitive Remediation Therapy (CB-CRT) (in German)

Vollstädt-Klein, S., Montero, J.A., Schmitt, R., Flor, H. Schachbasierte kognitive Remediationstherapie bei Abhängigkeitserkrankungen [Chess-Based Cognitive Remediation Therapy (CB-CRT) for addictive disorders] - Manual für Gruppeninterventionen [Manual for group interventions]. Zenodo 2025: doi: 10.5281/zenodo.16901577
Download-Link: <https://zenodo.org/records/16901577>

2. Step-by-Step article (in German)

Vollstädt-Klein S, Flor H (2025) Schachbasierte kognitive Remediationstherapie bei Abhängigkeitserkrankungen. PSYCH up2date. 19:457–463. doi: 10.1055/a-2578-3259

3. Training Manual on Chess-Based Cognitive Remediation Training (CB-CRT) (in English)

Sabine Vollstädt-Klein, Roland Schmitt, Juan Antonio Montero, Herta Flor, International Society for Applied Chess (ISAC) 2026. Chess-Based Cognitive Remediation Training - Manual for group interventions. protocols.io
Download-Link: <https://www.protocols.io/view/chess-based-cognitive-remediation-training-manual-36wgqxzb3lk5/v1>

4. Step-by-Step article (in English)

Coming soon

Brain mechanisms and Chess

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2. Atherton, M., Zhuang, J., Bart, W. M., Hu, X., & He, S. (2003). A functional MRI study of high-level cognition. I. The game of chess. *Cogn Brain Res*, 16(1), 26–31. doi:10.1016/S0926-6410(02)00207-0
fMRI study in amateur players finding the best move: bilateral parietal, occipital and premotor activation, suggesting chess cognition is largely visuospatial.

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doi:10.1016/j.neuropsychologia.2014.07.019
Structural MRI/DTI in 20 expert players vs. 20 controls: reduced grey matter volume and cortical thickness in the occipito-temporal junction and precuneus.

Duals System Models in mental disorders

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doi:10.1038/nn1584
Proposes addiction as an imbalance between an impulsive (amygdala) and a reflective (prefrontal) decision system.
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Review showing that ADHD in adolescence adds to the already elevated tendency for impulsive and risky choices.
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Review of the neurobiology of antisocial behavior in adolescents and its (so far limited) use in forensic clinical practice.
4. Vollstädt-Klein, S., Gerhardt, S., Lee, A., et al. (2020). Interaction between behavioral inhibition and neural alcohol cue-reactivity in ADHD and alcohol use disorder. *Psychopharmacology*, 237(6), 1691–1707. doi:10.1007/s00213-020-05492-1
fMRI study combining an inhibition task with alcohol cues: higher ADHD/AUD symptom load went with stronger subcortical reward responses, supporting the view that ADHD further weakens inhibition.

Cognitive Remediation Therapy in General

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Overview of neurobehavioral therapies as adjuncts to standard treatment, with initial data on cognitive control training in severe depression.
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Meta-analysis of 16 RCTs of cognitive training in children/adolescents with ADHD; effects on symptoms were seen mainly in unblinded ratings.

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Pilot RCT of cognitive remediation therapy targeting cognitive flexibility in anorexia nervosa.
5. Sofuoglu, M., DeVito, E. E., Waters, A. J., & Carroll, K. M. (2016). Cognitive function as a transdiagnostic treatment target in stimulant use disorders. *J Dual Diagn*, 12(1), 90–106. doi:10.1080/15504263.2016.1146383
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Systematic review of cognitive remediation added to substance use treatment; a promising avenue for cognition and treatment outcome.
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Systematic review of cognitive remediation in adolescents with autism spectrum disorder, showing improvements in cognitive flexibility and problem solving, reduction of ASD symptoms, better school performance and social skills and improved quality of life.

Positive effects of playing chess in all ages

1. Aciego, R., García, L., & Betancort, M. (2012). The benefits of chess for the intellectual and social-emotional enrichment in schoolchildren. *Span J Psychol*, 15(2), 551–559. doi:10.5209/rev_SJOP.2012.v15.n2.38866
Quasi-experimental study of 170 schoolchildren (6–16 y) playing chess vs. 60 playing soccer/basketball; chess players improved in cognitive ability, coping, problem solving and socio-affective development.
2. Meloni, C., & Fanari, R. (2019). Chess training effect on meta-cognitive processes and academic performance. In *Proceedings of CELDA 2019* (pp. 387–393). IADIS Press.
85 primary-school children: a 30-hour chess program vs. a sport program; better mathematical problem solving, no difference in text comprehension or study strategies.
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30-week chess program within math classes for special-education students (n = 31); better end-of-year grades and math test scores.
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Non-randomized controlled pilot: 12 weeks of chess (2 × 60 min/week) improved cognition and quality of life in older adults.

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Only moderate link between chess and improved math or cognitive skills.
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Personality profiles of elite male and female chess players; female players were more performance-oriented, less worried about health and more satisfied with life than the general population.

Chess for Therapy

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Self-published book on chess in and for psychotherapy, with case studies and cautions against use without trained guidance.
2. Demily, C., Cavézian, C., Desmurget, M., Berquand-Merle, M., Chambon, V., & Franck, N. (2009). The game of chess enhances cognitive abilities in schizophrenia. *Schizophr Res*, 107(1), 112–113. doi:10.1016/j.schres.2008.09.024
Short report: 26 patients with schizophrenia, 5 weeks of chess (2 h/week) vs. treatment as usual; improved executive functions in the chess group.
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Randomized study (n = 96 young male offenders) of a CBT-based life skills program using chess; improved problem solving and anger management in the short and medium term, but effects were not lasting.
4. Nour ElDaou, B. M., & El-Shamieh, S. I. (2015). The effect of playing chess on the concentration of ADHD students in the 2nd cycle. *Procedia Soc Behav Sci*, 192, 638–643.
Small study (14 students with ADHD, 11–13 y) of a chess course; longer concentration periods and less disruptive behavior.
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Open-label pilot (44 children with ADHD, 11-week chess training, no control group); ADHD symptoms decreased with a large effect size.
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Systematic review on chess-based interventions in clinical and healthcare settings and structural and functional adaptations in chess experts