Therapieschema im multimodalen Setting mit PUFAs, Multispezies-Probiotika und anderen Mikronährstoffen bei Kindern und Erwachsenen mit ausgeprägter AD(H)S Symptomatik

Mag. Dr. Reinhard Pichler
In der Schmuckerau 7
2700 Wiener Neustadt | Österreich
pichler.r@outlook.com
www.reinhardpichler.at

Literatur

[1] Li X, Guo Y, Giuliodori Picco A et al. Trends in use of Attention-Deficit Hyperactivity Disorder medications among children and adults in five European countries, 2010 to 2023: a population-based observational study The Lancet Regional Health – Europe, 2026; 61

[2] Weitere Bezeichnungen sind bspw. ADHD (Attention Deficite Hyperactivity Disorder), ADS (Aufmerksamkeits-Defizit-Syndrom) oder ADD (Attention Deficit Disorder).

[3] Sobanski, E. & Alm, B. (2004). Aufmerksamkeitsdefizit-/Hyperaktivitätsstörung (ADHS) im Erwachsenenalter. Nervenarzt, 75, 697–716; https://www.sciencemediacenter.de/angebote/neudiagnosen-von-adhs-bei-erwachsenen-in-deutschland-25233; https://www.sciencemediacenter.de/angebote/evidenz-zur-behandlung-von-erwachsenen-mit-adhs-24191; Hamm M., Berger M., ADHS bei Erwachsenen. Die Nährstofftherapie, Hannover 2010

[4] Gimbach, S. Vogel, D. Fried, R. et al., ADHD medicine consumption in Europe after COVID-19: catch-up or trend change? BMC Psychiatry. 2024; 24(1):112; Chan, A.Y.L. Ma, T.-T. Lau, W.C.Y. et al., Attention-deficit/hyperactivity disorder medication consumption in 64 countries and regions from 2015 to 2019: a longitudinal study. eClinicalMedicine. 2023; 58(101780), 101780; Raman, S.R. Man, K.K.C. Bahmanyar, S. et al. Trends in attention-deficit hyperactivity disorder medication use: a retrospective observational study using population-based databases. Lancet Psychiatry. 2018; 5(10):824–835; Karlstad, Ø. Zoëga, H. Furu, K. et al. Use of drugs for ADHD among adults-a multinational study among 15.8 million adults in the Nordic countries. Eur J Clin Pharmacol. 2016; 72(12):1507–1514

[5] https://www.thelancet.com/journals/lanepe/article/PIIS2666–7762(25)00348–5/fulltext

[6] Im ICD 11 wurden die Diagnosekriterien mit DSM 5 angeglichen.

[7] Popow, C., Ohmann, S. ADHS im Kindes- und Jugendalter. Update 2020. Paediatr. Paedolog. 55 (Suppl 1), 1–22 (2020)

[8] Li X, Guo Y, Giuliodori Picco A et al. Trends in use of Attention-Deficit Hyperactivity Disorder medications among children and adults in five European countries, 2010 to 2023: a population-based observational study The Lancet Regional Health – Europe, 2026; 61

[9] https://www.researchgate.net/profile/Eveline-Breidenstein/publication/391836079_CME-FORTBILDUNG/links/6828828c6b5a287c30423f69/CME-FORTBILDUNG.pdf

[10] Grosch U., Magazin des ö. Berufsverbandes für Kinesiologie 22(2009)29–33

[11] Grosch U., Magazin des ö. Berufsverbandes für Kinesiologie 22(2009)29–33

[12] https://www.thieme-connect.com/products/ejournals/abstract/10.1055/s-2007–993823

[13] Nau A., Das HPU-Kompendium: Hormone, Mitochondrien und Nährstoffe, EPV Verlag Hattingen 2026; Heufelder, A.E. (2001) Kryptopyrrolurie. Comed 2001, 5.; Heufelder, A.E. (2002) Kryptopyrrolurie. Orthomolecular Medizin 25, 110–111.; Knoche, T. (2004) Die Pyrrolurie, der Vitamin B6 – Stoffwechsel und Folgeerkankungen. Umwelt-Echo jan. 2004, 35ff; Ledochowski, M., B. Widner and D. Fuchs (2000) Fruktosemalabsorption. J. Ernährungsmed. 3, 10–14.; Strienz, Chr. (2007) Leben mit KPU – Kryptopyrrolurie W. Zuckschwerdt Verlag, München – Wien – New York 2007; Thome, K. (2002) Pyrrolurie – ein unbekanntes und doch verbreitetes Phänomen. WzG-Verlag; Zank, M. (2004) Gibt es Zusammenhänge zwischen Kryptopyrolurie, MCS, CFS, Fibromyalgie, KISS-Syndrom und Schleudertrauma? Umwelt-Echo jan. 2004,33–34.

[14] https://ajronline.org/doi/epdf/10.2214/AJR.17.18983

[15] https://ajronline.org/doi/epdf/10.2214/AJR.17.18983

[16] https://www.researchgate.net/publication/272538604_Brain_Microstructural_Correlates_of_Attention-DeficitHyperactivity_Disorder-Consistencies_and_Confounds_from_Diffusion_Magnetic_Resonance_Imaging_Studies

[17] https://www.researchgate.net/publication/272538604_Brain_Microstructural_Correlates_of_Attention-DeficitHyperactivity_Disorder-Consistencies_and_Confounds_from_Diffusion_Magnetic_Resonance_Imaging_Studies

[18] https://pubmed.ncbi.nlm.nih.gov/24705817/
[19] Leffa DT et al. Transcranial direct current stimulation vs sham for the treatment of inattention in adults with attention-deficit/hyperactivity disorder: the TUNED randomized clinical trial. JAMA Psychiatry. 2022;79(9):847–56; Leffa DT et al. Eur Neuropsychopharmacol. 2016;26(2):368–77; Leffa DT et al. Brain Stimul. 2018;11(4):743–51; Jung DH et al. Elife. 2020; 9:e56359; Roll SC, Hahn M. Transkranielle Gleichstromstimulation für zu Hause - ein weiterer Therapieansatz bei ADHS? DNP. 2023;24(2):25. German. doi: 10.1007/s15202–023–5633–5. Epub 2023 Apr 3. PMCID: PMC10068216.; https://econtent.hogrefe.com/doi/10.1024/1422–4917.32.3.187
[20] https://acamh.onlinelibrary.wiley.com/doi/10.1111/jcpp.13779
[21] Ostinelli EG et al. (2025): Comparative efficacy and acceptability of pharmacological, psychological, and neurostimulatory interventions for ADHD in adults: a systematic review and component network meta-analysis. The Lancet Psychiatry. DOI: 10.1016/S2215–0366(24)00360–2; https://link.springer.com/article/10.1007/s15202–023–5635–3
[22] https://www.infodrog.ch/de/wissen/suchtformen/amphetamine.html; https://datenportal.bundesdrogenbeauftragter.de/stimulanzien
[23] https://www.researchgate.net/profile/Eveline-Breidenstein/publication/391836079_CME-FORTBILDUNG/links/6828828c6b5a287c30423f69/CME-FORTBILDUNG.pdf
[24] https://adhs-deutschland.de/pdf/2_3_therapie/Wirkung-und-Nebenwirkung-der-Arzneimittel_DrUlrichKohns_AKZENTE_115–1_2020.pdf
[25] https://adhs-deutschland.de/pdf/2_3_therapie/Wirkung-und-Nebenwirkung-der-Arzneimittel_DrUlrichKohns_AKZENTE_115–1_2020.pdf
[26] https://adhs-deutschland.de/pdf/2_3_therapie/Arzneimittel-in-der-Therapie-der-ADHS_DrKohns_AKZENTE-114_3–2019.pdf
[27] https://www.researchgate.net/profile/Eveline-Breidenstein/publication/391836079_CME-FORTBILDUNG/links/6828828c6b5a287c30423f69/CME-FORTBILDUNG.pdf
[28] https://www.sciencedirect.com/science/article/abs/pii/S0890856709600666
[29] Whitaker R., Anatomie einer Epidemie. Wenn Psychopharmaka krank machen, Stuttgart 2026
[30] https://adhs-deutschland.de/pdf/2_3_therapie/Wirkung-und-Nebenwirkung-der-Arzneimittel_DrUlrichKohns_AKZENTE_115–1_2020.pdf
[31] https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://www.gelbe-liste.de/produkte/beipackzettel_Methylphenidat-HEXAL-10-mg-Tabletten.pdf/d0651e02–3538–44d2–8565-cda50508ba19&ved=2ahUKEwiAjpH3isqSAxV7RvEDHdNtHBgQFnoECCQQAQ&usg=AOvVaw1jUlqD7qJjgad88jfz1eap Aufruf: 08.02.2026
[32] https://www.ratiopharm.de/assets/products/de/pkg_insert/Lisdexamfetamin-ratiopharm%20Erwachsene%20Hartkapseln%20-%201.pdf?pzn=19210527
[33] https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://app.fagg-afmps.be/pharma-status/api/files/62bc57cf1e5c015ab3bcff70&ved=2ahUKEwjK05aCjsqSAxXbgf0HHfEzHD0QFnoECCMQAQ&usg=AOvVaw0zRxAQkcGt-pkYaP_bd-7I
[34] https://www.akdae.de/arzneimittelsicherheit/bekanntgaben/newsdetail/akutes-leberversagen-unter-methylphenidat-therapie-aus-der-uaw-datenbank
[35] https://www.researchgate.net/publication/10644204_Stimulant_Rebound_How_Common_Is_It_and_What_Does_It_Mean
[36] https://link.springer.com/article/10.1007/s11920–006–0043-x
[37] https://pubmed.ncbi.nlm.nih.gov/20631199/; ADS, ADHS und Mikronährstoffe. https://www.diagnostisches-centrum.de; Nahrungsergänzungsmittel in der ADHS-Therapie: Ein Überblick über die aktuelle Forschung, https://adhs-kompakt.de; ADHS alternativ behandeln. https://www.vitamindoctor.com; Die richtige Ernährung bei ADHS https://www.ernaehrungs-therapie.net
[38] Rucklidge, J.J., et al., Vitamin-mineral treatment improves aggression and emotional regulation in children with ADHD: a fully blinded, randomized, placebo-controlled trial. J Child Psychol Psychiatry, 2018. 59(3): p. 232–246; Häge, A., ADHS und Nahrungsergänzungsmittel. ADHS-Report 2020. 61(Februar 2020)6–7.
[39] https://utheses.univie.ac.at/detail/16602; https://www.diagnostisches-centrum.de/indikationen/ads-und-adhs.html; https://komplementaermedizin-felber.de/ernaehrungs-und-orthomolekulare-medizin/ads-adhs-und-mikronaehrstoffe/
[40] Harding KL, Judah RD, Gant C. Outcome-based comparison of Ritalin versus food-supplement treated children with AD/HD. Altern Med Rev. 2003 Aug;8(3):319–30. PMID: 12946241: https://altmedrev.com/wp-content/uploads/2019/02/v8–3–319.pdf
[41] LaChance, L., et al., Omega-6 to Omega-3 Fatty Acid Ratio in Patients with ADHD: A Meta-Analysis. J Can Acad Child Adolesc Psychiatry, 2016. 25(2)87–96; Döpfner, M., et al., Efficacy of Omega-3/Omega-6 Fatty Acids in Preschool Children at Risk of ADHD: A Randomized Placebo-Controlled Trial. J Atten Disord, 2019: https://journals.sagepub.com/doi/10.1177/1087054719883023
[42] https://link.springer.com/chapter/10.1007/978–3-642–01067–5_14
[43] https://pubmed.ncbi.nlm.nih.gov/7572706/
[44] Montgomery, 2013; Hawkey, 2014; Widenhorn-Muller, 2014; Parletta, 2016
[45] Peet, 2003; Mamalakis, 2004; Su, 2003
[46] Kidd, 2007
[47] Montgomery, 2013
[48] Lung, 2013; Hawkey, 2014; Widenhorn-Muller, 2014; Raine, 2015; Checa-Ros, 2018
[49] Bei den oben zusammengefassten Studien lagen die Dosen von EPA und DHA im Bereich von 1–7 gr/Tag.

[50] Chang J. et al, Omega-3 Polyunsaturated Fatty Acids in Youths with Attention; Deficit Hyperactivity Disorder: a Systematic Review and Meta-Analysis of Clinical Trials and Biological Studies: https://pmc.ncbi.nlm.nih.gov/articles/PMC5669464/pdf/npp2017160a.pdf

[51] Moghaddam M., Effectiveness of methylphenidate and PUFA for the treatment of patients with ADHD: A double-blindedrandomized clinical trial, Electronic Physician 9(2017)4412–4418: https://pmc.ncbi.nlm.nih.gov/articles/PMC5498708/pdf/epj-09–4412.pdf

[52] Perera H, Jeewandara KC, Seneviratne S, Guruge C. Combined ω3 and ω6 supplementation in children with attention-deficit hyperactivity disorder (ADHD) refractory to methylphenidate treatment: a double-blind, placebo-controlled study. J Child Neurol. 2012 Jun;27(6):747–53.: https://pubmed.ncbi.nlm.nih.gov/22596014/

[53] Richardson, Alexandra J. and Paul Montgomery. "The Oxford-Durham Study: A Randomized, Controlled Trial of Dietary Supplementation With Fatty Acids in Children With Developmental Coordination Disorder." Pediatrics 115 (2005): 1360 - 1366. https://www.semanticscholar.org/paper/The-Oxford-Durham-Study%3A-A-Randomized%2C-Controlled-Richardson-Montgomery/3aef2d822f7200cce192d474a3b1b164a6853df1?p2df

[54] Pinar-Martí A, Fernández-Barrés S, Gignac F, Persavento C, Delgado A, Romaguera D, Lázaro I, Ros E, López-Vicente M, Salas-Salvadó J, Sala-Vila A, Júlvez J. Red blood cell omega-3 fatty acids and attention scores in healthy adolescents. Eur Child Adolesc Psychiatry. 2023 Nov;32(11):2187–2195. doi: 10.1007/s00787–022–02064-w. Epub 2022 Aug 12. https://pmc.ncbi.nlm.nih.gov/articles/PMC10576734/

[55] Widenhorn-Müller K, Schwanda S, Scholz E, Spitzer M, Bode H. Effect of supplementation with long-chain ω-3 polyunsaturated fatty acids on behavior and cognition in children with attention deficit/hyperactivity disorder (ADHD): a randomized placebo-controlled intervention trial. Prostaglandins Leukot Essent Fatty Acids. 2014 Jul-Aug;91(1–2):49–60. doi: 10.1016/j.plefa.2014.04.004. Epub 2014 May 28. PMID: 24958525. https://pubmed.ncbi.nlm.nih.gov/24958525/

[56] Lassek WD, Gaulin SJ. Linoleic and docosahexaenoic acids in human milk have opposite relationships with cognitive test performance in a sample of 28 countries. Prostaglandins Leukot Essent Fatty Acids. 2014 Nov;91(5):195–201. doi: 10.1016/j.plefa.2014.07.017. Epub 2014 Aug 8. PMID: 25172360. https://pubmed.ncbi.nlm.nih.gov/25172360/

[57] Schmiedel V, Vogt H, Walach H. Are pupils' 'Programme for International Student Assessment (PISA)' scores associated with a nation's fish consumption? Scand J Public Health. 2018 Nov;46(7):675–679. doi: 10.1177/1403494817717834. Epub 2017 Nov 21. PMID: 29160148.

[58] https://www.cambridge.org/core/services/aop-cambridge-core/content/view/969EC01F1E71E822243DBFD080CD904F/S0007114515004390a.pdf/randomised_doubleblind_placebocontrolled_trial_investigating_the_behavioural_effects_of_vitamin_mineral_and_n3_fatty_acid_supplementation_in_typically_developing_adolescent_schoolchildren.pdf

[59] RCT: randomized controlled trial

[60] Stevens L, Zhang W, Peck L, Kuczek T, Grevstad N, Mahon A, Zentall SS, Arnold LE, Burgess JR. EFA supplementation in children with inattention, hyperactivity, and other disruptive behaviors. Lipids. 2003 Oct;38(10):1007–21. doi: 10.1007/s11745–006–1155–0. PMID: 14669965.

[61] Richardson AJ, Burton JR, Sewell RP, Spreckelsen TF, Montgomery P (2012) Docosahexaenoic Acid for Reading, Cognition and Behavior in Children Aged 7–9 Years: A Randomized, Controlled Trial (The DOLAB Study). PLoS ONE 7(9): e43909. https://doi.org/10.1371/journal.pone.0043909 https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0043909#abstract0

[62] Chang JP, Su KP, Mondelli V, Satyanarayanan SK, Yang HT, Chiang YJ, Chen HT, Pariante CM. High-dose eicosapentaenoic acid (EPA) improves attention and vigilance in children and adolescents with attention deficit hyperactivity disorder (ADHD) and low endogenous EPA levels. Transl Psychiatry. 2019 Nov 20;9(1):303. doi: 10.1038/s41398–019–0633–0. PMID: 31745072; PMCID: PMC6864068. https://pubmed.ncbi.nlm.nih.gov/31745072/

[63] https://www.elsevier.es/en-revista-neurologia-english-edition--495-articulo-impulsiveness-in-children-with-attention-deficit-hyperactivity-S2173580821001619

[64] https://www.cpn.or.kr/journal/view.html?doi=10.9758/cpn.2021.19.4.712

[65] https://pmc.ncbi.nlm.nih.gov/articles/PMC4212392/pdf/AMHSR-4–291.pdf

[66] https://link.springer.com/article/10.1007/s15006–021–9608–1#Fig2

[67] https://pubmed.ncbi.nlm.nih.gov/19022985/

[68] https://pmc.ncbi.nlm.nih.gov/articles/PMC5207676/pdf/pone.0169145.pdf

[69] https://pubmed.ncbi.nlm.nih.gov/20806985/

[70] https://www.researchgate.net/publication/7573345_Zinc_in_Attention-DeficitHyperactivity_Disorder

[71] https://www.mikronaehrstoff.de/pdf/Belegexemplar_ehk_2019–05_10019336_Wissen_Groeber.pdf

[72] https://www.rosenfluh.ch/media/ernaehrungsmedizin/2011/01/07_Chrom_Mangan_1.11.pdf

[73] Mohammadpour, N., et al., Effect of vitamin D supplementation as adjunctive therapy to methylphenidate on ADHD symptoms: A randomized, double blind, placebo-controlled trial. Nutr Neurosci, 2018. 21(3)202–209; Elshorbagy, H.H., et al., Impact of Vitamin D Supplementation on Attention-Deficit Hyperactivity Disorder in Children. Ann Pharmacother, 2018. 52(7)623–631

[74] https://www.sciencedirect.com/science/article/abs/pii/S0306452216303256
[75] https://pmc.ncbi.nlm.nih.gov/articles/PMC4212392/
[76] https://link.springer.com/article/10.1007/s00213–009–1717-y
[77] https://www.ingentaconnect.com/content/ben/cnsnddt/2019/00000018/00000006/art00009
[78] https://www.feba-beratung.ch/wp-content/uploads/2021/06/Nutrition_and_ADHD.pdf
[79] https://link.springer.com/article/10.1186/s12887–021–02631–1
[80] https://pmc.ncbi.nlm.nih.gov/articles/PMC2955638/
[81] https://omundernaehrung.com/media/documents/StudienKompakt/51%20Studie%20Kompakt%20-%20Phosphatidylserin%20bessert%20ADHD%20bei%20Kindern.pdf
[82] https://onlinelibrary.wiley.com/doi/10.1111/jhn.12090
[83] Hirayama, S., et al., The effect of phosphatidylserine administration on memory and symptoms of attention-deficit hyperactivity disorder: a randomised, double-blind, placebo-controlled clinical trial. J Hum Nutr Diet, 2014. 27 Suppl 2:284–91.
[84] https://www.mse-pharma.de/wp-content/uploads/Nr.6_Fachinformation_Autismus_und_ADHS_10_2016_zW.pdf
[85] Lopresti AL, Drummond PD. Saffron (Crocus sativus) for depression: a systematic review of clinical studies and examination of underlying antidepressant mechanisms of action. Hum Psychopharmacol. 2014 Nov;29(6):517–27. doi: 10.1002/hup.2434. Epub 2014 Sep 22. PMID: 25384672.
[86] https://pmc.ncbi.nlm.nih.gov/articles/PMC9573091/pdf/nutrients-14–04046.pdf
[87] https://www.researchgate.net/publication/353607856_A_Comparison_of_Methylphenidate_MPH_and_Combined_Methylphenidate_with_Crocus_sativus_Saffron_in_the_Treatment_of_Children_and_Adolescents_with_ADHD_A_Randomized_Double-Blind_Parallel-Group_Clinical_Tr
[88] https://journals.lww.com/jpbs/fulltext/2018/10040/saffron__crocus_sativus_l____as_an_antidepressant.1.aspx
[89] https://www.sciencedirect.com/science/article/abs/pii/S0378874119339182
[90] Bagga D, Reichert JL, Koschutnig K, Aigner CS, Holzer P, Koskinen K, Moissl-Eichinger C, Schöpf V. Probiotics drive gut microbiome triggering emotional brain signatures. Gut Microbes. 2018 Nov 2;9(6):486–496. doi: 10.1080/19490976.2018.1460015. Epub 2018 Jun 14. PMID: 29723105; PMCID: PMC6287679.
[91] Romanos Marcel: https://www.sciencemediacenter.de/angebote/evidenz-zur-behandlung-von-erwachsenen-mit-adhs-24191
[92] Krebs C.T., Lernsprünge. Eine bahnbrechende Methode zur Integration des Gehirns, Freiburg 1998, v.a. 237ff
[93] https://www.medical-tribune.de/medizin/alternativmedizin/schwermetalle-und-adhs; https://www.laborpraxis.vogel.de/verhaltensstoerung-durch-schwermetalle-a-309867/
[94] Grosch U., Magazin des ö. Berufsverbandes für Kinesiologie 22(2009)29–33
[95] Grosch U., Magazin des ö. Berufsverbandes für Kinesiologie 22(2009)29–33