

Review Article & Case Report

Childhood Absence Epilepsy: Putative Complementary Diet and Orthomolecular Treatment Options; with an Addendum to an Earlier Report

by Jonathan E. Prousky, ND, MSc, MA

*Reprinted with permission from: *Journal of Orthomolecular Medicine*, 2016; 31(2).

References

- Abdou AM, Higashiguchi S, Horie K, et al. (2006). Relaxation and immunity enhancement effects of γ -Aminobutyric acid (GABA) administration in humans. *BioFactors*, 26(3), 201-208.
- Banich MT, Compton RJ. (2013). Generalized cognitive disorders. In *Cognitive neuroscience* (3rd ed., Int ed., pp. 466-497). United Kingdom: Wadsworth Cengage Learning.
- Benassi E, Besio G, Cupello A, et al. (1992). Evaluation of the mechanisms by which gamma-amino-butyric acid in association with phosphatidylserine exerts an antiepileptic effect in the rat. *Neurochemical Research*, 17(12), 1229-1233.
- Berg AT, Shinnar S, Levy SR, et al. (2000, 10). How Well Can Epilepsy Syndromes Be Identified at Diagnosis? A Reassessment 2 Years After Initial Diagnosis. *Epilepsia*, 41(10), 1269-1275.
- Boonstra E, Kleijn RD, Colzato LS, et al. (2015). Neurotransmitters as food supplements: The effects of GABA on brain and behavior. *Frontiers in Psychology*, 6, 1-6.
- Bouma P, Westendorp RG, Dijk JG, Peters AC, Brouwer OF. (1996). The outcome of absence epilepsy: A meta-analysis. *Neurology*, 47(3), 802-808.
- Clemens Z, Kelemen A, Fogarasi A, Toth C. (2013). Childhood absence epilepsy successfully treated with the Paleolithic ketogenic diet. *Neurology and Therapy*, 2(1), 71-76.
- CoCaTotILA, E. (1989). Proposal for revised classification of epilepsies and epileptic syndromes. Commission on Classification and Terminology of the International League Against Epilepsy. *Epilepsia*, 30(4), 389-399.
- Cocito L, Bianchetti A, Bossi L, Gilberti L, Loeb C. (1994). GABA and phosphatidylserine in human photosensitivity: A pilot study. *Epilepsy Research*, 17(1), 49-53.
- Engelborgh S, D'Hooge R, De Deyn PP. (2000). Pathophysiology of epilepsy. *Acta Neurologica Belgica*, 100(4), 201-214.
- Eyles DW, Smith S, Kinobe R, Hewison M, Mcgrath JJ. (2005). Distribution of the Vitamin D receptor and 1 α -hydroxylase in human brain. *Journal of Chemical Neuroanatomy*, 29(1), 21-30.
- Fausser S, Huppertz H-J, Bast T, et al. (2006). Clinical characteristics in focal cortical dysplasia: A retrospective evaluation in a series of 120 patients. *Brain*, 129(7), 1907-1916.
- Fujibayashi M, Kamiya T, Takagaki K, Moritani T. (2008). Activation of Autonomic Nervous System Activity by the Oral Ingestion of GABA. *Journal of Japan Society of Nutrition and Food Science*, 61(3), 129-133.
- Glaser TA, Cnaan A, Shinnar S, et al [on behalf of the Childhood Absence Epilepsy Study Group]. (2010). Ethosuximide, valproic acid, and lamotrigine in childhood absence epilepsy. *New England Journal of Medicine*, 362(9), 790-799.
- Groomes LB, Pyzik P L, Turner Z, Dorward JL, Goode VH, Kossoff EH. (2011). Do patients with absence epilepsy respond to ketogenic diets? *Journal of Child Neurology*, 26(2), 160-165.
- Hoffer A. (1962). *Niacin therapy in psychiatry*. Springfield, IL: Charles C Thomas.
- Holló A, Clemens Z, Kamondi A, Lakatos P, Szűcs A. (2012). Correction of vitamin D deficiency improves seizure control in epilepsy: A pilot study. *Epilepsy & Behavior*, 24(1), 131-133.
- Jallon P, Loiseau P, Loiseau J. (2001, 12). Newly diagnosed unprovoked epileptic seizures: Presentation at diagnosis in CAROLE study. *Epilepsia*, 42(4), 464-475.
- Kidd PM. (1996). Phosphatidylserine: Membrane nutrient for memory. A clinical and mechanistic assessment. *Alternative Medicine Review*, 1(2), 70-84.
- Kossoff EH, Cervenka MC, Henry BJ, Haney CA, Turner Z. (2013). A decade of the modified Atkins diet (2003-2013): Results, insights, and future directions. *Epilepsy & Behavior*, 29(2013), 437-442.
- Kossoff EH, McGrogan JR, Bluml, RM, Pillas DJ, Rubenstein JE, Vining, EP. (2006). A modified Atkins diet is effective for the treatment of intractable pediatric epilepsy. *Epilepsia*, 47(2), 421-424.
- Kossoff EH, Zupec-Kania BA, Rho JM. (2009). Ketogenic diets: An update for child neurologists. *Journal of Child Neurology*, 24(8), 979-988.
- Li J, Zhang Z, Liu X, et al. (2015). Study of GABA in Healthy Volunteers: Pharmacokinetics and Pharmacodynamics. *Frontiers in Pharmacology Front. Pharmacol.*, 6, 1-9.
- Loeb C, Benassi E, Bo GP, Cocito L, Maffini M, Scotto P. (1987). Preliminary investigation of the effect of GABA and phosphatidylserine in epileptic patients. *Epilepsy Research*, 1(3), 209-212.
- Loeb C, Bo GP, Scotto PA, et al. (1985). GABA and phospholipids in penicillin-induced seizures. *Experimental Neurology*, 90(1), 278-280.

- Loiseau P, Duche B, Pedespan J. (1995). Absence epilepsies. *Epilepsia*, 36(12), 1182-1186.
- Panayiotopoulos CP. (1999). Typical absence seizures and their treatment. *Archives of Disease in Childhood*, 81(4), 351-355.
- Pavone P, Bianchini R, Trifiletti R, Incorpora G, Pavone A, Parano E. (2001). Neuropsychological assessment in children with absence epilepsy. *Neurology*, 56(8), 1047-1051.
- Prousky JE. (2014). The adjunctive treatment of epilepsy with orthomolecular substances. *Journal of Orthomolecular Medicine*, 29(4), 167-175.
- Ramagopalan SV, Heger A, Berlanga AJ, et al. (2010, 08). A ChIP-seq defined genome-wide map of vitamin D receptor binding: Associations with disease and evolution. *Genome Research*, 20(10), 1352-1360.
- Sharma S, Jain P. (2014). The modified atkins diet in refractory epilepsy. *Epilepsy Research and Treatment*, 2014, 1-6.
- Sillanpää M, Shinnar S. (2010). Long-Term Mortality in Childhood-Onset Epilepsy. *New England Journal of Medicine*, 363(26), 2522-2529.
- Stewart A, Wong K, Cachat J, et al. (2010). Neurosteroid vitamin D system as a nontraditional drug target in neuropsychopharmacology. *Behavioural Pharmacology*, 21(5-6), 420-426.
- Toffano G, Mazzari S, Zanotti A, Bruni A. (1984). Synergistic effect of phosphatidylserine with gamma-aminobutyric acid in antagonizing the isoniazid-induced convulsions in mice. *Neurochemical Research*, 9(8), 1065-1073.
- Tower DB. (1960). The administration of gamma-aminobutyric acid to man: Systemic effects and anticonvulsant action. In *Inhibition in the nervous system and gamma-aminobutyric acid* (pp. 562-578). New York, NY: Pergamon Press, Inc.
- Vega C, Guo J, Killory B, et al. (2011). Symptoms of anxiety and depression in childhood absence epilepsy. *Epilepsia*, 52(8), 1528-1167.
- Wahab A. (2010). Difficulties in treatment and management of epilepsy and challenges in new drug development. *Pharmaceuticals*, 3(7), 2090-2110.
- Wheless JW, Clarke DF, Carpenter D. (2005). Treatment of pediatric epilepsy: Expert opinion. *Journal of Child Neurology*, 20(Suppl 1), S1-S56.
- Wirrell EC, Camfield CS, Camfield PR, Dooley JM, Gordon KE, Smith B. (1997). Long-term psychosocial outcome in typical absence epilepsy: Sometimes a wolf in sheep's clothing. *Archives of Pediatrics & Adolescent Medicine*, 151(2), 152-158.
- Yamatsu A, Yamashita Y, Maru I, Yang J, Tatsuzaki J, Kim M. (2015). The improvement of sleep by oral intake of GABA and *Apocynum venetum* leaf extract. *Journal of Nutritional Science and Vitaminology*, 61(2), 182-187.
- Yoto A, Murao S, Motoki M, et al. (2011). Oral intake of γ -aminobutyric acid affects mood and activities of central nervous system during stressed condition induced by mental tasks. *Amino Acids*, 43(3), 1331-1337.