

FEEDING *Our* CHILDREN

A COMPREHENSIVE GUIDE *for* HAVING A HEALTHY, THRIVING CHILD
DURING THEIR FIRST THOUSAND DAYS *and Beyond*

THOMAS FLASS, MD, MS

FEEDING OUR CHILDREN – CHAPTER REFERENCES

This is the accompanying PDF document to the book *Feeding Our Children*. This document contains the numbered endnote references that correspond to the superscripted citations in each chapter. It is meant for the reader that wishes to pursue a particular topic more fully, or to examine the evidence supporting one of the concepts explored in this book.

This bibliography was created using a popular reference manager, so minor errors in citations may exist that were not caught during the editing process. Please excuse any such errors, as they were unintentional.

This document may be updated periodically if new supportive literature is published. Any new references will be added onto the end of the bibliography for the related chapter, and will be highlighted as such.

Endnotes

Chapter 1

1. Todd JN, Srinivasan S, Pollin TI. Advances in the Genetics of Youth-Onset Type 2 Diabetes. *Curr Diab Rep.* 2018;18(8). doi:10.1007/s11892-018-1025-1
2. Jensen ET, Dabelea D. Type 2 Diabetes in Youth: New Lessons from the SEARCH Study. *Curr Diab Rep.* 2018;18(6):1-7. doi:10.1007/s11892-018-0997-1
3. Mayer-Davis EJ, Lawrence JM, Dabelea D, et al. Incidence trends of type 1 and type 2 diabetes among youths, 2002-2012. *N Engl J Med.* 2017;376(15):1419-1429. doi:10.1056/NEJMoa1610187
4. Nadeau KJ, Anderson BJ, Berg EG, et al. Youth-Onset Type 2 Diabetes Consensus Report : Current Status , Challenges , and Priorities. 2016;39(September):1635-1642. doi:10.2337/dc16-1066
5. Grandjean P, Landrigan PJ. Neurobehavioural effects of developmental toxicity. *Lancet Neurol.* 2014. doi:10.1016/S1474-4422(13)70278-3
6. Grandjean P, Landrigan P. Developmental neurotoxicity of industrial chemicals. *Lancet.* 2006. doi:10.1016/S0140-6736(06)69665-7
7. Xu G, Strathearn L, Liu B, Yang B, Bao W. Twenty-Year Trends in Diagnosed Attention-Deficit/Hyperactivity Disorder Among US Children and Adolescents, 1997-2016. *JAMA Netw open.* 2018;1(4):e181471. doi:10.1001/jamanetworkopen.2018.1471
8. King SA, Casavant MJ, Spiller HA, Hodges NL, Chounthirath T, Smith GA. Pediatric ADHD Medication Exposures Reported to US Poison Control Centers. *Pediatrics.* 2018;141(6):20173872. www.aappublications.org/news. Accessed June 9, 2020.
9. Vieira SM, Pagovich OE, Kriegel MA. Diet, microbiota and autoimmune diseases. *Lupus.* 2014;23(6):518-526. doi:10.1177/0961203313501401
10. Rosser EC, Mauri C. A clinical update on the significance of the gut microbiota in systemic autoimmunity. *J Autoimmun.* 2016;74:85-93. doi:10.1016/j.jaut.2016.06.009
11. Xu H, Liu M, Cao J, et al. The Dynamic Interplay between the Gut Microbiota and Autoimmune Diseases. 2019. doi:10.1155/2019/7546047
12. Fasano A. Zonulin, regulation of tight junctions, and autoimmune diseases. *Ann N Y Acad Sci.* 2012;1258(1):25-33. doi:10.1111/j.1749-6632.2012.06538.x
13. Fasano A. Zonulin and its regulation of intestinal barrier function: The biological door to inflammation, autoimmunity, and cancer. *Physiol Rev.* 2011;91(1):151-175. doi:10.1152/physrev.00003.2008
14. Paruthi S, Brooks LJ, D'Ambrosio C, et al. Recommended Amount of Sleep for Pediatric Populations: A Consensus Statement of the American Academy of Sleep Medicine. *J Clin Sleep Med.* 2016;12(06):785-786. doi:10.5664/jcsm.5866

15. Recommended Amount of Sleep for Pediatric Populations. *Pediatrics*. 2016;138(2):e20161601-e20161601. doi:10.1542/peds.2016-1601
16. Krause AJ, Simon E Ben, Mander BA, et al. The sleep-deprived human brain. *Nat Rev Neurosci*. 2017;18(7):404-418. doi:10.1038/nrn.2017.55
17. Tähkämö L, Partonen T, Pesonen AK. Systematic review of light exposure impact on human circadian rhythm. *Chronobiol Int*. 2019. doi:10.1080/07420528.2018.1527773
18. Pall ML. Wi-Fi is an important threat to human health ☆. *Environ Res*. 2018;164(January):405-416. doi:10.1016/j.envres.2018.01.035
19. Pall ML. Microwave frequency electromagnetic fields (EMFs) produce widespread neuropsychiatric effects including depression. *J Chem Neuroanat*. 2016;75(Pt B):43-51. doi:10.1016/j.jchemneu.2015.08.001
20. Liu PZ, Nusslock R. Exercise-Mediated Neurogenesis in the Hippocampus via BDNF. *Front Neurosci*. 2018;12(FEB):52. doi:10.3389/fnins.2018.00052
21. Sleiman SF, Henry J, Al-Haddad R, et al. Exercise promotes the expression of brain derived neurotrophic factor (BDNF) through the action of the ketone body β - hydroxybutyrate. *Elife*. 2016;5(JUN2016). doi:10.7554/eLife.15092
22. Christiansen L, Beck MM, Bilenberg N, Wienecke J, Astrup A, Lundbye-Jensen J. Effects of Exercise on Cognitive Performance in Children and Adolescents with ADHD: Potential Mechanisms and Evidence-based Recommendations. *J Clin Med*. 2019;8(6):841. doi:10.3390/jcm8060841
23. Rethorst CD, Wipfli BM, Landers DM. The antidepressive effects of exercise: A meta-analysis of randomized trials. *Sport Med*. 2009;39(6):491-511. doi:10.2165/00007256-200939060-00004
24. Schuch FB, Vancampfort D, Richards J, Rosenbaum S, Ward PB, Stubbs B. Exercise as a treatment for depression: A meta-analysis adjusting for publication bias. *J Psychiatr Res*. 2016;77:42-51. doi:10.1016/j.jpsychires.2016.02.023
25. Cacioppo JT, Hawkley LC. Social Isolation and Health, with an Emphasis on Underlying Mechanisms. *Perspect Biol Med*. 2003;46:39-52. doi:10.1353/pbm.2003.0063
26. Mead MN. Benefits of sunlight: a bright spot for human health. *Environ Health Perspect*. 2008. doi:10.1289/ehp.116-a160
27. Holick MF. Biological effects of sunlight, ultraviolet radiation, visible light, infrared radiation and Vitamin D for health. In: *Anticancer Research*. ; 2016.
28. Twohig-Bennett C, Jones A. The health benefits of the great outdoors: A systematic review and meta-analysis of greenspace exposure and health outcomes. *Environ Res*. 2018;166:628-637. doi:10.1016/j.envres.2018.06.030
29. Bratman GN, Hamilton JP, Hahn KS, Daily GC, Gross JJ. Nature experience reduces rumination and subgenual prefrontal cortex activation. *Proc Natl Acad Sci U S A*. 2015;112(28):8567-8572. doi:10.1073/pnas.1510459112
30. White MP, Alcock I, Grellier J, et al. Spending at least 120 minutes a week in nature is associated with good health and wellbeing. *Sci Rep*. 2019;9(1):1-11. doi:10.1038/s41598-019-44097-3

Endnotes

Chapter 2

1. Linnér A, Almgren M. Epigenetic programming—The important first 1000 days. *Acta Paediatr.* 2020;109(3):443-452. doi:10.1111/apa.15050
2. Cusick SE, Georgieff MK. The Role of Nutrition in Brain Development: The Golden Opportunity of the “First 1000 Days.” *J Pediatr.* 2016. doi:10.1016/j.jpeds.2016.05.013
3. Schwarzenberg SJ, Georgieff MK. Advocacy for improving nutrition in the first 1000 days to support childhood development and adult health. *Pediatrics.* 2018. doi:10.1542/peds.2017-3716
4. Barker DJP, Osmond C. Infant mortality, childhood nutrition, and ischaemic heart disease in England and Wales. *Lancet.* 1986. doi:10.1016/S0140-6736(86)91340-1
5. Barker D. The fetal and infant origins of adult disease The womb may be more important than the home. *Bmj.* 1990.
6. Waterland RA, Michels KB. Epigenetic epidemiology of the developmental origins hypothesis. *Annu Rev Nutr.* 2007. doi:10.1146/annurev.nutr.27.061406.093705
7. Smith CJ, Ryckman KK. Epigenetic and developmental influences on the risk of obesity, diabetes, and metabolic syndrome. *Diabetes, Metab Syndr Obes Targets Ther.* 2015. doi:10.2147/DMSO.S61296
8. Mameli C, Mazzantini S, Zuccotti GV. Nutrition in the first 1000 days: The origin of childhood obesity. *Int J Environ Res Public Health.* 2016. doi:10.3390/ijerph13090838
9. Indrio F, Martini S, Francavilla R, et al. Epigenetic matters: The link between early nutrition, microbiome, and long-term health development. *Front Pediatr.* 2017. doi:10.3389/fped.2017.00178
10. Tiffon C. The impact of nutrition and environmental epigenetics on human health and disease. *Int J Mol Sci.* 2018;19(11). doi:10.3390/ijms19113425
11. Balbus JM, Barouki R, Birnbaum LS, et al. Early-life prevention of non-communicable diseases. *Lancet.* 2013. doi:10.1016/S0140-6736(12)61609-2
12. Feinberg AP. The key role of epigenetics in human disease prevention and mitigation. *N Engl J Med.* 2018. doi:10.1056/NEJMra1402513
13. Langley-Evans SC. Nutrition in early life and the programming of adult disease: A review. *J Hum Nutr Diet.* 2015. doi:10.1111/jhn.12212
14. Jazwiec PA, Sloboda DM. Nutritional adversity, sex and reproduction: 30 years of DOHaD and what have we learned? *J Endocrinol.* 2019. doi:10.1530/JOE-19-0048
15. Velazquez MA, Fleming TP, Watkins AJ. Periconceptional environment and the developmental origins of disease. *J Endocrinol.* 2019. doi:10.1530/JOE-18-0676

16. Franzago M, Fraticelli F, Stuppia L, Vitacolonna E. Nutrigenetics, epigenetics and gestational diabetes: consequences in mother and child. *Epigenetics*. 2019. doi:10.1080/15592294.2019.1582277
17. Vohr BR, Davis EP, Wanke CA, Krebs NF. Neurodevelopment: The impact of nutrition and inflammation during preconception and pregnancy in low-resource settings. *Pediatrics*. 2017. doi:10.1542/peds.2016-2828F
18. Warner BB. The contribution of the gut microbiome to neurodevelopment and neuropsychiatric disorders. *Pediatr Res*. 2019. doi:10.1038/s41390-018-0191-9
19. Dinan TG, Cryan JF. Gut instincts: microbiota as a key regulator of brain development, ageing and neurodegeneration. *J Physiol*. 2017;595(2):489-503. doi:10.1113/JP273106
20. Cryan JF, O’riordan KJ, Cowan CSM, et al. The microbiota-gut-brain axis. *Physiol Rev*. 2019. doi:10.1152/physrev.00018.2018
21. Poti JM, Braga B, Qin B. Ultra-processed Food Intake and Obesity: What Really Matters for Health-Processing or Nutrient Content? *Curr Obes Rep*. 2017;6(4):420-431. doi:10.1007/s13679-017-0285-4
22. Elizabeth L, Machado P, Zinöcker M, Baker P, Lawrence M. Ultra-processed foods and health outcomes: A narrative review. *Nutrients*. 2020. doi:10.3390/nu12071955
23. Kanherkar RR, Bhatia-Dey N, Csoka AB. Epigenetics across the human lifespan. *Front Cell Dev Biol*. 2014;2(SEP). doi:10.3389/fcell.2014.00049
24. Tiffon C. The impact of nutrition and environmental epigenetics on human health and disease. *Int J Mol Sci*. 2018. doi:10.3390/ijms19113425
25. Sales VM, Ferguson-Smith AC, Patti ME. Epigenetic Mechanisms of Transmission of Metabolic Disease across Generations. *Cell Metab*. 2017. doi:10.1016/j.cmet.2017.02.016
26. Yamada H, Munetsuna E, Ohashi K. Handbook of Nutrition, Diet, and Epigenetics. *Handb Nutr Diet, Epigenetics*. 2017:1-17. doi:10.1007/978-3-319-31143-2
27. Saad AF, Dickerson J, Kechichian TB, et al. High-fructose diet in pregnancy leads to fetal programming of hypertension, insulin resistance, and obesity in adult offspring. *Am J Obstet Gynecol*. 2016. doi:10.1016/j.ajog.2016.03.038
28. Regnault TR, Gentili S, Sarr O, Toop CR, Sloboda DM. Fructose, pregnancy and later life impacts. *Clin Exp Pharmacol Physiol*. 2013. doi:10.1111/1440-1681.12162
29. Bishop KS, Ferguson LR. The interaction between epigenetics, nutrition and the development of cancer. *Nutrients*. 2015. doi:10.3390/nu7020922
30. Cani PD. Human gut microbiome: Hopes, threats and promises. *Gut*. 2018. doi:10.1136/gutjnl-2018-316723
31. Slavin J. Fiber and prebiotics: Mechanisms and health benefits. *Nutrients*. 2013;5(4):1417-1435. doi:10.3390/nu5041417
32. Sook Lee E, Ji Song E, Do Nam Y. Dysbiosis of Gut Microbiome and Its Impact on Epigenetic Regulation. *J Clin Epigenetics*. 2017;03(02):1-7. doi:10.21767/2472-1158.100048

33. Valdes AM, Walter J, Segal E, Spector TD. Role of the gut microbiota in nutrition and health. *BMJ*. 2018. doi:10.1136/bmj.k2179
34. Kho ZY, Lal SK. The human gut microbiome - A potential controller of wellness and disease. *Front Microbiol*. 2018. doi:10.3389/fmicb.2018.01835
35. Lloyd-Price J, Abu-Ali G, Huttenhower C. The healthy human microbiome. 2016. doi:10.1186/s13073-016-0307-y
36. Dominguez-Bello MG, Godoy-Vitorino F, Knight R, Blaser MJ. Role of the microbiome in human development. *Gut*. 2019. doi:10.1136/gutjnl-2018-317503
37. Thomas S, Izard J, Walsh E, et al. The host microbiome regulates and maintains human health: A primer and perspective for non-microbiologists. *Cancer Res*. 2017;77(8):1783-1812. doi:10.1158/0008-5472.CAN-16-2929
38. Payne MS, Bayatibojakhi S, Shen B. Exploring preterm birth as a polymicrobial disease: an overview of the uterine microbiome. 2014. doi:10.3389/fimmu.2014.00595
39. Stinson LF, Boyce MC, Payne MS, Keelan JA. The not-so-sterile womb: Evidence that the human fetus is exposed to bacteria prior to birth. *Front Microbiol*. 2019;10(JUN):1124. doi:10.3389/fmicb.2019.01124
40. Stinson L, Hallingström M, Barman M, et al. Comparison of Bacterial DNA Profiles in Mid-Trimester Amniotic Fluid Samples From Preterm and Term Deliveries. *Front Microbiol*. 2020;11:415. doi:10.3389/fmicb.2020.00415
41. Singh RK, Chang HW, Yan D, et al. Influence of diet on the gut microbiome and implications for human health. *J Transl Med*. 2017;15(1). doi:10.1186/s12967-017-1175-y
42. Arrieta MC, Stiemsma LT, Amenyogbe N, Brown E, Finlay B. The intestinal microbiome in early life: Health and disease. *Front Immunol*. 2014;5(AUG). doi:10.3389/fimmu.2014.00427

Endnotes

Chapter 3

1. Cani PD. Human gut microbiome: Hopes, threats and promises. *Gut*. 2018. doi:10.1136/gutjnl-2018-316723
2. Kho ZY, Lal SK. The human gut microbiome - A potential controller of wellness and disease. *Front Microbiol*. 2018. doi:10.3389/fmicb.2018.01835
3. Thomas S, Izard J, Walsh E, et al. The host microbiome regulates and maintains human health: A primer and perspective for non-microbiologists. *Cancer Res*. 2017;77(8):1783-1812. doi:10.1158/0008-5472.CAN-16-2929
4. Jandhyala SM, Talukdar R, Subramanyam C, Vuyyuru H, Sasikala M, Reddy DN. Role of the normal gut microbiota. *World J Gastroenterol*. 2015. doi:10.3748/wjg.v21.i29.8787
5. Mohajeri MH, Brummer RJM, Rastall RA, et al. The role of the microbiome for human health: from basic science to clinical applications. *Eur J Nutr*. 2018;57(1):1-14. doi:10.1007/s00394-018-1703-4
6. Bermudez-Brito M, Plaza-Díaz J, Muñoz-Quezada S, Gómez-Llorente C, Gil A. Probiotic mechanisms of action. *Ann Nutr Metab*. 2012. doi:10.1159/000342079
7. Ruellemele FM, Bier D, Marteau P, et al. Clinical evidence for immunomodulatory effects of probiotic bacteria. *J Pediatr Gastroenterol Nutr*. 2009. doi:10.1097/MPG.0b013e31817d80ca
8. Swartwout B, Luo XM. Implications of Probiotics on the Maternal-Neonatal Interface: Gut Microbiota, Immunomodulation, and Autoimmunity. *Front Immunol*. 2018. doi:10.3389/fimmu.2018.02840
9. Logan AC, Jacka FN, Prescott SL. Immune-Microbiota Interactions: Dysbiosis as a Global Health Issue. *Curr Allergy Asthma Rep*. 2016. doi:10.1007/s11882-015-0590-5
10. Prescott SL, Björkstén B. Probiotics for the prevention or treatment of allergic diseases. *J Allergy Clin Immunol*. 2007. doi:10.1016/j.jaci.2007.04.027
11. Belkaid Y, Hand TW. Role of the microbiota in immunity and inflammation. *Cell*. 2014. doi:10.1016/j.cell.2014.03.011
12. Cuello-Garcia CA, Brozek JL, Fiocchi A, et al. Probiotics for the prevention of allergy: A systematic review and meta-analysis of randomized controlled trials. *J Allergy Clin Immunol*. 2015. doi:10.1016/j.jaci.2015.04.031
13. Zhang GQ, Hu HJ, Liu CY, Zhang Q, Shakya S, Li ZY. Probiotics for prevention of atopy and food hypersensitivity in early childhood A PRISMA-compliant systematic review and meta-analysis of randomized controlled trials. *Med (United States)*. 2016. doi:10.1097/MD.0000000000002562
14. André P, Laugerette F, Féart C. Metabolic endotoxemia: A potential underlying mechanism of the relationship between dietary fat intake and risk for cognitive impairments in humans? *Nutrients*. 2019;11(8). doi:10.3390/nu11081887
15. Bailey MA, Holscher HD. Microbiome-mediated effects of the Mediterranean diet on inflammation. *Adv Nutr*. 2018. doi:10.1093/advances/nmy013

16. Kelly JR, Kennedy PJ, Cryan JF, Dinan TG, Clarke G, Hyland NP. Breaking down the barriers: The gut microbiome, intestinal permeability and stress-related psychiatric disorders. *Front Cell Neurosci.* 2015;9(OCT):392. doi:10.3389/fncel.2015.00392
17. Fasano A. Zonulin and its regulation of intestinal barrier function: The biological door to inflammation, autoimmunity, and cancer. *Physiol Rev.* 2011;91(1):151-175. doi:10.1152/physrev.00003.2008
18. Fasano A. Zonulin, regulation of tight junctions, and autoimmune diseases. *Ann N Y Acad Sci.* 2012;1258(1):25-33. doi:10.1111/j.1749-6632.2012.06538.x
19. Esnafoglu E, Cirrik S, Ayyıldız SN, et al. Increased Serum Zonulin Levels as an Intestinal Permeability Marker in Autistic Subjects. *J Pediatr.* 2017. doi:10.1016/j.jpeds.2017.04.004
20. Farré R, Fiorani M, Abdu Rahiman S, Matteoli G. Intestinal Permeability, Inflammation and the Role of Nutrients. *Nutrients.* 2020;12(4):1185. doi:10.3390/nu12041185
21. Fiorentino M, Sapone A, Senger S, et al. Blood-brain barrier and intestinal epithelial barrier alterations in autism spectrum disorders. *Mol Autism.* 2016. doi:10.1186/s13229-016-0110-z
22. König J, Wells J, Cani PD, et al. Human intestinal barrier function in health and disease. *Clin Transl Gastroenterol.* 2016. doi:10.1038/ctg.2016.54
23. Odenwald MA, Turner JR. The intestinal epithelial barrier: A therapeutic target? *Nat Rev Gastroenterol Hepatol.* 2017. doi:10.1038/nrgastro.2016.169
24. de Punder K, Pruimboom L. The dietary intake of wheat and other cereal grains and their role in inflammation. *Nutrients.* 2013. doi:10.3390/nu5030771
25. Bron PA, Kleerebezem M, Brummer RJ, et al. Can probiotics modulate human disease by impacting intestinal barrier function? *Br J Nutr.* 2017. doi:10.1017/S0007114516004037
26. Krishna Rao R, Samak G. Protection and Restitution of Gut Barrier by Probiotics: Nutritional and Clinical Implications. *Curr Nutr Food Sci.* 2013. doi:10.2174/1573401311309020004
27. Martín R, Chamignon C, Mhedbi-Hajri N, et al. The potential probiotic *Lactobacillus rhamnosus* CNCM I-3690 strain protects the intestinal barrier by stimulating both mucus production and cytoprotective response. *Sci Rep.* 2019. doi:10.1038/s41598-019-41738-5
28. Wilson Tang WH, Hazen SL. The Gut Microbiome and Its Role in Cardiovascular Diseases. *Circulation.* 2017. doi:10.1161/CIRCULATIONAHA.116.024251
29. Alhmoud T, Kumar A, Lo CC, et al. Investigating intestinal permeability and gut microbiota roles in acute coronary syndrome patients. *Hum Microbiome J.* 2019;13:100059. doi:10.1016/j.humic.2019.100059
30. Alexander C, Swanson KS, Fahey GC, Garleb KA. Perspective: Physiologic Importance of Short-Chain Fatty Acids from Nondigestible Carbohydrate Fermentation. *Adv Nutr.* 2019. doi:10.1093/advances/nmz004
31. Dalile B, Van Oudenhove L, Vervliet B, Verbeke K. The role of short-chain fatty acids in microbiota–gut–brain communication. *Nat Rev Gastroenterol Hepatol.* 2019;16(8):461-478. doi:10.1038/s41575-019-0157-3

32. Gill PA, van Zelm MC, Muir JG, Gibson PR. Review article: short chain fatty acids as potential therapeutic agents in human gastrointestinal and inflammatory disorders. *Aliment Pharmacol Ther.* 2018. doi:10.1111/apt.14689
33. Scheppach W, Sommer H, Kirchner T, et al. Effect of butyrate enemas on the colonic mucosa in distal ulcerative colitis. *Gastroenterology.* 1992. doi:10.1016/0016-5085(92)91094-K
34. Steinhart AH, Hiruki T, Brzezinski A, Baker JP. Treatment of left-sided ulcerative colitis with butyrate enemas: A controlled trial. *Aliment Pharmacol Ther.* 1996. doi:10.1046/j.1365-2036.1996.d01-509.x
35. Gomes SD, Oliveira CS, Azevedo-Silva J, et al. The Role of Diet Related Short-Chain Fatty Acids in Colorectal Cancer Metabolism and Survival: Prevention and Therapeutic Implications. *Curr Med Chem.* 2018;27(24):4087-4108. doi:10.2174/0929867325666180530102050
36. McNabney SM, Henagan TM. Short chain fatty acids in the colon and peripheral tissues: A focus on butyrate, colon cancer, obesity and insulin resistance. *Nutrients.* 2017;9(12):1348. doi:10.3390/nu9121348
37. Saad MJA, Santos A, Prada PO. Linking gut microbiota and inflammation to obesity and insulin resistance. *Physiology.* 2016. doi:10.1152/physiol.00041.2015
38. Sanna S, van Zuydam NR, Mahajan A, et al. Causal relationships among the gut microbiome, short-chain fatty acids and metabolic diseases. *Nat Genet.* 2019. doi:10.1038/s41588-019-0350-x
39. Chambers ES, Preston T, Frost G, Morrison DJ. Role of Gut Microbiota-Generated Short-Chain Fatty Acids in Metabolic and Cardiovascular Health. *Curr Nutr Rep.* 2018. doi:10.1007/s13668-018-0248-8
40. Canfora EE, Jocken JW, Blaak EE. Short-chain fatty acids in control of body weight and insulin sensitivity. *Nat Rev Endocrinol.* 2015. doi:10.1038/nrendo.2015.128
41. Tan J, McKenzie C, Potamitis M, Thorburn AN, Mackay CR, Macia L. The Role of Short-Chain Fatty Acids in Health and Disease. In: *Advances in Immunology.* Vol 121. Academic Press Inc.; 2014:91-119. doi:10.1016/B978-0-12-800100-4.00003-9
42. Li M, van Esch BCAM, Wagenaar GTM, Garssen J, Folkerts G, Henricks PAJ. Pro- and anti-inflammatory effects of short chain fatty acids on immune and endothelial cells. *Eur J Pharmacol.* 2018;831:52-59. doi:10.1016/j.ejphar.2018.05.003
43. Feng Q, Chen WD, Wang YD. Gut microbiota: An integral moderator in health and disease. *Front Microbiol.* 2018. doi:10.3389/fmicb.2018.00151
44. Schmulson MJ, Drossman DA. What is new in Rome IV. *J Neurogastroenterol Motil.* 2017;23(2):151-163. doi:10.5056/jnm16214
45. Warner BB. The contribution of the gut microbiome to neurodevelopment and neuropsychiatric disorders. *Pediatr Res.* 2019. doi:10.1038/s41390-018-0191-9
46. Dinan TG, Cryan JF. Gut instincts: microbiota as a key regulator of brain development, ageing and neurodegeneration. *J Physiol.* 2017;595(2):489-503. doi:10.1113/JP273106
47. Cryan JF, O’riordan KJ, Cowan CSM, et al. The microbiota-gut-brain axis. *Physiol Rev.* 2019. doi:10.1152/physrev.00018.2018

48. Koopman M, Daniels JK, Spitzer C, Lampe A, El Aidy S. Depressed gut? the microbiota-diet-inflammation triologue in depression. *Curr Opin Psychiatry*. 2017. doi:10.1097/YCO.0000000000000350
49. Kang DW, Adams JB, Gregory AC, et al. Microbiota Transfer Therapy alters gut ecosystem and improves gastrointestinal and autism symptoms: An open-label study. *Microbiome*. 2017. doi:10.1186/s40168-016-0225-7
50. Sharon G, Cruz NJ, Kang DW, et al. Human Gut Microbiota from Autism Spectrum Disorder Promote Behavioral Symptoms in Mice. *Cell*. 2019. doi:10.1016/j.cell.2019.05.004
51. Kang DW, Adams JB, Coleman DM, et al. Long-term benefit of Microbiota Transfer Therapy on autism symptoms and gut microbiota. *Sci Rep*. 2019. doi:10.1038/s41598-019-42183-0
52. Heijtz RD, Wang S, Anuar F, et al. Normal gut microbiota modulates brain development and behavior. *Proc Natl Acad Sci U S A*. 2011. doi:10.1073/pnas.1010529108
53. Cryan JF, O’Riordan KJ, Sandhu K, Peterson V, Dinan TG. The gut microbiome in neurological disorders. *Lancet Neurol*. 2020. doi:10.1016/S1474-4422(19)30356-4
54. V. O, C.R. M, E.A. M. The Gut–Brain Axis and the Microbiome: Mechanisms and Clinical Implications. *Clin Gastroenterol Hepatol*. 2019. doi:10.1016/j.cgh.2018.
55. Martin CR, Osadchiy V, Kalani A, Mayer EA. The Brain-Gut-Microbiome Axis. *CMGH*. 2018. doi:10.1016/j.jcmgh.2018.04.003
56. Mayer EA, Knight R, Mazmanian SK, Cryan JF, Tillisch K. Gut microbes and the brain: Paradigm shift in neuroscience. *J Neurosci*. 2014. doi:10.1523/JNEUROSCI.3299-14.2014
57. Rieder R, Wisniewski PJ, Alderman BL, Campbell SC. Brain , Behavior , and Immunity Microbes and mental health : A review. *Brain Behav Immun*. 2019;66(2017):9-17. doi:10.1016/j.bbi.2017.01.016
58. Cenit MC, Campillo I, Pilar N, Franch C, Dinan TG, Sanz Y. Gut microbiota and attention deficit hyperactivity disorder : new perspectives for a challenging condition. 2017:1081-1092. doi:10.1007/s00787-017-0969-z
59. Cenit MC, Sanz Y, Codoñer-Franch P. Influence of gut microbiota on neuropsychiatric disorders. *World J Gastroenterol*. 2017. doi:10.3748/wjg.v23.i30.5486
60. Gu Q, Li P. Biosynthesis of Vitamins by Probiotic Bacteria. In: *Probiotics and Prebiotics in Human Nutrition and Health*. ; 2016. doi:10.5772/63117
61. Cao H, Liu X, An Y, et al. Dysbiosis contributes to chronic constipation development via regulation of serotonin transporter in the intestine. *Sci Rep*. 2017;7(1):1-12. doi:10.1038/s41598-017-10835-8
62. Ohkusa T, Koido S, Nishikawa Y, Sato N. Gut microbiota and chronic constipation: A review and update. *Front Med*. 2019;6(FEB):1-9. doi:10.3389/fmed.2019.00019
63. Quigley EMM. Probiotics in the management of colonic disorders. *Curr Gastroenterol Rep*. 2007. doi:10.1007/s11894-007-0055-7
64. Picard C, Fioramonti J, Francois A, Robinson T, Neant F, Matuchansky C. Review article: Bifidobacteria as probiotic agents - Physiological effects and clinical benefits. *Aliment Pharmacol Ther*. 2005. doi:10.1111/j.1365-2036.2005.02615.x

65. Suri J, Kataria R, Malik Z, Parkman HP, Schey R. Elevated methane levels in small intestinal bacterial overgrowth suggests delayed small bowel and colonic transit. *Med (United States)*. 2018. doi:10.1097/MD.00000000000010554
66. Triantafyllou K, Chang C, Pimentel M. Methanogens, methane and gastrointestinal motility. *J Neurogastroenterol Motil*. 2014. doi:10.5056/jnm.2014.20.1.31
67. Pimentel M, Gunsalus RP, Rao SS, Zhang H. Methanogens in Human Health and Disease. *Am J Gastroenterol Suppl*. 2012. doi:10.1038/ajgsup.2012.6
68. Indrio F, Martini S, Francavilla R, et al. Epigenetic matters: The link between early nutrition, microbiome, and long-term health development. *Front Pediatr*. 2017. doi:10.3389/fped.2017.00178
69. Sook Lee E, Ji Song E, Do Nam Y. Dysbiosis of Gut Microbiome and Its Impact on Epigenetic Regulation. *J Clin Epigenetics*. 2017;03(02):1-7. doi:10.21767/2472-1158.100048
70. Paul B, Barnes S, Demark-Wahnefried W, et al. Influences of diet and the gut microbiome on epigenetic modulation in cancer and other diseases. *Clin Epigenetics*. 2015. doi:10.1186/s13148-015-0144-7
71. Lee HS. The interaction between gut microbiome and nutrients on development of human disease through epigenetic mechanisms. *Genomics and Informatics*. 2019. doi:10.5808/GI.2019.17.3.e24

Endnotes

Chapter 4

1. Darabi B, Rahmati S, Hafeziahmadi MR, Badfar G, Azami M. The association between caesarean section and childhood asthma: an updated systematic review and meta-analysis. *Allergy Asthma Clin Immunol.* 2019;15:62. doi:10.1186/s13223-019-0367-9
2. Blustein J, Liu J. Time to consider the risks of caesarean delivery for long term child health. *BMJ.* 2015. doi:10.1136/bmj.h2410
3. Cardwell CR, Stene LC, Joner G, et al. Caesarean section is associated with an increased risk of childhood-onset type 1 diabetes mellitus: A meta-analysis of observational studies. *Diabetologia.* 2008;51(5):726-735. doi:10.1007/s00125-008-0941-z
4. Bager P, Simonsen J, Nielsen NM, Frisch M. Cesarean section and offspring's risk of inflammatory bowel disease: A national cohort study. *Inflamm Bowel Dis.* 2012. doi:10.1002/ibd.21805
5. Li H-T, Zhou Y-B, Liu J-M. The impact of cesarean section on offspring overweight and obesity: a systematic review and meta-analysis. *Int J Obes.* 2013;37:893-899. doi:10.1038/ijo.2012.195
6. Neu J, Rushing J. Cesarean Versus Vaginal Delivery: Long-term Infant Outcomes and the Hygiene Hypothesis. *Clin Perinatol.* 2011. doi:10.1016/j.clp.2011.03.008
7. Keag OE, Norman JE, Stock SJ. Long-term risks and benefits associated with cesarean delivery for mother, baby, and subsequent pregnancies: Systematic review and meta-analysis. *PLoS Med.* 2018. doi:10.1371/journal.pmed.1002494
8. Sandall J, Tribe RM, Avery L, et al. Short-term and long-term effects of caesarean section on the health of women and children. *Lancet.* 2018. doi:10.1016/S0140-6736(18)31930-5
9. Sevelsted A, Stokholm J, Bønnelykke K, Bisgaard H. Cesarean section chronic immune disorders. *Pediatrics.* 2015. doi:10.1542/peds.2014-0596
10. Sevelsted A, Stokholm J, Bisgaard H. Risk of Asthma from Cesarean Delivery Depends on Membrane Rupture. *J Pediatr.* 2016. doi:10.1016/j.jpeds.2015.12.066
11. Polidano C, Zhu A, Bornstein JC. The relation between cesarean birth and child cognitive development. *Sci Rep.* 2017. doi:10.1038/s41598-017-10831-y
12. Zhang T, Sidorchuk A, Sevilla-Cermeño L, et al. Association of Cesarean Delivery With Risk of Neurodevelopmental and Psychiatric Disorders in the Offspring: A Systematic Review and Meta-analysis. *JAMA Netw open.* 2019;2(8):e1910236. doi:10.1001/jamanetworkopen.2019.10236
13. Dominguez-Bello MG, Godoy-Vitorino F, Knight R, Blaser MJ. Role of the microbiome in human development. *Gut.* 2019. doi:10.1136/gutjnl-2018-317503
14. Mueller NT, Bakacs E, Combellick J, Grigoryan Z, Dominguez-Bello MG. The infant microbiome development: Mom matters. *Trends Mol Med.* 2015. doi:10.1016/j.molmed.2014.12.002
15. Moya-Pérez A, Luczynski P, Renes IB, et al. Intervention strategies for cesarean section- induced alterations in the microbiota-gut-brain axis. *Nutr Rev.* 2017. doi:10.1093/nutrit/nuw069

16. Korpela K, Salonen A, Vepsäläinen O, et al. Probiotic supplementation restores normal microbiota composition and function in antibiotic-treated and in caesarean-born infants. *Microbiome*. 2018. doi:10.1186/s40168-018-0567-4
17. Dominguez-Bello MG, De Jesus-Laboy KM, Shen N, et al. Partial restoration of the microbiota of caesarean-born infants via vaginal microbial transfer. *Nat Med*. 2016. doi:10.1038/nm.4039
18. Dominguez-Bello MG. Gestational shaping of the maternal vaginal microbiome. *Nat Med*. 2019. doi:10.1038/s41591-019-0483-6
19. Janvier A, Malo J, Barrington KJ. Cohort study of probiotics in a North American neonatal intensive care unit. *J Pediatr*. 2014. doi:10.1016/j.jpeds.2013.11.025
20. Zhang GQ, Hu HJ, Liu CY, Shakya S, Li ZY. Probiotics for preventing late-onset sepsis in preterm neonates a PRISMA-compliant systematic review and meta-analysis of randomized controlled trials. *Med (United States)*. 2016. doi:10.1097/MD.0000000000002581
21. Thomas JP, Raine T, Reddy S, Belteki G. Probiotics for the prevention of necrotising enterocolitis in very low-birth-weight infants: a meta-analysis and systematic review. *Acta Paediatr Int J Paediatr*. 2017. doi:10.1111/apa.13902
22. Chang HY, Chen JH, Chang JH, Lin HC, Lin CY, Peng CC. Multiple strains probiotics appear to be the most effective probiotics in the prevention of necrotizing enterocolitis and mortality: An updated meta-analysis. *PLoS One*. 2017. doi:10.1371/journal.pone.0171579
23. Athalye-Jape G, Deshpande G, Rao S, Patole S. Benefits of probiotics on enteral nutrition in preterm neonates: A systematic review. *Am J Clin Nutr*. 2014. doi:10.3945/ajcn.114.092551
24. Sun J, Marwah G, Westgarth M, Buys N, Ellwood D, Gray PH. Effects of probiotics on necrotizing enterocolitis, sepsis, intraventricular hemorrhage, mortality, length of hospital stay, and weight gain in very preterm infants: A meta-analysis. *Adv Nutr*. 2017. doi:10.3945/an.116.014605
25. Lau CSM, Chamberlain RS. Probiotic administration can prevent necrotizing enterocolitis in preterm infants: A meta-analysis. *J Pediatr Surg*. 2015. doi:10.1016/j.jpedsurg.2015.05.008
26. Underwood MA. Probiotics and the prevention of necrotizing enterocolitis. *J Pediatr Surg*. 2019. doi:10.1016/j.jpedsurg.2018.08.055
27. Moossavi S, Miliku K, Sepehri S, Khafipour E, Azad MB. The prebiotic and probiotic properties of human milk: Implications for infant immune development and pediatric asthma. *Front Pediatr*. 2018. doi:10.3389/fped.2018.00197
28. van den Elsen LWJ, Garssen J, Burcelin R, Verhasselt V. Shaping the gut microbiota by breastfeeding: The gateway to allergy prevention? *Front Pediatr*. 2019. doi:10.3389/fped.2019.00047
29. Forbes JD, Azad MB, Vehling L, et al. Association of exposure to formula in the hospital and subsequent infant feeding practices with gut microbiota and risk of overweight in the first year of life. *JAMA Pediatr*. 2018. doi:10.1001/jamapediatrics.2018.1161
30. Mueller E, Blaser M. Breast milk, formula, the microbiome and overweight. *Nat Rev Endocrinol*. 2018. doi:10.1038/s41574-018-0066-5
31. O’Sullivan A, Farver M, Smilowitz JT. The Influence of early infant-feeding practices on the intestinal microbiome and body composition in infants. *Nutr Metab Insights*. 2015. doi:10.4137/NMI.S29530

32. David LA, Maurice CF, Carmody RN, et al. Diet rapidly and reproducibly alters the human gut microbiome. *Nature*. 2014. doi:10.1038/nature12820
33. Turnbaugh PJ, Ridaura VK, Faith JJ, Rey FE, Knight R, Gordon JI. The effect of diet on the human gut microbiome: A metagenomic analysis in humanized gnotobiotic mice. *Sci Transl Med*. 2009. doi:10.1126/scitranslmed.3000322
34. Lambertz J, Weiskirchen S, Landert S, Weiskirchen R. Fructose: A dietary sugar in crosstalk with microbiota contributing to the development and progression of non-alcoholic liver disease. *Front Immunol*. 2017. doi:10.3389/fimmu.2017.01159
35. Zinöcker MK, Lindseth IA. The western diet–microbiome–host interaction and its role in metabolic disease. *Nutrients*. 2018. doi:10.3390/nu10030365
36. Kronman MP, Zaoutis TE, Haynes K, Feng R, Coffin SE. Antibiotic exposure and IBD development among children: A population-based cohort study. *Pediatrics*. 2012. doi:10.1542/peds.2011-3886
37. Vangay P, Ward T, Gerber JS, Knights D. Cell Host & Microbe Perspective Antibiotics, Pediatric Dysbiosis, and Disease. *Cell Host Microbe*. 2015. doi:10.1016/j.chom.2015.04.006
38. Sultan AA, Mallen C, Muller S, et al. Antibiotic use and the risk of rheumatoid arthritis: A population-based case-control study. *BMC Med*. 2019;17(1). doi:10.1186/s12916-019-1394-6
39. Schulfer A, Blaser MJ. Risks of Antibiotic Exposures Early in Life on the Developing Microbiome. *PLoS Pathog*. 2015. doi:10.1371/journal.ppat.1004903
40. Shen NT, Maw A, Tmanova LL, et al. Timely Use of Probiotics in Hospitalized Adults Prevents *Clostridium difficile* Infection: A Systematic Review With Meta-Regression Analysis. *Gastroenterology*. 2017;152(8):1889-1900.e9. doi:10.1053/j.gastro.2017.02.003
41. Agyare C, Etsiapa Boamah V, Ngofi Zumbi C, Boateng Osei F. Antibiotic Use in Poultry Production and Its Effects on Bacterial Resistance. In: *Antimicrobial Resistance - A Global Threat*. IntechOpen; 2019. doi:10.5772/intechopen.79371
42. Riley LW, Raphael E, Faerstein E. Obesity in the United States - dysbiosis from exposure to low-dose antibiotics? *Front Public Heal*. 2013;1(DEC). doi:10.3389/fpubh.2013.00069
43. Liang Y, Zhan J, Liu D, et al. Organophosphorus pesticide chlorpyrifos intake promotes obesity and insulin resistance through impacting gut and gut microbiota. *Microbiome*. 2019. doi:10.1186/s40168-019-0635-4
44. Yuan X, Pan Z, Jin C, Ni Y, Fu Z, Jin Y. Gut microbiota: An underestimated and unintended recipient for pesticide-induced toxicity. *Chemosphere*. 2019;227:425-434. doi:10.1016/j.chemosphere.2019.04.088
45. Pistiner M, Gold DR, Abdulkarim H, Hoffman E, Celedón JC. Birth by cesarean section, allergic rhinitis, and allergic sensitization among children with a parental history of atopy. *J Allergy Clin Immunol*. 2008;122(2). doi:10.1016/j.jaci.2008.05.007
46. Brandão HV, Vieira GO, de Oliveira Vieira T, et al. Increased risk of allergic rhinitis among children delivered by cesarean section: A cross-sectional study nested in a birth cohort. *BMC Pediatr*. 2016;16(1). doi:10.1186/s12887-016-0594-x
47. Bager P, Wohlfahrt J, Westergaard T. Caesarean delivery and risk of atopy and allergic disease: Meta-analyses. *Clin Exp Allergy*. 2008;38(4). doi:10.1111/j.1365-2222.2008.02939.x
48. Kuhle S, Tong OS, Woolcott CG. Association between caesarean section and childhood obesity: A

- systematic review and meta-analysis. *Obes Rev.* 2015;16(4). doi:10.1111/obr.12267
49. Słabuszewska-Józwiak A, Szymański JK, Ciebiera M, Sarecka-Hujar B, Jakiel G. Pediatrics consequences of caesarean section—a systematic review and meta-analysis. *Int J Environ Res Public Health.* 2020;17(21). doi:10.3390/ijerph17218031
50. Mueller NT, Zhang M, Hoyo C, Østbye T, Benjamin-Neelon SE. Does cesarean delivery impact infant weight gain and adiposity over the first year of life? *Int J Obes.* 2019;43(8). doi:10.1038/s41366-018-0239-2

Endnotes

Chapter 5

1. Berkowitz C, Mosconi L, Scheyer O, Rahman A, Hristov H, Isaacson R. Precision Medicine for Alzheimer’s Disease Prevention. *Healthcare*. 2018. doi:10.3390/healthcare6030082
2. Forrest SJ, Georger B, Janeway KA. Precision medicine in pediatric oncology. *Curr Opin Pediatr*. 2018. doi:10.1097/MOP.0000000000000570
3. Collins FS, Varmus H. A new initiative on precision medicine. *N Engl J Med*. 2015. doi:10.1056/NEJMp1500523
4. Baldassarre ME, Di Mauro A, Tafuri S, et al. Effectiveness and safety of a probiotic-mixture for the treatment of infantile colic: A double-blind, randomized, placebo-controlled clinical trial with fecal real-time PCR and NMR-Based metabolomics analysis. *Nutrients*. 2018;10(2). doi:10.3390/nu10020195
5. Zhang GQ, Hu HJ, Liu CY, Shakya S, Li ZY. Probiotics for preventing late-onset sepsis in preterm neonates a PRISMA-compliant systematic review and meta-analysis of randomized controlled trials. *Med (United States)*. 2016. doi:10.1097/MD.0000000000002581
6. Thomas JP, Raine T, Reddy S, Belteki G. Probiotics for the prevention of necrotising enterocolitis in very low-birth-weight infants: a meta-analysis and systematic review. *Acta Paediatr Int J Paediatr*. 2017. doi:10.1111/apa.13902
7. Chang HY, Chen JH, Chang JH, Lin HC, Lin CY, Peng CC. Multiple strains probiotics appear to be the most effective probiotics in the prevention of necrotizing enterocolitis and mortality: An updated meta-analysis. *PLoS One*. 2017. doi:10.1371/journal.pone.0171579
8. Vandevusse L, Hanson L, Safdar N. Perinatal outcomes of prenatal probiotic and prebiotic administration: An integrative review. *J Perinat Neonatal Nurs*. 2013. doi:10.1097/JPN.0b013e3182a1e15d
9. Zmora N, Zilberman-Schapira G, Suez J, et al. Personalized Gut Mucosal Colonization Resistance to Empiric Probiotics Is Associated with Unique Host and Microbiome Features. *Cell*. 2018. doi:10.1016/j.cell.2018.08.041
10. Pasolli E, De Filippis F, Mauriello IE, et al. Large-scale genome-wide analysis links lactic acid bacteria from food with the gut microbiome. *Nat Commun*. 2020;11(1):1-12. doi:10.1038/s41467-020-16438-8
11. De Filippis F, Pasolli E, Ercolini D. The food-gut axis: lactic acid bacteria and their link to food, the gut microbiome and human health. *FEMS Microbiol Rev*. 2020. doi:10.1093/femsre/fuaa015
12. Suez J, Zmora N, Zilberman-Schapira G, et al. Post-Antibiotic Gut Mucosal Microbiome Reconstitution Is Impaired by Probiotics and Improved by Autologous FMT. *Cell*. 2018. doi:10.1016/j.cell.2018.08.047
13. Guo Q, Goldenberg JZ, Humphrey C, El Dib R, Johnston BC. Probiotics for the prevention of pediatric antibiotic-associated diarrhea. *Cochrane Database Syst Rev*. April 2019. doi:10.1002/14651858.cd004827.pub5

14. Blaabjerg S, Artzi DM, Aabenhus R. Probiotics for the prevention of antibiotic-associated diarrhea in outpatients—A systematic review and meta-analysis. *Antibiotics*. 2017;6(4). doi:10.3390/antibiotics6040021
15. Hempel S, Newberry SJ, Maher AR, et al. Probiotics for the prevention and treatment of antibiotic-associated diarrhea: A systematic review and meta-analysis. *JAMA - J Am Med Assoc*. 2012. doi:10.1001/jama.2012.3507
16. Didari T, Mozaffari S, Nikfar S, Abdollahi M. Effectiveness of probiotics in irritable bowel syndrome: Updated systematic review with meta-analysis. *World J Gastroenterol*. 2015;21(10):3072-3084. doi:10.3748/wjg.v21.i10.3072
17. Li B, Liang L, Deng H, Guo J, Shu H, Zhang L. Efficacy and safety of probiotics in irritable bowel syndrome: A systematic review and meta-analysis. *Front Pharmacol*. 2020;11:332. doi:10.3389/fphar.2020.00332
18. Wen Y, Li J, Long Q, Yue C chi, He B, Tang X gui. The efficacy and safety of probiotics for patients with constipation-predominant irritable bowel syndrome: A systematic review and meta-analysis based on seventeen randomized controlled trials. *Int J Surg*. 2020;79:111-119. doi:10.1016/j.ijssu.2020.04.063
19. Ishaque SM, Khosruzzaman SM, Ahmed DS, Sah MP. A randomized placebo-controlled clinical trial of a multi-strain probiotic formulation (Bio-Kult®) in the management of diarrhea-predominant irritable bowel syndrome. *BMC Gastroenterol*. 2018. doi:10.1186/s12876-018-0788-9
20. Shen NT, Maw A, Tmanova LL, et al. Timely Use of Probiotics in Hospitalized Adults Prevents Clostridium difficile Infection: A Systematic Review With Meta-Regression Analysis. *Gastroenterology*. 2017;152(8):1889-1900.e9. doi:10.1053/j.gastro.2017.02.003
21. Hui W, Li T, Liu W, Zhou C, Gao F. Fecal microbiota transplantation for treatment of recurrent C. Difficile infection: An updated randomized controlled trial meta-analysis. *PLoS One*. 2019;14(1). doi:10.1371/journal.pone.0210016
22. Sun J, Marwah G, Westgarth M, Buys N, Ellwood D, Gray PH. Effects of probiotics on necrotizing enterocolitis, sepsis, intraventricular hemorrhage, mortality, length of hospital stay, and weight gain in very preterm infants: A meta-analysis. *Adv Nutr*. 2017. doi:10.3945/an.116.014605
23. Lau CSM, Chamberlain RS. Probiotic administration can prevent necrotizing enterocolitis in preterm infants: A meta-analysis. *J Pediatr Surg*. 2015. doi:10.1016/j.jpedsurg.2015.05.008
24. Yang Y, Guo Y, Kan Q, Zhou XG, Zhou XY, Li Y. A meta-analysis of probiotics for preventing necrotizing enterocolitis in preterm neonates. *Brazilian J Med Biol Res*. 2014. doi:10.1590/1414-431X20143857
25. Beghetti I, Panizza D, Lenzi J, et al. Probiotics for preventing necrotizing enterocolitis in preterm infants: A network meta-analysis. *Nutrients*. 2021. doi:10.3390/nu13010192
26. Ohkusa T, Koido S, Nishikawa Y, Sato N. Gut microbiota and chronic constipation: A review and update. *Front Med*. 2019;6(FEB):1-9. doi:10.3389/fmed.2019.00019
27. Miller LE, Ouwehand AC, Ibarra A. Effects of probiotic-containing products on stool frequency and intestinal transit in constipated adults: Systematic review and meta-analysis of randomized controlled trials. *Ann Gastroenterol*. 2017;30(6):629-639. doi:10.20524/aog.2017.0192

28. Huang R, Hu J. Positive effect of probiotics on constipation in children: A systematic review and meta-analysis of six randomized controlled trials. *Front Cell Infect Microbiol.* 2017;7(APR):153. doi:10.3389/fcimb.2017.00153
29. Dimidi E, Christodoulides S, Fragkos KC, Scott SM, Whelan K. The effect of probiotics on functional constipation in adults: a systematic review and meta-analysis of randomized controlled trials. *Am J Clin Nutr.* 2014;100(4):1075-1084. doi:10.3945/ajcn.114.089151
30. Anabrees J, Indrio F, Paes B, AlFaleh K. Probiotics for infantile colic: A systematic review. *BMC Pediatr.* 2013;13(1):186. doi:10.1186/1471-2431-13-186
31. Schreck Bird A, Gregory PJ, Jalloh MA, Risoldi Cochrane Z, Hein DJ. Probiotics for the Treatment of Infantile Colic: A Systematic Review. *J Pharm Pract.* 2017;30(3):366-374. doi:10.1177/0897190016634516
32. Sung V, D'Amico F, Cabana MD, et al. Lactobacillus reuteri to treat infant colic: A meta-analysis. *Pediatrics.* 2018;141(1). doi:10.1542/peds.2017-1811
33. Karkhaneh M, Fraser L, Jou H, Vohra S. Effectiveness of probiotics in infantile colic: A rapid review. *Paediatr Child Health.* 2020;25(3):149-159. doi:10.1093/PCH/PXZ007
34. Cuello-Garcia CA, Brozek JL, Fiocchi A, et al. Probiotics for the prevention of allergy: A systematic review and meta-analysis of randomized controlled trials. *J Allergy Clin Immunol.* 2015. doi:10.1016/j.jaci.2015.04.031
35. Zhang GQ, Hu HJ, Liu CY, Zhang Q, Shakya S, Li ZY. Probiotics for prevention of atopy and food hypersensitivity in early childhood A PRISMA-compliant systematic review and meta-analysis of randomized controlled trials. *Med (United States).* 2016. doi:10.1097/MD.0000000000002562
36. Zuccotti G, Meneghin F, Aceti A, et al. Probiotics for prevention of atopic diseases in infants: Systematic review and meta-analysis. *Allergy Eur J Allergy Clin Immunol.* 2015;70(11):1356-1371. doi:10.1111/all.12700
37. Ma J, Zhang J, Li Q, et al. Oral administration of a mixture of probiotics protects against food allergy via induction of CD103 + dendritic cells and modulates the intestinal microbiota. *J Funct Foods.* 2019. doi:10.1016/j.jff.2019.02.010
38. Pirbaglou M, Katz J, de Souza RJ, Stearns JC, Motamed M, Ritvo P. Probiotic supplementation can positively affect anxiety and depressive symptoms: a systematic review of randomized controlled trials. *Nutr Res.* 2016. doi:10.1016/j.nutres.2016.06.009
39. Huang R, Wang K, Hu J. Effect of Probiotics on Depression: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. *Nutrients.* 2016;8(8):483. doi:10.3390/nu8080483
40. Nadeem I, Rahman MZ, Ad-Dab'bagh Y, Akhtar M. Effect of probiotic interventions on depressive symptoms: A narrative review evaluating systematic reviews. *Psychiatry Clin Neurosci.* 2019;73(4):154-162. doi:10.1111/pcn.12804
41. Noonan S, Zaveri M, Macaninch E, Martyn K. Food & mood: a review of supplementary prebiotic and probiotic interventions in the treatment of anxiety and depression in adults. *BMJ Nutr Prev Heal.* 2020;0:bmjnph-2019-000053. doi:10.1136/bmjnph-2019-000053
42. Barbosa RSD, Vieira-Coelho MA. Probiotics and prebiotics: Focus on psychiatric disorders- A systematic review. *Nutr Rev.* 2020;78(6):437-450. doi:10.1093/nutrit/nuz080

Endnotes

Chapter 6

1. Schwarzenberg SJ, Georgieff MK. Advocacy for improving nutrition in the first 1000 days to support childhood development and adult health. *Pediatrics*. 2018. doi:10.1542/peds.2017-3716
2. Cusick SE, Georgieff MK. The Role of Nutrition in Brain Development: The Golden Opportunity of the “First 1000 Days.” *J Pediatr*. 2016. doi:10.1016/j.jpeds.2016.05.013
3. Linnér A, Almgren M. Epigenetic programming—The important first 1000 days. *Acta Paediatr*. 2020;109(3):443-452. doi:10.1111/apa.15050
4. Nasuti G, Blanchard C, Naylor P, et al. Comparison of the Dietary Intakes of New Parents, Second-Time Parents, and Nonparents: A Longitudinal Cohort Study. *J Acad Nutr Diet*. 2014;114(3):450-456. doi:10.1016/j.jand.2013.07.042
5. Crozier SR, Inskip HM, Godfrey KM, Robinson SM. Dietary patterns in pregnant women: A comparison of food-frequency questionnaires and 4d prospective diaries. *Br J Nutr*. 2008. doi:10.1017/S0007114507831746
6. Shaffer RM, Ferguson KK, Sheppard L, et al. Maternal urinary phthalate metabolites in relation to gestational diabetes and glucose intolerance during pregnancy. *Environ Int*. 2019. doi:10.1016/j.envint.2018.12.021
7. Zhang W, Xia W, Liu W, et al. Exposure to bisphenol A substitutes and gestational diabetes mellitus: A prospective cohort study in China. *Front Endocrinol (Lausanne)*. 2019. doi:10.3389/fendo.2019.00262
8. Mallozzi M, Bordi G, Garo C, Caserta D. The effect of maternal exposure to endocrine disrupting chemicals on fetal and neonatal development: A review on the major concerns. *Birth Defects Res Part C - Embryo Today Rev*. 2016. doi:10.1002/bdrc.21137
9. Grandjean P, Landrigan PJ. Neurobehavioural effects of developmental toxicity. *Lancet Neurol*. 2014. doi:10.1016/S1474-4422(13)70278-3
10. Grova N, Schroeder H, Olivier J, Turner JD. Review Article Epigenetic and Neurological Impairments Associated with Early Life Exposure to Persistent Organic Pollutants. 2019;2019. doi:10.1155/2019/2085496
11. Modabbernia A, Velthorst E, Reichenberg A. Environmental risk factors for autism: an evidence-based review of systematic reviews and meta-analyses. *Mol Autism*. 2017. doi:10.1186/s13229-017-0121-4
12. Modabbernia A, Arora M, Reichenberg A. Environmental exposure to metals, neurodevelopment, and psychosis. *Curr Opin Pediatr*. 2016. doi:10.1097/MOP.0000000000000332
13. Prado EL, Dewey KG. Nutrition and brain development in early life. *Nutr Rev*. 2014. doi:10.1111/nure.12102

14. Burke RD, Todd SW, Lumsden E, et al. Developmental neurotoxicity of the organophosphorus insecticide chlorpyrifos: from clinical findings to preclinical models and potential mechanisms. *J Neurochem*. 2017;142:162-177. doi:10.1111/jnc.14077
15. Hertz-Picciotto I, Sass JB, Engel S, et al. Organophosphate exposures during pregnancy and child neurodevelopment: Recommendations for essential policy reforms. *PLoS Med*. 2018;15(10):1-15. doi:10.1371/journal.pmed.1002671
16. Ye BS, Leung AOW, Wong MH. The association of environmental toxicants and autism spectrum disorders in children. *Environ Pollut*. 2017. doi:10.1016/j.envpol.2017.04.039
17. Mojtabai R, Olfson M, Han B. National trends in the prevalence and treatment of depression in adolescents and young adults. *Pediatrics*. 2016. doi:10.1542/peds.2016-1878
18. Oberlander TF, Miller AR. Antidepressant use in children and adolescents: Practice touch points to guide paediatricians. *Paediatr Child Health (Oxford)*. 2011. doi:10.1093/pch/16.9.549
19. Zeisel SH, Niculescu MD. Perinatal choline influences brain structure and function. *Nutr Rev*. 2006. doi:10.1301/nr.2006.janr.197-203
20. Wallace TC, Blusztajn JK, Caudill MA, et al. The underconsumed and underappreciated essential nutrient. *Nutr Today*. 2018;53(6):240-253. doi:10.1097/NT.0000000000000302
21. Auerbach M, Georgieff MK. Guidelines for iron deficiency in pregnancy: hope abounds. *Br J Haematol*. 2020. doi:10.1111/bjh.16220
22. Auerbach M, Abernathy J, Juul S, Short V, Derman R. Prevalence of iron deficiency in first trimester, nonanemic pregnant women. *J Matern Neonatal Med*. 2019. doi:10.1080/14767058.2019.1619690
23. Juul SE, Derman RJ, Auerbach M. Perinatal Iron Deficiency: Implications for Mothers and Infants
Keywords Parenteral iron · Iron insufficiency · Iron deficiency. *Neonatology*. 2019. doi:10.1159/000495978
24. Govindappagari S, Burwick RM. Treatment of Iron Deficiency Anemia in Pregnancy With Intravenous Versus Oral Iron. *Obstet Gynecol*. 2018. doi:10.1097/01.aog.0000533298.46904.df
25. Radlowski EC, Johnson RW. Perinatal iron deficiency and neurocognitive development. *Front Hum Neurosci*. 2013. doi:10.3389/fnhum.2013.00585
26. Georgieff MK, Krebs NF, Cusick SE. The Benefits and Risks of Iron Supplementation in Pregnancy and Childhood. *Annu Rev Nutr*. 2019;39(1):121-146. doi:10.1146/annurev-nutr-082018-124213
27. Cusick SE, Georgieff MK, Rao R. Approaches for reducing the risk of early-life iron deficiency-induced brain dysfunction in children. *Nutrients*. 2018. doi:10.3390/nu10020227
28. McCall KA, Huang CC, Fierke CA. Function and mechanism of zinc metalloenzymes. In: *Journal of Nutrition*. ; 2000. doi:10.1093/jn/130.5.1437s
29. Caulfield LE, Zavaleta N, Shankar AH, Merialdi M. Potential contribution of maternal zinc supplementation during pregnancy to maternal and child survival... Zinc for child health. Proceedings of a symposium held in Baltimore, Maryland, November 17-19, 1996. *Am J Clin Nutr*. 1998.
30. Chaffee BW, King JC. Effect of zinc supplementation on pregnancy and infant outcomes: A systematic review. *Paediatr Perinat Epidemiol*. 2012. doi:10.1111/j.1365-3016.2012.01289.x

31. Wang H, Hu YF, Hao JH, et al. Maternal zinc deficiency during pregnancy elevates the risks of fetal growth restriction: A population-based birth cohort study. *Sci Rep.* 2015. doi:10.1038/srep11262
32. Sauer AK, Grabrucker AM. Zinc Deficiency During Pregnancy Leads to Altered Microbiome and Elevated Inflammatory Markers in Mice. *Front Neurosci.* 2019;13. doi:10.3389/fnins.2019.01295
33. Shah D, Sachdev HPS. Zinc Deficiency in Pregnancy and Fetal Outcome. *Nutr Rev.* 2006. doi:10.1111/j.1753-4887.2006.tb00169.x
34. Brown KH, Rivera JA, Bhutta Z, et al. International Zinc Nutrition Consultative Group (IZiNCG) technical document #1. Assessment of the risk of zinc deficiency in populations and options for its control. *Food Nutr Bull.* 2004.
35. Hess SY, King JC. Effects of maternal zinc supplementation on pregnancy and lactation outcomes. *Food Nutr Bull.* 2009. doi:10.1177/15648265090301s105
36. Beach RS, Gershwin ME, Hurley LS. Gestational zinc deprivation in mice: Persistence of immunodeficiency for three generations. *Science (80-).* 1982;218(4571):469-471. doi:10.1126/science.7123244
37. Farrell. Proton Pump Inhibitors Interfere With Zinc Absorption and Zinc Body Stores. *Gastroenterol Res.* 2011. doi:10.4021/gr379w
38. Sturniolo GC, Montino MC, Rossetto L, et al. Inhibition of gastric acid secretion reduces zinc absorption in man. *J Am Coll Nutr.* 1991.
39. Krebs NF. Update on zinc deficiency and excess in clinical pediatric practice. *Ann Nutr Metab.* 2013. doi:10.1159/000348261
40. Hambidge KM, Miller L V., Westcott JE, Sheng X, Krebs NF. Zinc bioavailability and homeostasis. *Am J Clin Nutr.* 2010. doi:10.3945/ajcn.2010.28674I
41. Maares M, Haase H. A guide to human zinc absorption: General overview and recent advances of in vitro intestinal models. *Nutrients.* 2020. doi:10.3390/nu12030762
42. Wegmüller R, Tay F, Zeder C, Brnić M, Hurrell RF. Zinc absorption by young adults from supplemental zinc citrate is comparable with that from zinc gluconate and higher than from zinc oxide. *J Nutr.* 2014. doi:10.3945/jn.113.181487
43. Hacker AN, Fung EB, King JC. Role of calcium during pregnancy: Maternal and fetal needs. *Nutr Rev.* 2012. doi:10.1111/j.1753-4887.2012.00491.x
44. Willemse JPMM, Meertens LJE, Scheepers HCJ, et al. Calcium intake from diet and supplement use during early pregnancy: the Expect study I. *Eur J Nutr.* 2020. doi:10.1007/s00394-019-01896-8
45. Organisation WH. WHO | Calcium supplementation in pregnant women. *WHO | Calcium Suppl pregnant women.* 2013.
46. Hofmeyr GJ, Lawrie TA, Atallah ÁN, Torloni MR. Calcium supplementation during pregnancy for preventing hypertensive disorders and related problems. *Cochrane Database Syst Rev.* 2018. doi:10.1002/14651858.CD001059.pub5

47. Meertens LJE, Scheepers HCJ, Willemse JPMM, Spaanderman MEA, Smits LJM. Should women be advised to use calcium supplements during pregnancy? A decision analysis. *Matern Child Nutr.* 2018. doi:10.1111/mcn.12479
48. Hallberg L. Does calcium interfere with iron absorption? *Am J Clin Nutr.* 1998. doi:10.1093/ajcn/68.1.3
49. Hallberg L, Brune M, Erlandsson M, Sandberg AS, Rossander-Hulten L. Calcium: Effect of different amounts of nonheme- and heme-iron absorption in humans. *Am J Clin Nutr.* 1991. doi:10.1093/ajcn/53.1.112
50. Cook JD, Dassenko SA, Whittaker P. Calcium supplementation: Effect on iron absorption. *Am J Clin Nutr.* 1991. doi:10.1093/ajcn/53.1.106
51. Lynch SR. The effect of calcium on iron absorption. *Nutr Res Rev.* 2000. doi:10.1079/095442200108729043
52. Rosanoff A, Weaver CM, Rude RK. Suboptimal magnesium status in the United States: Are the health consequences underestimated? *Nutr Rev.* 2012. doi:10.1111/j.1753-4887.2011.00465.x
53. Volpe SL. Magnesium in disease prevention and overall health. *Adv Nutr.* 2013. doi:10.3945/an.112.003483
54. Fiorentini D, Cappadone C, Farruggia G, Prata C. Magnesium: Biochemistry, nutrition, detection, and social impact of diseases linked to its deficiency. *Nutrients.* 2021. doi:10.3390/nu13041136
55. Dalton LM, Ní Fhloinn DM, Gaydadzhieva GT, Mazurkiewicz OM, Leeson H, Wright CP. Magnesium in pregnancy. *Nutr Rev.* 2016. doi:10.1093/nutrit/nuw018
56. Fanni D, Gerosa C, Nurchi VM, et al. The Role of Magnesium in Pregnancy and in Fetal Programming of Adult Diseases. *Biol Trace Elem Res.* 2020. doi:10.1007/s12011-020-02513-0
57. Brown B, Wright C. Safety and efficacy of supplements in pregnancy. *Nutr Rev.* 2020. doi:10.1093/nutrit/nuz101
58. Takaya J, Kaneko K. Small for gestational age and magnesium in cord blood platelets: intrauterine magnesium deficiency may induce metabolic syndrome in later life. *J Pregnancy.* 2011. doi:10.1155/2011/270474
59. Maktabi M, Jamilian M, Amirani E, Chamani M, Asemi Z. The effects of magnesium and vitamin e co-supplementation on parameters of glucose homeostasis and lipid profiles in patients with gestational diabetes. *Lipids Health Dis.* 2018. doi:10.1186/s12944-018-0814-5
60. Guerrero-Romero F, Simental-Mendía LE, Hernández-Ronquillo G, Rodríguez-Morán M. Oral magnesium supplementation improves glycaemic status in subjects with prediabetes and hypomagnesaemia: A double-blind placebo-controlled randomized trial. *Diabetes Metab.* 2015. doi:10.1016/j.diabet.2015.03.010
61. Guerrero-Romero F, Rodríguez-Morán M. Magnesium improves the beta-cell function to compensate variation of insulin sensitivity: Double-blind, randomized clinical trial. *Eur J Clin Invest.* 2011. doi:10.1111/j.1365-2362.2010.02422.x

62. Guerrero-Romero F, Jaquez-Chairez FO, Rodríguez-Morán M. Magnesium in metabolic syndrome: A review based on randomized, double-blind clinical trials. *Magnes Res.* 2016. doi:10.1684/mrh.2016.0404
63. Mooren FC, Krüger K, Völker K, Golf SW, Wadepuhl M, Kraus A. Oral magnesium supplementation reduces insulin resistance in non-diabetic subjects - a double-blind, placebo-controlled, randomized trial. *Diabetes, Obes Metab.* 2011. doi:10.1111/j.1463-1326.2010.01332.x
64. Bullarbo M, Ödman N, Nestler A, et al. Magnesium supplementation to prevent high blood pressure in pregnancy: A randomised placebo control trial. *Arch Gynecol Obstet.* 2013. doi:10.1007/s00404-013-2900-2
65. Zarean E, Tarjan A. Effect of Magnesium Supplement on Pregnancy Outcomes: A Randomized Control Trial. *Adv Biomed Res.* 2017. doi:10.4103/2277-9175.213879
66. Jin S, Sha L, Dong J, et al. Effects of Nutritional Strategies on Glucose Homeostasis in Gestational Diabetes Mellitus: A Systematic Review and Network Meta-Analysis. *J Diabetes Res.* 2020. doi:10.1155/2020/6062478
67. Zeisel SH. Choline: critical role during fetal development and dietary requirements in adults. *Annu Rev Nutr.* 2006. doi:10.1146/annurev.nutr.26.061505.111156
68. Wiedeman AM, Barr SI, Green TJ, Xu Z, Innis SM, Kitts DD. Dietary choline intake: Current state of knowledge across the life cycle. *Nutrients.* 2018. doi:10.3390/nu10101513
69. Wiedeman AM, Whitfield KC, March KM, et al. Concentrations of water-soluble forms of choline in human milk from lactating women in Canada and Cambodia. *Nutrients.* 2018;10(3):3-12. doi:10.3390/nu10030381
70. Chen MY, Northington R, Yan J. Choline composition in breast Milk-A systematic review and meta-analysis. *FASEB J.* 2017.
71. Iicol YO, Ozbek R, Hamurtekin E, Ulus IH. Choline status in newborns, infants, children, breast-feeding women, breast-fed infants and human breast milk. *J Nutr Biochem.* 2005. doi:10.1016/j.jnutbio.2005.01.011
72. Fischer LM, Da Costa KA, Galanko J, et al. Choline intake and genetic polymorphisms influence choline metabolite concentrations in human breast milk and plasma. *Am J Clin Nutr.* 2010;92(2):336-346. doi:10.3945/ajcn.2010.29459
73. Jensen HH, Batres-Marquez SP, Carriquiry A, Schalinske KL. Choline in the diets of the US population: NHANES, 2003-2004. *FASEB J.* 2007.
74. Shaw GM, Carmichael SL, Yang W, Selvin S, Schaffer DM. Periconceptional dietary intake of choline and betaine and neural tube defects in offspring. *Am J Epidemiol.* 2004. doi:10.1093/aje/kwh187
75. Bahnfleth C, Canfield R, Nevins J, Caudill M, Strupp B. Prenatal Choline Supplementation Improves Child Color-location Memory Task Performance at 7 Y of Age (FS05-01-19). *Curr Dev Nutr.* 2019. doi:10.1093/cdn/nzz048.fs05-01-19
76. Korsmo HW, Jiang X, Caudill MA. Choline: Exploring the growing science on its benefits for moms and babies. *Nutrients.* 2019. doi:10.3390/nu11081823

77. Caudill MA, Strupp BJ, Muscalu L, Nevins JEH, Canfield RL. Maternal choline supplementation during the third trimester of pregnancy improves infant information processing speed: A randomized, double-blind, controlled feeding study. *FASEB J*. 2018. doi:10.1096/fj.201700692RR
78. Greenberg JA, Bell SJ, Guan Y, Yu Y-H. Folic Acid supplementation and pregnancy: more than just neural tube defect prevention. *Rev Obstet Gynecol*. 2011.
79. Frye RE, Slattery JC, Quadros E V. Folate metabolism abnormalities in autism: Potential biomarkers. *Biomark Med*. 2017. doi:10.2217/bmm-2017-0109
80. Surén P, Roth C, Bresnahan M, et al. Association between maternal use of folic acid supplements and risk of autism spectrum disorders in children. *JAMA - J Am Med Assoc*. 2013;309(6):570-577. doi:10.1001/jama.2012.155925
81. Pediatrics TAA of. Policy Statement: Breastfeeding and the Use of Human Milk. *Pediatrics*. 2012;129(3):e827-41. doi:10.1542/peds.2011-3552
82. Gao Y, Sheng C, Xie RH, et al. New perspective on impact of folic acid supplementation during pregnancy on neurodevelopment/autism in the offspring children - A systematic review. *PLoS One*. 2016. doi:10.1371/journal.pone.0165626
83. Crider KS, Yang TP, Berry RJ, Bailey LB. Folate and DNA methylation: A review of molecular mechanisms and the evidence for Folate's role. *Adv Nutr*. 2012. doi:10.3945/an.111.000992
84. Moussa HN, Hosseini Nasab S, Haidar ZA, Blackwell SC, Sibai BM. Folic acid supplementation: what is new? Fetal, obstetric, long-term benefits and risks. *Futur Sci OA*. 2016. doi:10.4155/fsoa-2015-0015
85. Yang QH, Botto LD, Gallagher M, et al. Prevalence and effects of gene-gene and gene-nutrient interactions on serum folate and serum total homocysteine concentrations in the United States: Findings from the third National Health and Nutrition Examination Survey DNA Bank. *Am J Clin Nutr*. 2008. doi:10.1093/ajcn/88.1.232
86. Botto LD, Yang Q. *5,10-Methylenetetrahydrofolate Reductase Gene Variants and Congenital Anomalies: A HuGE Review.*; 2000. <https://academic.oup.com/aje/article-abstract/151/9/862/50368>. Accessed April 19, 2020.
87. Choo SC, Loh SP, Khor GL, Sabariah MN, Rozita R. MTHFR C677T polymorphism, homocysteine and B-vitamins status in a sample of Chinese and Malay subjects in Universiti Putra Malaysia. *Malays J Nutr*. 2011.
88. Wilcken B, Bamforth F, Li Z, et al. Geographical and ethnic variation of the 677C>T allele of 5, 10 methylenetetrahydrofolate reductase (MTHFR): Findings from over 7000 newborns from 16 areas world wide. *J Med Genet*. 2003;40(8):619-625. doi:10.1136/jmg.40.8.619
89. Obeid R, Holzgreve W, Pietrzik K. Is 5-methyltetrahydrofolate an alternative to folic acid for the prevention of neural tube defects? *J Perinat Med*. 2013. doi:10.1515/jpm-2012-0256
90. Maia SB, Souza ASR, Caminha MDFC, et al. Vitamin a and pregnancy: A narrative review. *Nutrients*. 2019. doi:10.3390/nu11030681
91. Kamen DL, Tangpricha V. Vitamin D and molecular actions on the immune system: Modulation of innate and autoimmunity. *J Mol Med*. 2010. doi:10.1007/s00109-010-0590-9

92. Borges MC, Martini LA, Rogero MM. Current perspectives on vitamin D, immune system, and chronic diseases. *Nutrition*. 2011. doi:10.1016/j.nut.2010.07.022
93. Mohamed SA, Al-Hendy A, Schulkin J, Power ML. Opinions and Practice of US-Based Obstetrician-Gynecologists regarding Vitamin D Screening and Supplementation of Pregnant Women. *J Pregnancy*. 2016. doi:10.1155/2016/1454707
94. Daraki V, Roumeliotaki T, Koutra K, et al. High maternal vitamin D levels in early pregnancy may protect against behavioral difficulties at preschool age: the Rhea mother–child cohort, Crete, Greece. *Eur Child Adolesc Psychiatry*. 2018. doi:10.1007/s00787-017-1023-x
95. García-Serna AM, Morales E. Neurodevelopmental effects of prenatal vitamin D in humans: systematic review and meta-analysis. *Mol Psychiatry*. 2019. doi:10.1038/s41380-019-0357-9
96. Mazahery H, Camargo CA, Conlon C, Beck KL, Kruger MC, von Hurst PR. Vitamin D and autism spectrum disorder: A literature review. *Nutrients*. 2016. doi:10.3390/nu8040236
97. Fogacci S, Fogacci F, Banach M, et al. Vitamin D supplementation and incident preeclampsia: A systematic review and meta-analysis of randomized clinical trials. *Clin Nutr*. 2020;39(6):1742-1752. doi:10.1016/j.clnu.2019.08.015
98. Holick MF, Binkley NC, Bischoff-Ferrari HA, et al. Evaluation, treatment, and prevention of vitamin D deficiency: An endocrine society clinical practice guideline. *J Clin Endocrinol Metab*. 2011. doi:10.1210/jc.2011-0385
99. Committee opinion no. 495: Vitamin D: Screening and supplementation during pregnancy. *Obstet Gynecol*. 2011. doi:10.1097/AOG.0b013e318227f06b
100. Sebastiani G, Barbero AH, Borr C, Casanova MA, Aldecoa-bilbao V, Andreu-fern V. The Effects of Vegetarian and Vegan Diet during Pregnancy on the Health of Mothers and Offspring. *Nutrients*. 2019;1-29. doi:10.3390/nu11030557
101. Rogne T, Tielemans MJ, Chong MFF, et al. Associations of Maternal Vitamin B12 Concentration in Pregnancy with the Risks of Preterm Birth and Low Birth Weight: A Systematic Review and Meta-Analysis of Individual Participant Data. *Am J Epidemiol*. 2017. doi:10.1093/aje/kww212
102. Visentin CE, Masih SP, Plumptre L, et al. Low Serum Vitamin B12 Concentrations Are Prevalent in a Cohort of Pregnant Canadian Women. *J Nutr*. 2016;146(5):1035-1042. doi:10.3945/jn.115.226845
103. Chandyo RK, Ulak M, Kvestad I, et al. The effects of vitamin B12 supplementation in pregnancy and postpartum on growth and neurodevelopment in early childhood: Study Protocol for a Randomized Placebo Controlled Trial. *BMJ Open*. 2017. doi:10.1136/bmjopen-2017-016434
104. Watanabe F, Yabuta Y, Bito T, Teng F. Vitamin B12-containing plant food sources for vegetarians. *Nutrients*. 2014;6(5):1861-1873. doi:10.3390/nu6051861
105. Allen LH. How common is vitamin B12 deficiency? 1-3. In: *American Journal of Clinical Nutrition*. ; 2009. doi:10.3945/ajcn.2008.26947A
106. Lam JR, Schneider JL, Zhao W, Corley DA. Proton pump inhibitor and histamine 2 receptor antagonist use and vitamin B12 deficiency. *JAMA - J Am Med Assoc*. 2013;310(22):2435-2442. doi:10.1001/jama.2013.280490

107. Obeid R, Fedosov SN, Nexo E. Cobalamin coenzyme forms are not likely to be superior to cyano- and hydroxyl-cobalamin in prevention or treatment of cobalamin deficiency. *Mol Nutr Food Res*. 2015;59(7):1364-1372. doi:10.1002/mnfr.201500019
108. Paul C, Brady DM. Comparative Bioavailability and Utilization of Particular Forms of B12 Supplements with Potential to Mitigate B12-related Genetic Polymorphisms. *Integr Med*. 2017.
109. Nexo E, Hoffmann-Lücke E. Holotranscobalamin, a marker of vitamin B12 status: Analytical aspects and clinical utility. In: *American Journal of Clinical Nutrition*. Vol 94. Am J Clin Nutr; 2011. doi:10.3945/ajcn.111.013458
110. Jarquin Campos A, Risch L, Nydegger U, et al. Diagnostic Accuracy of Holotranscobalamin, Vitamin B12, Methylmalonic Acid, and Homocysteine in Detecting B12 Deficiency in a Large, Mixed Patient Population. *Dis Markers*. 2020;2020. doi:10.1155/2020/7468506
111. Kominiarek MA, Rajan P. Nutrition Recommendations in Pregnancy and Lactation. *Med Clin North Am*. 2016. doi:10.1016/j.mcna.2016.06.004
112. Elango R, Ball RO. Protein and Amino Acid Requirements during Pregnancy. *Adv Nutr*. 2016. doi:10.3945/an.115.011817
113. Stephens T V., Payne M, Ball RO, Pencharz PB, Elango R. Protein requirements of healthy pregnant women during early and late gestation are higher than current recommendations. *J Nutr*. 2015;145(1):73-78. doi:10.3945/jn.114.198622
114. Devi S, Varkey A, Sheshshayee MS, Preston T, Kurpad A V. Measurement of protein digestibility in humans by a dual-tracer method. *Am J Clin Nutr*. 2018. doi:10.1093/ajcn/nqy062
115. Shivakumar N, Kashyap S, Kishore S, et al. Protein-quality evaluation of complementary foods in Indian children. *Am J Clin Nutr*. 2019. doi:10.1093/ajcn/nqy265
116. Ebaid HM, Elgawish RAR, Abdelrazek HMA, Gaffer G, Tag HM. Prenatal Exposure to Soy Isoflavones Altered the Immunological Parameters in Female Rats. *Int J Toxicol*. 2016. doi:10.1177/1091581815625595
117. Gaffer GG, Elgawish RA, Abdelrazek HMA, Ebaid HM, Tag HM. Dietary soy isoflavones during pregnancy suppressed the immune function in male offspring albino rats. *Toxicol Reports*. 2018. doi:10.1016/j.toxrep.2018.02.002
118. Patisaul HB. Endocrine disruption by dietary phyto-oestrogens: Impact on dimorphic sexual systems and behaviours. In: *Proceedings of the Nutrition Society*. ; 2017. doi:10.1017/S0029665116000677
119. Bar-El Dadon S, Reifen R. Soy as an endocrine disruptor: Cause for caution? *J Pediatr Endocrinol Metab*. 2010. doi:10.1515/jpem.2010.138
120. Parvez S, Gerona RR, Proctor C, et al. Glyphosate exposure in pregnancy and shortened gestational length: A prospective Indiana birth cohort study. *Environ Health*. 2018. doi:10.1186/s12940-018-0367-0
121. Kearns CE, Schmidt LA, Glantz SA, Lee PR. Sugar Industry and Coronary Heart Disease Research: A Historical Analysis of Internal Industry Documents HHS Public Access. *JAMA Intern Med*. 2016;176(11):1680-1685. doi:10.1001/jamainternmed.2016.5394

122. Honda T, Ohara T, Shinohara M, et al. Serum elaidic acid concentration and risk of dementia: The Hisayama Study. *Neurology*. 2019;93(22):E2053-E2064. doi:10.1212/WNL.0000000000008464
123. Dhaka V, Gulia N, Ahlawat KS, Khatkar BS. Trans fats-sources, health risks and alternative approach - A review. *J Food Sci Technol*. 2011. doi:10.1007/s13197-010-0225-8
124. Grootveld M, Silwood Cjl, Addis P, Claxson A, Serra Bb, Viana M. Health Effects Of Oxidized Heated Oils1. *Foodserv Res Int*. 2001. doi:10.1111/j.1745-4506.2001.tb00028.x
125. Esterbauer H, Muskiet F, Horrobin DF. Cytotoxicity and genotoxicity of lipid-oxidation products. In: *American Journal of Clinical Nutrition*. ; 1993. doi:10.1093/ajcn/57.5.779S
126. Staprans I, Pan XM, Rapp JH, Feingold KR. The role of dietary oxidized cholesterol and oxidized fatty acids in the development of atherosclerosis. In: *Molecular Nutrition and Food Research*. Vol 49. Mol Nutr Food Res; 2005:1075-1082. doi:10.1002/mnfr.200500063
127. Osorio-Yáñez C, Gelaye B, Qiu C, et al. Maternal intake of fried foods and risk of gestational diabetes mellitus. *Ann Epidemiol*. 2017. doi:10.1016/j.annepidem.2017.05.006
128. Bao W, Tobias DK, Olsen SF, Zhang C. Pre-pregnancy fried food consumption and the risk of gestational diabetes mellitus: A prospective cohort study. *Diabetologia*. 2014. doi:10.1007/s00125-014-3382-x
129. Mozaffarian D, Ludwig DS. The 2015 US dietary guidelines: Lifting the ban on total dietary fat. *JAMA - J Am Med Assoc*. 2015;313(24):2421-2422. doi:10.1001/jama.2015.5941
130. Siri-Tarino PW, Sun Q, Hu FB, Krauss RM. Saturated fat, carbohydrate, and cardiovascular disease. *Am J Clin Nutr*. 2010;91(3):502-509. doi:10.3945/ajcn.2008.26285
131. German JB, Dillard CJ. Saturated fats: A perspective from lactation and milk composition. *Lipids*. 2010. doi:10.1007/s11745-010-3445-9
132. Sheppard KW, Cheatham CL. Omega-6/omega-3 fatty acid intake of children and older adults in the U.S.: Dietary intake in comparison to current dietary recommendations and the Healthy Eating Index. *Lipids Health Dis*. 2018;17(1). doi:10.1186/s12944-018-0693-9
133. Roche HM. Unsaturated fatty acids. In: *Proceedings of the Nutrition Society*. ; 1999. doi:10.1017/S002966519900052X
134. Sugano M, Hirahara F. Polyunsaturated fatty acids in the food chain in Japan. In: *American Journal of Clinical Nutrition*. ; 2000. doi:10.1093/ajcn/71.1.189s
135. Simopoulos AP. Importance of the ratio of omega-6/omega-3 essential fatty acids: evolutionary aspects. *World Rev Nutr Diet*. 2003. doi:10.1159/000073788
136. Simopoulos AP. An increase in the Omega-6/Omega-3 fatty acid ratio increases the risk for obesity. *Nutrients*. 2016. doi:10.3390/nu8030128
137. Innis SM. Trans fatty intakes during pregnancy, infancy and early childhood. *Atheroscler Suppl*. 2006. doi:10.1016/j.atherosclerosissup.2006.04.005
138. Leghi GE, Muhlhausler BS. The effect of n-3 LCPUFA supplementation on oxidative stress and inflammation in the placenta and maternal plasma during pregnancy. *Prostaglandins Leukot Essent Fat Acids*. 2016. doi:10.1016/j.plefa.2016.08.010

139. Innis SM. Dietary (n-3) fatty acids and brain development. *J Nutr.* 2007. doi:10.1093/jn/137.4.855
140. Mulder KA, King DJ, Innis SM. Omega-3 fatty acid deficiency in infants before birth identified using a randomized trial of maternal DHA supplementation in pregnancy. *PLoS One.* 2014. doi:10.1371/journal.pone.0083764
141. Mulder KA, Elango R, Innis SM. Fetal DHA inadequacy and the impact on child neurodevelopment: A follow-up of a randomised trial of maternal DHA supplementation in pregnancy. *Br J Nutr.* 2018. doi:10.1017/S0007114517003531
142. Gerster H. Can adults adequately convert α -linolenic acid (18:3n-3) to eicosapentaenoic acid (20:5n-3) and docosahexaenoic acid (22:6n-3)? *Int J Vitam Nutr Res.* 1998.
143. Brenna JT, Salem N, Sinclair AJ, Cunnane SC. α -Linolenic acid supplementation and conversion to n-3 long-chain polyunsaturated fatty acids in humans. *Prostaglandins Leukot Essent Fat Acids.* 2009. doi:10.1016/j.plefa.2009.01.004
144. Goyens PLL, Spilker ME, Zock PL, Katan MB, Mensink RP. Conversion of α -linolenic acid in humans is influenced by the absolute amounts of α -linolenic acid and linoleic acid in the diet and not by their ratio. *Am J Clin Nutr.* 2006. doi:10.1093/ajcn/84.1.44
145. Hoge A, Bernardy F, Donneau AF, et al. Low omega-3 index values and monounsaturated fatty acid levels in early pregnancy: An analysis of maternal erythrocytes fatty acids. *Lipids Health Dis.* 2018. doi:10.1186/s12944-018-0716-6
146. Baharanchi EM, Sarabi MM, Naghibalhossaini F. Effects of dietary polyunsaturated fatty acids on DNA methylation and the expression of DNMT3b and PPAR α genes in rats. *Avicenna J Med Biotechnol.* 2018.
147. Heaton AE, Meldrum SJ, Foster JK, Prescott SL, Simmer K. Does docosahexaenoic acid supplementation in term infants enhance neurocognitive functioning in infancy? *Front Hum Neurosci.* 2013. doi:10.3389/fnhum.2013.00774
148. Lassek WD, Gaulin SJC. Maternal milk DHA content predicts cognitive performance in a sample of 28 nations. *Matern Child Nutr.* 2015. doi:10.1111/mcn.12060
149. Innis SM. Impact of maternal diet on human milk composition and neurological development of infants. *Am J Clin Nutr.* 2014. doi:10.3945/ajcn.113.072595
150. Shulkin M, Pimpin L, Bellinger D, et al. N-3 fatty acid supplementation in mothers, preterm infants, and term infants and childhood psychomotor and visual development: A systematic review and meta-analysis. *J Nutr.* 2018;148(3):409-418. doi:10.1093/jn/nxx031
151. van der Wurff ISM, Bakker EC, Hornstra G, et al. Association between prenatal and current exposure to selected LCPUFAs and school performance at age 7. *Prostaglandins Leukot Essent Fat Acids.* 2016. doi:10.1016/j.plefa.2016.03.005
152. Brew BK, Toelle BG, Webb KL, Almqvist C, Marks GB. Omega-3 supplementation during the first 5 years of life and later academic performance: A randomised controlled trial. *Eur J Clin Nutr.* 2015. doi:10.1038/ejcn.2014.155

153. Helland IB, Smith L, Blomen B, Saarem K, Saugstad OD, Drevon CA. Effect of supplementing pregnant and lactating mothers with n-3 very-long-chain fatty acids on children's iq and body mass index at 7 years of age. *Pediatrics*. 2008. doi:10.1542/peds.2007-2762
154. López-Vicente M, Ribas Fitó N, Vilor-Tejedor N, et al. Prenatal Omega-6:Omega-3 Ratio and Attention Deficit and Hyperactivity Disorder Symptoms. *J Pediatr*. 2019. doi:10.1016/j.jpeds.2019.02.022
155. Nordgren TM, Lyden E, Anderson-Berry A, Hanson C. Omega-3 fatty acid intake of pregnant women and women of childbearing age in the united states: Potential for deficiency? *Nutrients*. 2017. doi:10.3390/nu9030197
156. Zhang Z, Fulgoni VL, Kris-Etherton PM, Mitmesser SH. Dietary intakes of EPA and DHA omega-3 fatty acids among US childbearing-age and pregnant women: An analysis of NHANES 2001–2014. *Nutrients*. 2018. doi:10.3390/nu10040416
157. Heaton AE, Meldrum SJ, Foster JK, Prescott SL, Simmer K. Does docosahexaenoic acid supplementation in term infants enhance neurocognitive functioning in infancy? *Front Hum Neurosci*. 2013;7(NOV). doi:10.3389/fnhum.2013.00774
158. Thompson M, Hein N, Hanson C, et al. Omega-3 fatty acid intake by age, gender, and pregnancy status in the United States: National health and nutrition examination survey 2003–2014. *Nutrients*. 2019;11(1):1-14. doi:10.3390/nu11010177
159. Mustad VA, Huynh DTT, López-Pedrosa JM, Campoy C, Rueda R. The role of dietary carbohydrates in gestational diabetes. *Nutrients*. 2020;12(2). doi:10.3390/nu12020385
160. Yang S, Reid G, Challis JRG, Kim SO, Gloor GB, Bocking AD. Is there a role for probiotics in the prevention of preterm birth? *Front Immunol*. 2015. doi:10.3389/fimmu.2015.00062
161. Othman M, Neilson JP, Alfirevic Z. Probiotics for preventing preterm labour. *Cochrane Database Syst Rev*. 2007. doi:10.1002/14651858.CD005941.pub2
162. Brantsæter AL, Myhre R, Haugen M, et al. Intake of probiotic food and risk of preeclampsia in primiparous women. *Am J Epidemiol*. 2011. doi:10.1093/aje/kwr168
163. Vandevusse L, Hanson L, Safdar N. Perinatal outcomes of prenatal probiotic and prebiotic administration: An integrative review. *J Perinat Neonatal Nurs*. 2013. doi:10.1097/JPN.0b013e3182a1e15d
164. Baldassarre ME, Di Mauro A, Capozza M, et al. Dysbiosis and prematurity: Is there a role for probiotics? *Nutrients*. 2019;11(6). doi:10.3390/nu11061273
165. Ho M, Chang YY, Chang WC, et al. Oral Lactobacillus rhamnosus GR-1 and Lactobacillus reuteri RC-14 to reduce Group B Streptococcus colonization in pregnant women: A randomized controlled trial. *Taiwan J Obstet Gynecol*. 2016. doi:10.1016/j.tjog.2016.06.003
166. Martín V, Cárdenas N, Ocaña S, et al. Rectal and vaginal eradication of streptococcus agalactiae (Gbs) in pregnant women by using lactobacillus salivarius cect 9145, a target-specific probiotic strain. *Nutrients*. 2019. doi:10.3390/nu11040810

167. Mastromarino P, Capobianco D, Miccheli A, et al. Administration of a multistrain probiotic product (VSL#3) to women in the perinatal period differentially affects breast milk beneficial microbiota in relation to mode of delivery. *Pharmacol Res.* 2015. doi:10.1016/j.phrs.2015.03.013
168. Moossavi S, Azad MB. Origins of human milk microbiota: new evidence and arising questions. *Gut Microbes.* 2020. doi:10.1080/19490976.2019.1667722
169. Moossavi S, Miliku K, Sepehri S, Khafipour E, Azad MB. The prebiotic and probiotic properties of human milk: Implications for infant immune development and pediatric asthma. *Front Pediatr.* 2018. doi:10.3389/fped.2018.00197
170. Zhang GQ, Hu HJ, Liu CY, Zhang Q, Shakya S, Li ZY. Probiotics for prevention of atopy and food hypersensitivity in early childhood A PRISMA-compliant systematic review and meta-analysis of randomized controlled trials. *Med (United States).* 2016. doi:10.1097/MD.0000000000002562
171. Zheng J, Feng Q, Zheng S, Xiao X. The effects of probiotics supplementation on metabolic health in pregnant women: An evidence based meta-analysis. *PLoS One.* 2018. doi:10.1371/journal.pone.0197771
172. Mueller NT, Bakacs E, Combellick J, Grigoryan Z, Dominguez-Bello MG. The infant microbiome development: Mom matters. *Trends Mol Med.* 2015. doi:10.1016/j.molmed.2014.12.002
173. Zhang C, Liu S, Solomon CG, Hu FB. Dietary fiber intake, dietary glycemic load, and the risk for gestational diabetes mellitus. *Diabetes Care.* 2006. doi:10.2337/dc06-0266
174. Ley SH, Hanley AJ, Retnakaran R, Sermer M, Zinman B, O'Connor DL. Effect of macronutrient intake during the second trimester on glucose metabolism later in pregnancy. *Am J Clin Nutr.* 2011. doi:10.3945/ajcn.111.018861
175. Qiu C, Coughlin KB, Frederick IO, Sorensen TK, Williams MA. Dietary fiber intake in early pregnancy and risk of subsequent preeclampsia. *Am J Hypertens.* 2008. doi:10.1038/ajh.2008.209
176. Barker DJP, Godfrey KM, Gluckman PD, Harding JE, Owens JA, Robinson JS. Fetal nutrition and cardiovascular disease in adult life. *Lancet.* 1993. doi:10.1016/0140-6736(93)91224-A
177. A. S, J. D, P. G, et al. High fructose diet in pregnancy leads to fetal programming of hypertension, insulin resistance and obesity in adult offspring. *Am J Obstet Gynecol.* 2016.
178. Chen L-W, Navarro P, Murrin CM, Mehegan J, Kelleher CC, Phillips CM. Prospective associations of maternal glycaemic insulin index and load with birth outcomes and weight status at age 5 years: results from the Lifeways Cross Generation Cohort Study. *Lancet.* 2018. doi:10.1016/s0140-6736(18)32089-0
179. Murrin C, Shrivastava A, Kelleher CC. Maternal macronutrient intake during pregnancy and 5 years postpartum and associations with child weight status aged five. *Eur J Clin Nutr.* 2013;67(6):670-679. doi:10.1038/ejcn.2013.76
180. Jen V, Erler NS, Tielemans MJ, et al. Mothers' intake of sugar-containing beverages during pregnancy and body composition of their children during childhood: The Generation R Study. *Am J Clin Nutr.* 2017. doi:10.3945/ajcn.116.147934
181. Regnault TR, Gentili S, Sarr O, Toop CR, Sloboda DM. Fructose, pregnancy and later life impacts. *Clin Exp Pharmacol Physiol.* 2013. doi:10.1111/1440-1681.12162

182. Astbury S, Song A, Zhou M, et al. High fructose intake during pregnancy in rats influences the maternal microbiome and gut development in the offspring. *Front Genet.* 2018. doi:10.3389/fgene.2018.00203
183. Tain Y, Chan JYH, Hsu C. Maternal Fructose Intake Affects Transcriptome Changes and Programmed Hypertension in Offspring in Later Life. *J Nutr Biochem.*2016. doi:10.3390/nu8120757
184. Clayton ZE, Vickers MH, Bernal A, Yap C, Sloboda DM. Early life exposure to fructose alters maternal, fetal and neonatal hepatic gene expression and leads to sex-dependent changes in lipid metabolism in rat offspring. *PLoS One.* 2015. doi:10.1371/journal.pone.0141962
185. Sloboda DM, Li M, Patel R, Clayton ZE, Yap C, Vickers MH. Early life exposure to fructose and offspring phenotype: Implications for long term metabolic homeostasis. *J Obes.* 2014. doi:10.1155/2014/203474
186. Yamada H, Munetsuna E, Ohashi K. High-fructose consumption and the epigenetics of DNA methylation. In: *Handbook of Nutrition, Diet, and Epigenetics.* ; 2019. doi:10.1007/978-3-319-55530-0_49
187. Zhu Y, Olsen SF, Mendola P, et al. Maternal dietary intakes of refined grains during pregnancy and growth through the first 7 y of life among children born to women with gestational diabetes. *Am J Clin Nutr.* 2017. doi:10.3945/ajcn.116.136291
188. Cook JD, Reddy MB. Effect of ascorbic acid intake on nonheme-iron absorption from a complete diet. *Am J Clin Nutr.* 2001. doi:10.1093/ajcn/73.1.93
189. Teucher B, Olivares M, Cori H. Enhancers of iron absorption: Ascorbic acid and other organic acids. In: *International Journal for Vitamin and Nutrition Research.* ; 2004. doi:10.1024/0300-9831.74.6.403
190. Beck KL, Conlon CA, Kruger R, Coad J. Dietary determinants of and possible solutions to iron deficiency for young women living in industrialized countries: A review. *Nutrients.* 2014. doi:10.3390/nu6093747
191. Daru J, Allotey J, Peña-Rosas JP, Khan KS. Serum ferritin thresholds for the diagnosis of iron deficiency in pregnancy: a systematic review. *Transfus Med.* 2017. doi:10.1111/tme.12408
192. Juul SE, Derman RJ, Auerbach M. Perinatal Iron Deficiency: Implications for Mothers and Infants. *Neonatology.* 2019;115(3):269-274. doi:10.1159/000495978
193. Auerbach M, Abernathy J, Juul S, Short V, Derman R. Prevalence of iron deficiency in first trimester, nonanemic pregnant women. *J Matern Neonatal Med.* 2019. doi:10.1080/14767058.2019.1619690
194. Auerbach M, Abernathy J, Juul S, Short V, Derman R. Prevalence of iron deficiency in first trimester, nonanemic pregnant women. *J Matern Neonatal Med.* 2019. doi:10.1080/14767058.2019.1619690
195. Means RT. Iron deficiency and iron deficiency anemia: Implications and impact in pregnancy, fetal development, and early childhood parameters. *Nutrients.* 2020. doi:10.3390/nu12020447
196. Pavord S, Daru J, Prasannan N, Robinson S, Stanworth S, Girling J. UK guidelines on the management of iron deficiency in pregnancy. *Br J Haematol.* 2020. doi:10.1111/bjh.16221

197. Auerbach M, Georgieff MK. Guidelines for iron deficiency in pregnancy: hope abounds: Commentary to accompany: UK guidelines on the management of iron deficiency in pregnancy. *Br J Haematol*. 2020. doi:10.1111/bjh.16220
198. Georgieff MK. Iron deficiency in pregnancy. *Am J Obstet Gynecol*. 2020. doi:10.1016/j.ajog.2020.03.006
199. Georgieff MK. Iron assessment to protect the developing brain. In: *American Journal of Clinical Nutrition*. ; 2017. doi:10.3945/ajcn.117.155846
200. Georgieff MK, Krebs NF, Cusick SE. The Benefits and Risks of Iron Supplementation in Pregnancy and Childhood. *Annu Rev Nutr*. 2019;39(1):121-146. doi:10.1146/annurev-nutr-082018-124213
201. Cusick SE, Georgieff MK, Rao R. Approaches for reducing the risk of early-life iron deficiency-induced brain dysfunction in children. *Nutrients*. 2018. doi:10.3390/nu10020227
202. Milman N, Taylor CL, Merkel J, Brannon PM. Iron status in pregnant women and women of reproductive age in Europe. In: *American Journal of Clinical Nutrition*. ; 2017. doi:10.3945/ajcn.117.156000
203. National Institutes of Health (www.NIH.gov),
204. USDA Nutrient Database (<https://fdc.nal.usda.gov/>)
205. Health Link British Columbia (www.healthlinkBC.ca),
206. Linus Pauling Institute (<https://lpi.oregonstate.edu/mic/minerals/iron>)
207. Pietrzik K, Bailey L, Shane B. Folic acid and 1-5-methyltetrahydrofolate: Comparison of clinical pharmacokinetics and pharmacodynamics. *Clin Pharmacokinet*. 2010;49(8). doi:10.2165/11532990
208. Ferrazzi E, Tiso G, Di Martino D. Folic acid versus 5- methyl tetrahydrofolate supplementation in pregnancy. *Eur J Obstet Gynecol Reprod Biol*. 2020;253. doi:10.1016/j.ejogrb.2020.06.012
209. Czeizel AE, Dudás I, Paput L, Bánhidly F. Prevention of neural-tube defects with periconceptional folic acid, methylfolate, or multivitamins? *Ann Nutr Metab*. 2011;58(4). doi:10.1159/000330776
210. Yan L, Zhao L, Long Y, et al. Association of the Maternal MTHFR C677T Polymorphism with Susceptibility to Neural Tube Defects in Offsprings: Evidence from 25 Case-Control Studies. *PLoS One*. 2012;7(10). doi:10.1371/journal.pone.0041689
211. Jankovic-Karasoulos T, Furness DL, Leemaqz SY, et al. Maternal folate, one-carbon metabolism and pregnancy outcomes. *Matern Child Nutr*. 2021;17(1). doi:10.1111/mcn.13064
212. Liu C, Luo D, Wang Q, et al. Serum homocysteine and folate concentrations in early pregnancy and subsequent events of adverse pregnancy outcome: The Sichuan Homocysteine study. *BMC Pregnancy Childbirth*. 2020;20(1). doi:10.1186/s12884-020-02860-9
213. Plumtre L, Masih SP, Ly A, et al. High concentrations of folate and unmetabolized folic acid in a cohort of pregnant Canadian women and umbilical cord blood. *Am J Clin Nutr*. 2015;102(4). doi:10.3945/ajcn.115.110783
214. Tafuri L, J Servy E, J R Menezo Y. The hazards of excessive folic acid intake in MTHFR gene mutation carriers: An obstetric and gynecological perspective. *Clin Obstet Gynecol Reprod Med*. 2018;4(2). doi:10.15761/cogrm.1000215

Endnotes

Chapter 7

1. Tamayo-Uria I, Maitre L, Thomsen C, et al. The early-life exposome: Description and patterns in six European countries. *Environ Int*. 2019. doi:10.1016/j.envint.2018.11.067
2. Vermeulen R, Schymanski EL, Barabási AL, Miller GW. The exposome and health: Where chemistry meets biology. *Science (80-)*. 2020. doi:10.1126/science.aay3164
3. Johnson CH, Athersuch TJ, Collman GW, et al. Yale school of public health symposium on lifetime exposures and human health: The exposome; Summary and future reflections. In: *Human Genomics*. ; 2017. doi:10.1186/s40246-017-0128-0
4. Vrijheid M, Slama R, Robinson O, et al. The human early-life exposome (HELIX): Project rationale and design. *Environ Health Perspect*. 2014. doi:10.1289/ehp.1307204
5. Maitre L, De Bont J, Casas M, et al. Human Early Life Exposome (HELIX) study: A European population-based exposome cohort. *BMJ Open*. 2018. doi:10.1136/bmjopen-2017-021311
6. Grandjean P, Landrigan PJ. Neurobehavioural effects of developmental toxicity. *Lancet Neurol*. 2014. doi:10.1016/S1474-4422(13)70278-3
7. Üzüvar T, Büyükgebiz A. Fetal and neonatal endocrine disruptors. *JCRPE J Clin Res Pediatr Endocrinol*. 2012. doi:10.4274/Jcrpe.569
8. Tests Find More Than 200 Chemicals in Newborn Umbilical Cord Blood - Scientific American. <https://www.scientificamerican.com/article/newborn-babies-chemicals-exposure-bpa/>. Accessed September 25, 2020.
9. Morello-Frosch R, Cushing LJ, Jesdale BM, et al. Environmental chemicals in an urban population of pregnant women and their newborns from San Francisco. *Environ Sci Technol*. 2016. doi:10.1021/acs.est.6b03492
10. Terry P, Towers C V., Liu LY, Peverly AA, Chen J, Salamova A. Polybrominated diphenyl ethers (flame retardants) in mother-infant pairs in the Southeastern U.S. *Int J Environ Health Res*. 2017;27(3):205-214. doi:10.1080/09603123.2017.1332344
11. Parvez S, Gerona RR, Proctor C, et al. Glyphosate exposure in pregnancy and shortened gestational length: A prospective Indiana birth cohort study. *Environ Heal A Glob Access Sci Source*. 2018. doi:10.1186/s12940-018-0367-0
12. Ibrahim F, Halttunen T, Tahvonen R, Salminen S. Probiotic bacteria as potential detoxification tools: Assessing their heavy metal binding isotherms. *Can J Microbiol*. 2006. doi:10.1139/W06-043
13. Feng P, Ye Z, Kakade A, Virk AK, Li X, Liu P. A review on gut remediation of selected environmental contaminants: Possible roles of probiotics and gut microbiota. *Nutrients*. 2019. doi:10.3390/nu11010022
14. Trinder M, McDowell TW, Daisley BA, et al. Probiotic lactobacillus rhamnosus reduces organophosphate pesticide absorption and toxicity to *Drosophila melanogaster*. *Appl Environ Microbiol*. 2016. doi:10.1128/AEM.01510-16

15. Hodges RE, Minich DM. Modulation of Metabolic Detoxification Pathways Using Foods and Food-Derived Components: A Scientific Review with Clinical Application. *J Nutr Metab.* 2015. doi:10.1155/2015/760689
16. Beath S V. Hepatic function and physiology in the newborn. *Semin Neonatol.* 2003;8(5):337-346. doi:10.1016/S1084-2756(03)00066-6
17. Piñ Eiro-Carrero VM, Piñ Eiro EO. *Liver.* Vol 113.; 2004. www.aappublications.org/news. Accessed September 25, 2020.
18. Saili KS, Zurlinden TJ, Schwab AJ, et al. Blood-brain barrier development: Systems modeling and predictive toxicology. *Birth Defects Res.* 2017;109(20):1680-1710. doi:10.1002/bdr2.1180
19. Morris G, Fernandes BS, Puri BK, Walker AJ, Carvalho AF, Berk M. Leaky brain in neurological and psychiatric disorders: Drivers and consequences. *Aust N Z J Psychiatry.* 2018. doi:10.1177/0004867418796955
20. Obrenovich M. Leaky Gut, Leaky Brain? *Microorganisms.* 2018. doi:10.3390/microorganisms6040107
21. Nation DA, Sweeney MD, Montagne A, et al. Blood–brain barrier breakdown is an early biomarker of human cognitive dysfunction. *Nat Med.* 2019. doi:10.1038/s41591-018-0297-y
22. Sweeney MD, Sagare AP, Zlokovic B V. Blood-brain barrier breakdown in Alzheimer disease and other neurodegenerative disorders. *Nat Rev Neurol.* 2018. doi:10.1038/nrneurol.2017.188
23. M. F, A. S, S. S, et al. Blood-brain barrier and intestinal epithelial barrier alterations in autism spectrum disorders. *Mol Autism.* 2016. doi:10.1186/s13229-016-0110-z LK -
24. Rice D, Barone S. Critical periods of vulnerability for the developing nervous system: Evidence from humans and animal models. *Environ Health Perspect.* 2000;108(SUPPL. 3):511-533. doi:10.1289/ehp.00108s3511
25. Royston KJ, Tollefsbol TO. The Epigenetic Impact of Cruciferous Vegetables on Cancer Prevention. *Curr Pharmacol Reports.* 2015;1(1):46-51. doi:10.1007/s40495-014-0003-9
26. Barański M, Średnicka-Tober D, Volakakis N, et al. Higher antioxidant and lower cadmium concentrations and lower incidence of pesticide residues in organically grown crops: A systematic literature review and meta-analyses. *Br J Nutr.* 2014. doi:10.1017/S0007114514001366
27. Lu C, Toepel K, Irish R, Fenske RA, Barr DB, Bravo R. Organic diets significantly lower children’s dietary exposure to organophosphorus pesticides. *Environ Health Perspect.* 2006. doi:10.1289/ehp.8418
28. Hertz-Picciotto I, Sass JB, Engel S, et al. Organophosphate exposures during pregnancy and child neurodevelopment: Recommendations for essential policy reforms. *PLoS Med.* 2018;15(10):1-15. doi:10.1371/journal.pmed.1002671
29. Rauh VA, Perera FP, Horton MK, et al. Brain anomalies in children exposed prenatally to a common organophosphate pesticide. *Proc Natl Acad Sci U S A.* 2012;109(20):7871-7876. doi:10.1073/pnas.1203396109

30. Rauh V, Arunajadai S, Horton M, et al. Seven-year neurodevelopmental scores and prenatal exposure to chlorpyrifos, a common agricultural pesticide. *Everyday Environ Toxins Child Expo Risks*. 2015;(8):201-219. doi:10.1201/b18221
31. Roberts JR, Karr CJ, Paulson JA, et al. Pesticide exposure in children. *Pediatrics*. 2012. doi:10.1542/peds.2012-2757
32. Bouchard MF, Bellinger DC, Wright RO, Weisskopf MG. Attention-deficit/hyperactivity disorder and urinary metabolites of organophosphate pesticides. *Pediatrics*. 2010. doi:10.1542/peds.2009-3058
33. Wagner-Schuman M, Richardson JR, Auinger P, et al. Association of pyrethroid pesticide exposure with attention-deficit/hyperactivity disorder in a nationally representative sample of U.S. children. *Environ Heal*. 2015. doi:10.1186/s12940-015-0030-y
34. Roberts JR, Dawley EH, Reigart JR. Children’s low-level pesticide exposure and associations with autism and ADHD: a review. *Pediatr Res*. 2019. doi:10.1038/s41390-018-0200-z
35. Roberts JR, Karr CJ. Pesticide Exposure in Children. *Pediatrics*. 2012. doi:10.1542/peds.2012-2758
36. Ricceri L, Venerosi A, Capone F, et al. Developmental neurotoxicity of organophosphorous pesticides: Fetal and neonatal exposure to chlorpyrifos alters sex-specific behaviors at adulthood in mice. *Toxicol Sci*. 2006;93(1):105-113. doi:10.1093/toxsci/kfl032
37. Zhang Y, Han S, Liang D, et al. Prenatal exposure to organophosphate pesticides and neurobehavioral development of neonates: A birth cohort study in Shenyang, China. *PLoS One*. 2014. doi:10.1371/journal.pone.0088491
38. Muñoz-Quezada MT, Lucero BA, Barr DB, et al. Neurodevelopmental effects in children associated with exposure to organophosphate pesticides: A systematic review. *Neurotoxicology*. 2013. doi:10.1016/j.neuro.2013.09.003
39. Mnif W, Hassine AIH, Bouaziz A, Bartegi A, Thomas O, Roig B. Effect of endocrine disruptor pesticides: A review. *Int J Environ Res Public Health*. 2011. doi:10.3390/ijerph8062265
40. Nicolopoulou-Stamati P, Maipas S, Kotampasi C, Stamatis P, Hens L. Chemical Pesticides and Human Health: The Urgent Need for a New Concept in Agriculture. *Front Public Heal*. 2016. doi:10.3389/fpubh.2016.00148
41. Liang Y, Zhan J, Liu D, et al. Organophosphorus pesticide chlorpyrifos intake promotes obesity and insulin resistance through impacting gut and gut microbiota. *Microbiome*. 2019. doi:10.1186/s40168-019-0635-4
42. Chiu YH, Williams PL, Gillman MW, et al. Association between pesticide residue intake from consumption of fruits and vegetables and pregnancy outcomes among women undergoing infertility treatment with assisted reproductive technology. *JAMA Intern Med*. 2018. doi:10.1001/jamainternmed.2017.5038
43. Vandenberg LN, Colborn T, Hayes TB, et al. Hormones and endocrine-disrupting chemicals: Low-dose effects and nonmonotonic dose responses. *Endocr Rev*. 2012;33(3):378-455. doi:10.1210/er.2011-1050

44. Zoeller RT, Vandenberg LN. Assessing dose-response relationships for endocrine disrupting chemicals (EDCs): A focus on non-monotonicity. *Environ Heal A Glob Access Sci Source*. 2015;14(1). doi:10.1186/s12940-015-0029-4
45. Lagarde F, Beausoleil C, Belcher SM, et al. Non-monotonic dose-response relationships and endocrine disruptors: A qualitative method of assessment -No section-. *Environ Heal A Glob Access Sci Source*. 2015;14(1):13. doi:10.1186/1476-069X-14-13
46. Diamanti-Kandarakis E, Bourguignon JP, Giudice LC, et al. Endocrine-disrupting chemicals: An Endocrine Society scientific statement. *Endocr Rev*. 2009. doi:10.1210/er.2009-0002
47. Gore AC, Chappell VA, Fenton SE, et al. EDC-2: The Endocrine Society’s Second Scientific Statement on Endocrine-Disrupting Chemicals. *Endocr Rev*. 2015;36(6):1-150. doi:10.1210/er.2015-1010
48. Tran NQV, Miyake K. Neurodevelopmental Disorders and Environmental Toxicants: Epigenetics as an Underlying Mechanism. *Int J Genomics*. 2017. doi:10.1155/2017/7526592
49. Ye BS, Leung AOW, Wong MH. The association of environmental toxicants and autism spectrum disorders in children. *Environ Pollut*. 2017. doi:10.1016/j.envpol.2017.04.039
50. Mallozzi M, Bordi G, Garo C, Caserta D. The effect of maternal exposure to endocrine disrupting chemicals on fetal and neonatal development: A review on the major concerns. *Birth Defects Res Part C - Embryo Today Rev*. 2016. doi:10.1002/bdrc.21137
51. Braun JM. Early-life exposure to EDCs: Role in childhood obesity and neurodevelopment. *Nat Rev Endocrinol*. 2017. doi:10.1038/nrendo.2016.186
52. Rochester JR, Bolden AL, Kwiatkowski CF. Prenatal exposure to bisphenol A and hyperactivity in children: a systematic review and meta-analysis. *Environ Int*. 2018. doi:10.1016/j.envint.2017.12.028
53. Andújar N, Gálvez-Ontiveros Y, Zafra-Gómez A, et al. Bisphenol A analogues in food and their hormonal and obesogenic effects: A review. *Nutrients*. 2019;11(9). doi:10.3390/nu11092136
54. Thoene M, Dzika E, Gonkowski S, Wojtkiewicz J. Bisphenol S in Food Causes Hormonal and Obesogenic Effects Comparable to or Worse than Bisphenol A: A Literature Review. *Nutrients*. 2020;12(2):532. doi:10.3390/nu12020532
55. Seachrist DD, Bonk KW, Ho SM, Prins GS, Soto AM, Keri RA. A review of the carcinogenic potential of bisphenol A. *Reprod Toxicol*. 2016;59:167-182. doi:10.1016/j.reprotox.2015.09.006
56. Wazir U, Mokbel K. Bisphenol A: A concise review of literature and a discussion of health and regulatory implications. *In Vivo (Brooklyn)*. 2019;33(5):1421-1423. doi:10.21873/invivo.11619
57. Nomiri S, Hoshyar R, Ambrosino C, Tyler CR, Mansouri B. A mini review of bisphenol A (BPA) effects on cancer-related cellular signaling pathways. *Environ Sci Pollut Res*. 2019;26(9):8459-8467. doi:10.1007/s11356-019-04228-9
58. De Falco M, Forte M, Laforgia V. Estrogenic and anti-androgenic endocrine disrupting chemicals and their impact on the male reproductive system. *Front Environ Sci*. 2015;3(FEB):3. doi:10.3389/fenvs.2015.00003

59. Mallozzi M, Bordi G, Garo C, Caserta D. Review The Effect of Maternal Exposure to Endocrine Disrupting Chemicals on Fetal and Neonatal Development : A Review on the Major Concerns. *Birth Defects Res.* 2016;m. doi:10.1002/bdrc.21137
60. Radke EG, Braun JM, Nachman RM, Cooper GS. Phthalate exposure and neurodevelopment: A systematic review and meta-analysis of human epidemiological evidence. *Environ Int.* 2020;137. doi:10.1016/j.envint.2019.105408
61. Ejaredar M, Nyanza EC, Ten Eycke K, Dewey D. Phthalate exposure and childrens neurodevelopment: A systematic review. *Environ Res.* 2015;142:51-60. doi:10.1016/j.envres.2015.06.014
62. Grova N, Schroeder H, Olivier J, Turner JD. Epigenetic and Neurological Impairments Associated with Early Life Exposure to Persistent Organic Pollutants. *Int J Genomics.* 2019;2019. doi:10.1155/2019/2085496
63. Johnson-Restrepo B, Kannan K. An assessment of sources and pathways of human exposure to polybrominated diphenyl ethers in the United States. *Chemosphere.* 2009;76(4):542-548. doi:10.1016/j.chemosphere.2009.02.068
64. Hudson-Hanley B, Irvin V, Flay B, MacDonald M, Kile ML. Prenatal PBDE Exposure and Neurodevelopment in Children 7 Years Old or Younger: a Systematic Review and Meta-analysis. *Curr Epidemiol Reports.* 2018;5(1):46-59. doi:10.1007/s40471-018-0137-0
65. Gibson EA, Siegel EL, Eniola F, Herbstman JB, Factor-Litvak P. Effects of polybrominated diphenyl ethers on child cognitive, behavioral, and motor development. *Int J Environ Res Public Health.* 2018. doi:10.3390/ijerph15081636
66. Sunderland EM, Hu XC, Dassuncao C, Tokranov AK, Wagner CC, Allen JG. A review of the pathways of human exposure to poly- and perfluoroalkyl substances (PFASs) and present understanding of health effects. *J Expo Sci Environ Epidemiol.* 2019;29(2):131-147. doi:10.1038/s41370-018-0094-1
67. Huang H, Yu K, Zeng X, et al. Association between prenatal exposure to perfluoroalkyl substances and respiratory tract infections in preschool children. *Environ Res.* 2020;191:110156. doi:10.1016/j.envres.2020.110156
68. Liew Z, Goudarzi H, Oulhote Y. Developmental Exposures to Perfluoroalkyl Substances (PFASs): An Update of Associated Health Outcomes. *Curr Environ Heal reports.* 2018. doi:10.1007/s40572-018-0173-4
69. Seltenrich N. PFAS in Food Packaging: A Hot, Greasy Exposure. *Environ Health Perspect.* 2020;128(5):054002. doi:10.1289/EHP6335
70. Prevention of Childhood Lead Toxicity. *Pediatrics.* 2016. doi:10.1542/peds.2016-1493
71. Gump BB, Dykas MJ, MacKenzie JA, et al. Background lead and mercury exposures: Psychological and behavioral problems in children. *Environ Res.* 2017. doi:10.1016/j.envres.2017.06.033
72. Tolins M, Ruchirawat M, Landrigan P. The developmental neurotoxicity of arsenic: Cognitive and behavioral consequences of early life exposure. *Ann Glob Heal.* 2014. doi:10.1016/j.aogh.2014.09.005

73. Farzan SF, Karagas MR, Chen Y. In utero and early life arsenic exposure in relation to long-term health and disease. *Toxicol Appl Pharmacol*. 2013. doi:10.1016/j.taap.2013.06.030
74. Islam S, Rahman MM, Islam MR, Naidu R. Arsenic accumulation in rice: Consequences of rice genotypes and management practices to reduce human health risk. *Environ Int*. 2016. doi:10.1016/j.envint.2016.09.006
75. Mandal U, Singh P, Kundu AK, Chatterjee D, Nriagu J, Bhowmick S. Arsenic retention in cooked rice: Effects of rice type, cooking water, and indigenous cooking methods in West Bengal, India. *Sci Total Environ*. 2019. doi:10.1016/j.scitotenv.2018.08.172
76. Mwale T, Rahman MM, Mondal D. Risk and benefit of different cooking methods on essential elements and arsenic in rice. *Int J Environ Res Public Health*. 2018. doi:10.3390/ijerph15061056
77. Davis MA, Mackenzie TA, Cottingham KL, Gilbert-Diamond D, Punshon T, Karagas MR. Rice consumption and urinary arsenic concentrations in U.S. children. *Environ Health Perspect*. 2012. doi:10.1289/ehp.1205014
78. Davis MA, Signes-Pastor AJ, Argos M, et al. Assessment of human dietary exposure to arsenic through rice. *Sci Total Environ*. 2017. doi:10.1016/j.scitotenv.2017.02.119
79. Karagas MR, Punshon T, Sayarath V, Jackson BP, Folt CL, Cottingham KL. Association of rice and rice-product consumption with arsenic exposure early in life. *JAMA Pediatr*. 2016. doi:10.1001/jamapediatrics.2016.0120
80. Barnaby R, Liefeld A, Jackson BP, Hampton TH, Stanton BA. Effectiveness of table top water pitcher filters to remove arsenic from drinking water. *Environ Res*. 2017. doi:10.1016/j.envres.2017.07.018
81. Zahir F, Rizwi SJ, Haq SK, Khan RH. Low dose mercury toxicity and human health. *Environ Toxicol Pharmacol*. 2005. doi:10.1016/j.etap.2005.03.007
82. NRC. Scientific Frontiers in Developmental Toxicology and Risk Assessment: Board on Environmental Studies and Toxicology. *Washington, DC Natl Acad Press*. 2000. doi:10.17226/9871
83. WHO. *Exposure to Mercury: A Major Public Health Concern.*; 2006. doi:10.1016/j.ecoenv.2011.12.007
84. Ruggieri F, Majorani C, Domanico F, Alimonti A. Mercury in children: Current state on exposure through human biomonitoring studies. *Int J Environ Res Public Health*. 2017. doi:10.3390/ijerph14050519
85. Li R, Wu H, DIng J, Fu W, Gan L, Li Y. Mercury pollution in vegetables, grains and soils from areas surrounding coal-fired power plants. *Sci Rep*. 2017;7(October 2016):1-9. doi:10.1038/srep46545
86. Fernández C, de Salles AA, Sears ME, Morris RD, Davis DL. Absorption of wireless radiation in the child versus adult brain and eye from cell phone conversation or virtual reality. *Environ Res*. 2018. doi:10.1016/j.envres.2018.05.013
87. Pall ML. Wi-Fi is an important threat to human health ☆. *Environ Res*. 2018;164(January):405-416. doi:10.1016/j.envres.2018.01.035

88. Bellieni C V. *Fetal and Neonatal Effects of EMF.*; 2012. <http://www.emfs.info/Related+Issues/limits/>. Accessed September 26, 2020.
89. Johansson O. Disturbance of the immune system by electromagnetic fields-A potentially underlying cause for cellular damage and tissue repair reduction which could lead to disease and impairment. *Pathophysiology*. 2009. doi:10.1016/j.pathophys.2009.03.004
90. Santini MT, Rainaldi G, Indovina PL. Cellular effects of extremely low frequency (ELF) electromagnetic fields. *Int J Radiat Biol*. 2009. doi:10.1080/09553000902781097
91. Rosado MM, Simkó M, Mattsson M-O, Pioli C. Immune-Modulating Perspectives for Low Frequency Electromagnetic Fields in Innate Immunity. *Front Public Heal*. 2018. doi:10.3389/fpubh.2018.00085
92. Li DK, Chen H, Odouli R. Maternal exposure to magnetic fields during pregnancy in relation to the risk of asthma in offspring. *Arch Pediatr Adolesc Med*. 2011. doi:10.1001/archpediatrics.2011.135
93. Haghani M, Shabani M, Moazzami K. Maternal mobile phone exposure adversely affects the electrophysiological properties of Purkinje neurons in rat offspring. *Neuroscience*. 2013. doi:10.1016/j.neuroscience.2013.07.049
94. Şahin A, Aslan A, Baş O, et al. Deleterious impacts of a 900-MHz electromagnetic field on hippocampal pyramidal neurons of 8-week-old Sprague Dawley male rats. *Brain Res*. 2015. doi:10.1016/j.brainres.2015.07.042
95. Tang J, Zhang Y, Yang L, et al. Exposure to 900 MHz electromagnetic fields activates the mcp-1/ERK pathway and causes blood-brain barrier damage and cognitive impairment in rats. *Brain Res*. 2015. doi:10.1016/j.brainres.2015.01.019
96. Bellieni C V., Pinto I, Bogi A, Zoppetti N, Andreuccetti D, Buonocore G. Exposure to electromagnetic fields from laptop use of “laptop” computers. *Arch Environ Occup Heal*. 2012. doi:10.1080/19338244.2011.564232
97. Goldstein BD. The precautionary principle also applies to public health actions. *Am J Public Health*. 2001. doi:10.2105/AJPH.91.9.1358

Endnotes

Chapter 8

1. Pediatrics TAA of. Policy Statement: Breastfeeding and the Use of Human Milk. *Pediatrics*. 2012;129(3):e827-41. doi:10.1542/peds.2011-3552
2. Pound CM, Unger SL. The baby-friendly Initiative: Protecting, promoting and supporting breastfeeding - Nutrition and Gastroenterology Committee and Hospital Paediatrics Section Canadian Paediatric Society. *Paediatr Child Heal*. 2012;17(6):317-321. doi:10.1093/pch/17.6.317
3. The Baby-Friendly Initiative: Protecting, promoting and supporting breastfeeding. *Paediatr Child Health (Oxford)*. 2012. doi:10.1093/pch/17.6.317
4. Galton Bachrach VR, Schwarz E, Bachrach LR. Breastfeeding and the risk of hospitalization for respiratory disease in infancy: A meta-analysis. *Arch Pediatr Adolesc Med*. 2003. doi:10.1001/archpedi.157.3.237
5. Dror DK, Allen LH. Overview of nutrients in humanmilk. *Adv Nutr*. 2018. doi:10.1093/advances/nmy022
6. Ballard O, Morrow AL. Human Milk Composition. Nutrients and Bioactive Factors. *Pediatr Clin North Am*. 2013. doi:10.1016/j.pcl.2012.10.002
7. Innis SM. Impact of maternal diet on human milk composition and neurological development of infants. *Am J Clin Nutr*. 2014. doi:10.3945/ajcn.113.072595
8. Bravi F, Wiens F, Decarli A, Dal Pont A, Agostoni C, Ferraroni M. Impact of maternal nutrition on breast-milk composition: A systematic review. *Am J Clin Nutr*. 2016. doi:10.3945/ajcn.115.120881
9. Heine RG, Alrefae F, Bachina P, et al. Lactose intolerance and gastrointestinal cow's milk allergy in infants and children - Common misconceptions revisited. *World Allergy Organ J*. 2017. doi:10.1186/s40413-017-0173-0
10. Cunnane SC, Crawford MA. Energetic and nutritional constraints on infant brain development: Implications for brain expansion during human evolution. *J Hum Evol*. 2014. doi:10.1016/j.jhevol.2014.05.001
11. Jabr F. Does Thinking Really Hard Burn More Calories? *Sci Am*. 2012.
12. Chiurazzi et al. Human milk and brain development in infants. *Reproductive Medicine*. 2021.107-117.
13. Romero-Velarde E, Delgado-Franco D, García-Gutiérrez M, et al. The importance of lactose in the human diet: Outcomes of a Mexican consensus meeting. *Nutrients*. 2019;11(11):2737. doi:10.3390/nu11112737
14. Francavilla R, Calasso M, Calace L, et al. Effect of lactose on gut microbiota and metabolome of infants with cow's milk allergy. *Pediatr Allergy Immunol*. 2012;23(5):420-427. doi:10.1111/j.1399-3038.2012.01286.x
15. Jones RB, Berger PK, Plows JF, et al. Lactose-reduced infant formula with added corn syrup solids is associated with a distinct gut microbiota in Hispanic infants. *Gut Microbes*. 2020. doi:10.1080/19490976.2020.1813534

16. Jakobsen LMA, Sundekilde UK, Andersen HJ, Nielsen DS, Bertram HC. Lactose and Bovine Milk Oligosaccharides Synergistically Stimulate *B. longum* subsp. *longum* Growth in a Simplified Model of the Infant Gut Microbiome. *J Proteome Res.* 2019. doi:10.1021/acs.jproteome.9b00211
17. Berger PK, Fields DA, Demerath EW, Fujiwara H, Goran MI. High-fructose corn-syrup-sweetened beverage intake increases 5-hour breast milk fructose concentrations in lactating women. *Nutrients.* 2018. doi:10.3390/nu10060669
18. Goran MI, Martin AA, Alderete TL, Fujiwara H, Fields DA. Fructose in breast milk is positively associated with infant body composition at 6 months of age. *Nutrients.* 2017. doi:10.3390/nu9020146
19. Vergilio Visentainer J, Oliveira Santos O, Maldaner L, et al. Lipids and Fatty Acids in Human Milk: Benefits and Analysis. In: *Biochemistry and Health Benefits of Fatty Acids.* ; 2018. doi:10.5772/intechopen.80429
20. Mosca F, Gianni ML. Human milk: composition and health benefits. *Pediatr Med Chir.* 2017;39(2):155. doi:10.4081/pmc.2017.155
21. Koletzko B. Human milk lipids. *Ann Nutr Metab.* 2017. doi:10.1159/000452819
22. N.J. A, B. K, K. ML-D. Human breast milk: A review on its composition and bioactivity. *Early Hum Dev.* 2015.
23. Grote V, Verduci E, Scaglioni S, et al. Breast milk composition and infant nutrient intakes during the first 12 months of life. *Eur J Clin Nutr.* 2016. doi:10.1038/ejcn.2015.162
24. Delplanque B, Gibson R, Koletzko B, Lapillonne A, Strandvik B. Lipid Quality in Infant Nutrition: Current Knowledge and Future Opportunities. *J Pediatr Gastroenterol Nutr.* 2015;61(1):8-17. doi:10.1097/MPG.0000000000000818
25. Friesen R, Innis SM. Trans fatty acids in human milk in Canada declined with the introduction of trans fat food labeling. *J Nutr.* 2006;136(10):2558-2561. doi:10.1093/jn/136.10.2558
26. Brenna JT, Salem N, Sinclair AJ, Cunnane SC. α -Linolenic acid supplementation and conversion to n-3 long-chain polyunsaturated fatty acids in humans. *Prostaglandins Leukot Essent Fat Acids.* 2009. doi:10.1016/j.plefa.2009.01.004
27. Cunnane SC. Ketones, omega-3 fatty acids and the Yin-Yang balance in the brain: insights from infant development and Alzheimer's disease, and implications for human brain evolution. *OCL.* 2018. doi:10.1051/ocl/2018020
28. Cotter DG, D'Avignon DA, Wentz AE, Weber ML, Crawford PA. Obligate role for ketone body oxidation in neonatal metabolic homeostasis. *J Biol Chem.* 2011. doi:10.1074/jbc.M110.192369
29. Bougneres PF, Lemmel C, Ferre P, Bier DM. Ketone body transport in the human neonate and infant. *J Clin Invest.* 1986. doi:10.1172/JCI112299
30. Bhinder G, Allaire JM, Garcia C, et al. Milk Fat Globule Membrane Supplementation in Formula Modulates the Neonatal Gut Microbiome and Normalizes Intestinal Development. *Sci Rep.* 2017. doi:10.1038/srep45274
31. Hernell O, Timby N, Domellöf M, Lönnerdal B. Clinical Benefits of Milk Fat Globule Membranes for Infants and Children. *J Pediatr.* 2016. doi:10.1016/j.jpeds.2016.02.077

32. Timby N, Domellöf M, Lönnerdal B, Hernell O. Supplementation of infant formula with bovine milk fat globule membranes. *Adv Nutr*. 2017. doi:10.3945/an.116.014142
33. Donovan SM, Comstock SS. Human milk oligosaccharides influence neonatal mucosal and systemic immunity. *Ann Nutr Metab*. 2017. doi:10.1159/000452818
34. Plaza-Díaz J, Fontana L, Gil A. Human milk oligosaccharides and immune system development. *Nutrients*. 2018. doi:10.3390/nu10081038
35. Doare K Le, Holder B, Bassett A, Pannaraj PS. Mother's Milk: A purposeful contribution to the development of the infant microbiota and immunity. *Front Immunol*. 2018. doi:10.3389/fimmu.2018.00361
36. Triantis V, Bode L, van Neerven JRJ. Immunological effects of human milk oligosaccharides. *Front Pediatr*. 2018. doi:10.3389/fped.2018.00190
37. Warner BB. The contribution of the gut microbiome to neurodevelopment and neuropsychiatric disorders. *Pediatr Res*. 2019. doi:10.1038/s41390-018-0191-9
38. Vandenas Y, Zakharova I, Dmitrieva Y. Oligosaccharides in infant formula: More evidence to validate the role of prebiotics. *Br J Nutr*. 2015. doi:10.1017/S0007114515000823
39. Fischer LM, Da Costa KA, Galanko J, et al. Choline intake and genetic polymorphisms influence choline metabolite concentrations in human breast milk and plasma. *Am J Clin Nutr*. 2010;92(2):336-346. doi:10.3945/ajcn.2010.29459
40. Wiedeman AM, Whitfield KC, March KM, et al. Concentrations of water-soluble forms of choline in human milk from lactating women in Canada and Cambodia. *Nutrients*. 2018;10(3):3-12. doi:10.3390/nu10030381
41. Chew TW, Jiang X, Yan J, et al. Folate intake, Mthfr genotype, and sex modulate choline metabolism in mice. *J Nutr*. 2011. doi:10.3945/jn.111.138859
42. Abratte CM, Wang W, Li R, Moriarty DJ, Caudill MA. Folate intake and the MTHFR C677T genotype influence choline status in young Mexican American women. *J Nutr Biochem*. 2008;19(3):158-165. doi:10.1016/j.jnutbio.2007.02.004
43. Cheatham CL, Sheppard KW. Synergistic effects of human milk nutrients in the support of infant recognition memory: An observational study. *Nutrients*. 2015;7(11):9079-9095. doi:10.3390/nu7115452
44. Mun JG, Legette LL, Ikonte CJ, Mitmesser SH. Choline and DHA in maternal and infant nutrition: Synergistic implications in brain and eye health. *Nutrients*. 2019. doi:10.3390/nu11051125
45. Sherry CL, Oliver JS, Renzi LM, Marriage BJ. Lutein supplementation increases breast milk and plasma lutein concentrations in lactating women and infant plasma concentrations but does not affect other carotenoids. *J Nutr*. 2014. doi:10.3945/jn.114.192914
46. Capeding R, Geganayao CP, Calimon N, et al. Lutein-fortified infant formula fed to healthy term infants: Evaluation of growth effects and safety. *Nutr J*. 2010. doi:10.1186/1475-2891-9-22
47. Tsopmo A. Phytochemicals in human milk and their potential antioxidative protection. *Antioxidants*. 2018. doi:10.3390/antiox7020032

48. Song BJ, Jouni ZE, Ferruzzi MG. Assessment of phytochemical content in human milk during different stages of lactation. *Nutrition*. 2013. doi:10.1016/j.nut.2012.07.015
49. Zimmermann P, Curtis N. Breast milk microbiota: A complex microbiome with multiple impacts and conditioning factors. *J Infect*. 2020. doi:10.1016/j.jinf.2020.01.023
50. Kim SY, Yi DY. Analysis of the human breast milk microbiome and bacterial extracellular vesicles in healthy mothers. *Exp Mol Med*. 2020. doi:10.1038/s12276-020-0470-5
51. Lara-Villoslada F, Olivares M, Xaus J. The balance between caseins and whey proteins in cow's milk determines its allergenicity. *J Dairy Sci*. 2005;88(5):1654-1660. doi:10.3168/jds.S0022-0302(05)72837-X
52. Rhoads JM, Collins J, Fatheree NY, et al. Infant Colic Represents Gut Inflammation and Dysbiosis. *J Pediatr*. 2018;203:55-61.e3. doi:10.1016/j.jpeds.2018.07.042
53. Jakobsson I, Lindberg T. Cow's milk proteins cause infantile colic in breast-fed infants: A double-blind crossover study. *Pediatrics*. 1983.
54. Lothe L, Lindberg T. Cow's milk whey protein elicits symptoms of infantile colic in colicky formula-fed infants: A double-blind crossover study. *Pediatrics*. 1989.
55. Rajani PS, Martin H, Groetch M, Järvinen KM. Presentation and Management of Food Allergy in Breastfed Infants and Risks of Maternal Elimination Diets. *J Allergy Clin Immunol Pract*. 2020;8(1):52-67. doi:10.1016/j.jaip.2019.11.007
56. Hill DJ, Roy N, Heine RG, et al. Effect of a low-allergen maternal diet on colic among breastfed infants: A randomized, controlled trial. *Pediatrics*. 2005. doi:10.1542/peds.2005-0147
57. Baldassarre ME, Di Mauro A, Mastromarino P, et al. Administration of a multi-strain probiotic product to women in the perinatal period differentially affects the breast milk cytokine profile and may have beneficial effects on neonatal gastrointestinal functional symptoms. A randomized clinical trial. *Nutrients*. 2016. doi:10.3390/nu8110677
58. Sung V et al.. Probiotics to prevent or treat excessive infant crying: Systematic review and meta-analysis. *JAMA Pediatr*. 2013. 167(12):1150-1157.
59. Baldassarre ME, Di Mauro A, Tafuri S, et al. Effectiveness and safety of a probiotic-mixture for the treatment of infantile colic: A double-blind, randomized, placebo-controlled clinical trial with fecal real-time PCR and NMR-Based metabolomics analysis. *Nutrients*. 2018;10(2). doi:10.3390/nu10020195
60. Nocerino R, De Filippis F, Cecere G, et al. The therapeutic efficacy of Bifidobacterium animalis subsp. lactis BB12® in infant colic: A randomised, double blind, placebo-controlled trial. *Aliment Pharmacol Ther*. 2020;51(1):110-120. doi:10.1111/apt.15561
61. James Martin A, Pratt N, Declan Kennedy J, et al. Natural history and familial relationships of infant spilling to 9 years of age. *Pediatrics*. 2002. doi:10.1542/peds.109.6.1061
62. Lodato F, Azzaroli F, Turco L, et al. Adverse effects of proton pump inhibitors. *Best Pract Res Clin Gastroenterol*. 2010. doi:10.1016/j.bpg.2009.11.004

63. Sheen E, Triadafilopoulos G. Adverse effects of long-term proton pump inhibitor therapy. *Dig Dis Sci*. 2011. doi:10.1007/s10620-010-1560-3
64. Lombardo L, Foti M, Ruggia O, Chiecchio A. Increased Incidence of Small Intestinal Bacterial Overgrowth During Proton Pump Inhibitor Therapy. *Clin Gastroenterol Hepatol*. 2010. doi:10.1016/j.cgh.2009.12.022
65. Duncan DR, Mitchell PD, Larson K, McSweeney ME, Rosen RL. Association of Proton Pump Inhibitors with Hospitalization Risk in Children with Oropharyngeal Dysphagia. In: *JAMA Otolaryngology - Head and Neck Surgery*. ; 2018. doi:10.1001/jamaoto.2018.1919
66. Eichenwald EC. Diagnosis and Management of Gastroesophageal Reflux in Preterm Infants.; 2018.
67. Rosen R, Vandenplas Y, Singendonk M, et al. Pediatric Gastroesophageal Reflux Clinical Practice Guidelines: Joint Recommendations of the North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition and the European Society for Pediatric Gastroenterology, Hepatology, and Nutrition. *J Pediatr Gastroenterol Nutr*. 2018. doi:10.1097/MPG.0000000000001889
68. Duncan DR, Rosen RL. Current insights into the pharmacologic and nonpharmacologic management of gastroesophageal reflux in infants. *Neoreviews*. 2016. doi:10.1542/neo.17-4-e203
69. Lightdale JR, Gremse DA, Heitlinger LA, et al. Gastroesophageal reflux: Management guidance for the pediatrician. *Pediatrics*. 2013. doi:10.1542/peds.2013-0421
70. Orenstein SR, Hassall E, Furmaga-Jablonska W, Atkinson S, Raanan M. Multicenter, Double-Blind, Randomized, Placebo-Controlled Trial Assessing the Efficacy and Safety of Proton Pump Inhibitor Lansoprazole in Infants with Symptoms of Gastroesophageal Reflux Disease. *J Pediatr*. 2009. doi:10.1016/j.jpeds.2008.09.054
71. Van Der Pol RJ, Smits MJ, Van Wijk MP, Omari TI, Tabbers MM, Benning MA. Efficacy of proton-pump inhibitors in children with gastroesophageal reflux disease: A systematic review. *Pediatrics*. 2011. doi:10.1542/peds.2010-2719
72. Moore DJ, Siang-Kuo Tao B, Lines DR, Hirte C, Heddle ML, Davidson GP. Double-blind placebo-controlled trial of omeprazole in irritable infants with gastroesophageal reflux. *J Pediatr*. 2003. doi:10.1067/S0022-3476(03)00207-5
73. Vandenplas Y, Rudolph CD, Di Lorenzo C, et al. Pediatric gastroesophageal reflux clinical practice guidelines: Joint recommendations of the North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition (NASPGHAN) and the European Society for Pediatric Gastroenterology, Hepatology, a. *J Pediatr Gastroenterol Nutr*. 2009. doi:10.1097/MPG.0b013e3181b7f563
74. Gonzalez Ayerbe JI, Hauser B, Salvatore S, Vandenplas Y. Diagnosis and management of gastroesophageal reflux disease in infants and children: From guidelines to clinical practice. *Pediatr Gastroenterol Hepatol Nutr*. 2019. doi:10.5223/pghn.2019.22.2.107
75. Indrio F, Riezzo G, Raimondi F, et al. Lactobacillus reuteri accelerates gastric emptying and improves regurgitation in infants. *Eur J Clin Invest*. 2011. doi:10.1111/j.1365-2362.2010.02425.x
76. Indrio F, Di Mauro A, Riezzo G, et al. Prophylactic use of a probiotic in the prevention of colic, regurgitation, and functional constipation a randomized clinical trial. *JAMA Pediatr*. 2014;168(3):228-233. doi:10.1001/jamapediatrics.2013.4367

77. Baldassarre ME, Rizzo V, Di Mauro A, et al. Efficacy and safety of a probiotic-mixture for the treatment of infantile colic: A double blind, randomized, placebo-controlled clinical trial. *Dig Liver Dis.* 2017. doi:10.1016/j.dld.2017.09.104
78. Jakobsson I, Lothe L, Ley D, Borschel M. Effectiveness of casein hydrolysate feedings in infants with colic. *Acta Paediatr.* 2007;89(1):18-21. doi:10.1111/j.1651-2227.2000.tb01180.x

Endnotes

Chapter 9

1. Lonnerdal B, Forsum E. Casein content of human milk. *Am J Clin Nutr.* 1985. doi:10.1093/ajcn/41.1.113
2. Lönnerdal B. Nutritional and physiologic significance of human milk proteins. *Am J Clin Nutr.* 2003. doi:10.1093/ajcn/77.6.1537s
3. Donovan SM. Human Milk Proteins: Composition and Physiological Significance. *Nestle Nutr Inst Workshop Ser.* 2019. doi:10.1159/000490298
4. Liao Y, Weber D, Xu W, Durbin-Johnson BP, Phinney BS, Lönnerdal B. Absolute Quantification of Human Milk Caseins and the Whey/Casein Ratio during the First Year of Lactation. *J Proteome Res.* 2017;16(11):4113-4121. doi:10.1021/acs.jproteome.7b00486
5. Vandenas Y, Brueton M, Dupont C, et al. Guidelines for the diagnosis and management of cow's milk protein allergy in infants. *Arch Dis Child.* 2007. doi:10.1136/adc.2006.110999
6. Brill H. Approach to milk protein allergy in infants. *Can Fam Physician.* 2008.
7. Committee on Nutrition. American Academy of Pediatrics: Hypoallergenic infant formulas. *Pediatrics.* 2000.
8. Agostoni C, Axelsson I, Goulet O, et al. Soy Protein Infant Formulae and Follow-On Formulae. *J Pediatr Gastroenterol Nutr.* 2006;42(4):352-361. doi:10.1097/01.mpg.0000189358.38427.cd
9. Westmark CJ. Soy-Based Therapeutic Baby Formulas: Testable Hypotheses Regarding the Pros and Cons. *Front Nutr.* 2017. doi:10.3389/fnut.2016.00059
10. Patisaul HB, Jefferson W. The pros and cons of phytoestrogens. *Front Neuroendocrinol.* 2010. doi:10.1016/j.yfrne.2010.03.003
11. Harlid S, Adgent M, Jefferson WN, et al. Soy formula and epigenetic modifications: Analysis of vaginal epithelial cells from Infant girls in the IFED study. *Environ Health Perspect.* 2017. doi:10.1289/EHP428
12. Bhatia J, Greer F. Use of soy protein-based formulas in infant feeding. *Pediatrics.* 2008. doi:10.1542/peds.2008-0564
13. Koletzko B, Baker S, Cleghorn G, et al. Global standard for the composition of infant formula: Recommendations of an ESPGHAN coordinated international expert group. *J Pediatr Gastroenterol Nutr.* 2005. doi:10.1097/01.mpg.0000187817.38836.42
14. Fidler Mis N, Braegger C, Bronsky J, et al. Sugar in Infants, Children and Adolescents: A Position Paper of the European Society for Paediatric Gastroenterology, Hepatology and Nutrition Committee on Nutrition. *J Pediatr Gastroenterol Nutr.* 2017. doi:10.1097/MPG.0000000000001733
15. Hinds LM, Moser EAS, Eckert G, Gregory RL. Effect of Infant Formula on Streptococcus Mutans Biofilm Formation. *J Clin Pediatr Dent.* 2016. doi:10.17796/1053-4628-40.3.178
16. Innis SM. Impact of maternal diet on human milk composition and neurological development of infants. *Am J Clin Nutr.* 2014. doi:10.3945/ajcn.113.072595

17. Innis SM. Maternal Nutrition, Genetics, and Human Milk Lipids. *Curr Nutr Rep*. 2013. doi:10.1007/s13668-013-0048-0
18. Yao M, Lien EL, Capeding MRZ, et al. Effects of term infant formulas containing high sn-2 palmitate with and without oligofructose on stool composition, stool characteristics, and bifidogenicity. *J Pediatr Gastroenterol Nutr*. 2014. doi:10.1097/MPG.0000000000000443
19. Yaron S, Shachar D, Abramas L, et al. Effect of high β -palmitate content in infant formula on the intestinal microbiota of term infants. *J Pediatr Gastroenterol Nutr*. 2013. doi:10.1097/MPG.0b013e31827e1ee2
20. Souza CO De, Leite MEQ, Lasekan J, et al. Milk protein-based formulas containing different oils affect fatty acids balance in term infants: A randomized blinded crossover clinical trial. *Lipids Health Dis*. 2017;16(1):78. doi:10.1186/s12944-017-0457-y
21. Havlicekova Z, Jesenak M, Banovcin P, Kuchta M. Beta-palmitate - A natural component of human milk in supplemental milk formulas. *Nutr J*. 2016. doi:10.1186/s12937-016-0145-1
22. Miles EA, Calder PC. The influence of the position of palmitate in infant formula triacylglycerols on health outcomes. *Nutr Res*. 2017. doi:10.1016/j.nutres.2017.05.009
23. Wiedeman AM, Barr SI, Green TJ, Xu Z, Innis SM, Kitts DD. Dietary choline intake: Current state of knowledge across the life cycle. *Nutrients*. 2018;10(10). doi:10.3390/nu10101513
24. Capeding R, Gepanayao CP, Calimon N, et al. Lutein-fortified infant formula fed to healthy term infants: Evaluation of growth effects and safety. *Nutr J*. 2010. doi:10.1186/1475-2891-9-22
25. Bettler J, Zimmer JP, Neuringer M, Derusso PA. Serum lutein concentrations in healthy term infants fed human milk or infant formula with lutein. *Eur J Nutr*. 2010;49(1):45-51. doi:10.1007/s00394-009-0047-5
26. Domellöf M, Braegger C, Campoy C, et al. Iron requirements of infants and toddlers. *J Pediatr Gastroenterol Nutr*. 2014. doi:10.1097/MPG.0000000000000206
27. Baker SS, Cochran WJ, Flores CA, et al. Iron fortification of infant formulas. *Pediatrics*. 1999. doi:10.1542/peds.104.1.119
28. Hernell O, Fewtrell MS, Georgieff MK, Krebs NF, Lönnerdal B. Summary of current recommendations on iron provision and monitoring of iron status for breastfed and formula-fed infants in resource-rich and resource-constrained countries. *J Pediatr*. 2015. doi:10.1016/j.jpeds.2015.07.020
29. Georgieff MK, Krebs NF, Cusick SE. The Benefits and Risks of Iron Supplementation in Pregnancy and Childhood. *Annu Rev Nutr*. 2019;39(1):121-146. doi:10.1146/annurev-nutr-082018-124213
30. Lozoff B, Castillo M, Clark KM, Smith JB. Iron-fortified vs low-iron infant formula: Developmental outcome at 10 years. *Arch Pediatr Adolesc Med*. 2012. doi:10.1001/archpediatrics.2011.197
31. DiMaggio DM, Du N, Scherer C, et al. Comparison of Imported European and US Infant Formulas: Labeling, Nutrient and Safety Concerns. *J Pediatr Gastroenterol Nutr*. 2019. doi:10.1097/MPG.0000000000002395
32. Basnet S, Schneider M, Gazit A, Mander G, Doctor A. Fresh goat's milk for infants: Myths and realities a review. *Pediatrics*. 2010. doi:10.1542/peds.2009-1906

FEEDING OUR CHILDREN – CHAPTER REFERENCES

33. Scientific Opinion on the suitability of goat milk protein as a source of protein in infant formulae and in follow-on formulae. *EFSA J.* 2012. doi:10.2903/j.efsa.2012.2603
34. Georgieff MK. Iron assessment to protect the developing brain. In: *American Journal of Clinical Nutrition.* ; 2017. doi:10.3945/ajcn.117.155846
35. Cusick SE, Georgieff MK, Rao R. Approaches for reducing the risk of early-life iron deficiency-induced brain dysfunction in children. *Nutrients.* 2018. doi:10.3390/nu10020227

Endnotes

Chapter 10

1. Cusick SE, Georgieff MK. The Role of Nutrition in Brain Development: The Golden Opportunity of the “First 1000 Days.” *J Pediatr*. 2016. doi:10.1016/j.jpeds.2016.05.013
2. Fewtrell M, Bronsky J, Campoy C, et al. Complementary feeding: A position paper by the European Society for Paediatric Gastroenterology, Hepatology, and Nutrition (ESPGHAN) committee on nutrition. *J Pediatr Gastroenterol Nutr*. 2017. doi:10.1097/MPG.0000000000001454
3. Domellöf M, Braegger C, Campoy C, et al. Iron requirements of infants and toddlers. *J Pediatr Gastroenterol Nutr*. 2014. doi:10.1097/MPG.0000000000000206
4. Huh SY, Rifas-Shiman SL, Taveras EM, Oken E, Gillman MW. Timing of solid food introduction and risk of obesity in preschool-aged children. *Pediatrics*. 2011;127(3):e544. doi:10.1542/peds.2010-0740
5. Barrera CM, Perrine CG, Li R, Scanlon KS. Age at Introduction to Solid Foods and Child Obesity at 6 Years. *Child Obes*. 2016. doi:10.1089/chi.2016.0021
6. Differding MK, Benjamin-Neelon SE, Hoyo C, Østbye T, Mueller NT. Timing of complementary feeding is associated with gut microbiota diversity and composition and short chain fatty acid concentrations over the first year of life. *BMC Microbiol*. 2020;20(1):56. doi:10.1186/s12866-020-01723-9
7. Agostoni C, Przyrembel H. The timing of introduction of complementary foods and later health. *World Rev Nutr Diet*. 2013;108:63-70. doi:10.1159/000351486
8. Przyrembel H. Timing of introduction of complementary food: Short- and long-term health consequences. *Ann Nutr Metab*. 2012. doi:10.1159/000336287
9. Pérez-Escamilla R, Segura-Pérez S, Lott M. Feeding Guidelines for Infants and Young Toddlers: A Responsive Parenting Approach | Feeding Guidelines for Infants and Young Toddlers: A Responsive Parenting Approach Healthy Eating Research Building Evidence to Prevent Childhood Obesity.; 2017.
10. Krebs NF. Food-based complementary feeding strategies for breast-fed infants: What’s the evidence that it matters? *Nutr Today*. 2014. doi:10.1097/NT.0000000000000064
11. Finn K, Callen C, Bhatia J, Reidy K, Bechard LJ, Carvalho R. Importance of dietary sources of iron in infants and toddlers: Lessons from the FITS Study. *Nutrients*. 2017. doi:10.3390/nu9070733
12. Schwarzenberg SJ, Georgieff MK. Advocacy for improving nutrition in the first 1000 days to support childhood development and adult health. *Pediatrics*. 2018. doi:10.1542/peds.2017-3716
13. Cunningham-Rundles S, Lin H, Ho-Lin D, Dnistrian A, Cassileth BR, Perlman JM. Role of nutrients in the development of neonatal immune response. In: *Nutrition Reviews*. Vol 67. NIH Public Access; 2009:S152. doi:10.1111/j.1753-4887.2009.00236.x
14. Aly SS, Fayed HM, Ismail AM, Abdel Hakeem GL. Assessment of peripheral blood lymphocyte subsets in children with iron deficiency anemia. *BMC Pediatr*. 2018. doi:10.1186/s12887-018-0990-5
15. Ekiz C, Agaoglu L, Karakas Z, Gurel N, Yalcin I. The effect of iron deficiency anemia on the function of the immune system. *Hematol J*. 2005. doi:10.1038/sj.thj.6200574

16. Bates M, Gupta PM, Cogswell ME, Hamner HC, Perrine CG. Iron content of commercially available infant and toddler foods in the united states, 2015. *Nutrients*. 2020. doi:10.3390/nu12082439
17. Krebs NF, Westcott JE, Culbertson DL, Sian L, Miller L V., Hambidge KM. Comparison of complementary feeding strategies to meet zinc requirements of older breastfed infants. *Am J Clin Nutr*. 2012. doi:10.3945/ajcn.112.036046
18. Krebs NF, Westcott JE, Butler N, Robinson C, Bell M, Hambidge KM. Meat as a first complementary food for breastfed infants: Feasibility and impact on zinc intake and status. *J Pediatr Gastroenterol Nutr*. 2006. doi:10.1097/01.mpg.0000189346.25172.fd
19. Hunt JR. Bioavailability of iron, zinc, and other trace minerals from vegetarian diets. In: *American Journal of Clinical Nutrition*. ; 2003. doi:10.1093/ajcn/78.3.633s
20. Hurrell R, Egli I. Iron bioavailability and dietary reference values. *Am J Clin Nutr*. 2010. doi:10.3945/ajcn.2010.28674F
21. Krebs NF. Dietary zinc and iron sources, physical growth and cognitive development of breastfed infants. In: *Journal of Nutrition*. ; 2000. doi:10.1093/jn/130.2.358s
22. Gibson RS, Heath ALM, Szymlek-Gay EA. Is iron and zinc nutrition a concern for vegetarian infants and young children in industrialized countries? In: *American Journal of Clinical Nutrition*. ; 2014. doi:10.3945/ajcn.113.071241
23. Roos N, Sørensen JC, Sørensen H, et al. Screening for anti-nutritional compounds in complementary foods and food aid products for infants and young children. *Matern Child Nutr*. 2013. doi:10.1111/j.1740-8709.2012.00449.x
24. Kortman GAM, Raffatellu M, Swinkels DW, Tjalsma H. Nutritional iron turned inside out: Intestinal stress from a gut microbial perspective. *FEMS Microbiol Rev*. 2014. doi:10.1111/1574-6976.12086
25. Jaeggi T, Kortman GAM, Moretti D, et al. Iron fortification adversely affects the gut microbiome, increases pathogen abundance and induces intestinal inflammation in Kenyan infants. *Gut*. 2015. doi:10.1136/gutjnl-2014-307720
26. Paganini D, Zimmermann MB. The effects of iron fortification and supplementation on the gut microbiome and diarrhea in infants and children: A review. In: *American Journal of Clinical Nutrition*. ; 2017. doi:10.3945/ajcn.117.156067
27. Finlayson-Trick EC, Fischer JA, Goldfarb DM, Karakochuk CD. The Effects of Iron Supplementation and Fortification on the Gut Microbiota: A Review. *Gastrointest Disord*. 2020. doi:10.3390/gidisord2040030
28. Henderson LM, Brewer GJ, Dressman JB, et al. Effect of intragastric pH on the absorption of oral zinc acetate and zinc oxide in young healthy volunteers. *J Parenter Enter Nutr*. 1995. doi:10.1177/0148607195019005393
29. Overview of Acid Secretion - Gastrointestinal Disorders - Merck Manuals Professional Edition. <https://www.merckmanuals.com/en-ca/professional/gastrointestinal-disorders/gastritis-and-peptic-ulcer-disease/overview-of-acid-secretion>. Accessed October 16, 2020.
30. Fernandez E, Perez R, Hernandez A, Tejada P, Arteta M, Ramos JT. Factors and mechanisms for pharmacokinetic differences between pediatric population and adults. *Pharmaceutics*. 2011. doi:10.3390/pharmaceutics3010053

31. Lam JR, Schneider JL, Quesenberry CP, Corley DA. Proton Pump Inhibitor and Histamine-2 Receptor Antagonist Use and Iron Deficiency. *Gastroenterology*. 2017. doi:10.1053/j.gastro.2016.11.023
32. Farrell. Proton Pump Inhibitors Interfere With Zinc Absorption and Zinc Body Stores. *Gastroenterol Res*. 2011. doi:10.4021/gr379w
33. Sturniolo GC, Montino MC, Rossetto L, et al. Inhibition of gastric acid secretion reduces zinc absorption in man. *J Am Coll Nutr*. 1991.
34. Brugger D, Windisch WM. Subclinical zinc deficiency impairs pancreatic digestive enzyme activity and digestive capacity of weaned piglets. *Br J Nutr*. 2016. doi:10.1017/S0007114516002105
35. Kelleher SL, McCormick NH, Velasquez V, Lopez V. Zinc in specialized secretory tissues: Roles in the pancreas, prostate, and mammary gland. *Adv Nutr*. 2011. doi:10.3945/an.110.000232
36. Krebs NF, Miller L V., Michael Hambidge K. Zinc deficiency in infants and children: A review of its complex and synergistic interactions. *Paediatr Int Child Health*. 2014. doi:10.1179/2046905514Y.0000000151
37. Hambidge KM, Krebs NF. Zinc deficiency: A special challenge. In: *Journal of Nutrition*. ; 2007. doi:10.1093/jn/137.4.1101
38. Miller L V., Hambidge KM, Krebs NF. Zinc absorption is not related to dietary phytate intake in infants and young children based on modeling combined data from multiple studies. *J Nutr*. 2015. doi:10.3945/jn.115.213074
39. Lönnerdal B. Dietary factors influencing zinc absorption. In: *Journal of Nutrition*. ; 2000. doi:10.1093/jn/130.5.1378s
40. Kiela PR, Ghishan FK. Physiology of intestinal absorption and secretion. *Best Pract Res Clin Gastroenterol*. 2016. doi:10.1016/j.bpg.2016.02.007
41. Maares M, Haase H. A guide to human zinc absorption: General overview and recent advances of in vitro intestinal models. *Nutrients*. 2020. doi:10.3390/nu12030762
42. Brenna JT. Efficiency of conversion of alpha-linolenic acid to long chain n-3 fatty acids in man. *Curr Opin Clin Nutr Metab Care*. 2002. doi:10.1097/00075197-200203000-00002
43. Brenna JT, Salem N, Sinclair AJ, Cunnane SC. α -Linolenic acid supplementation and conversion to n-3 long-chain polyunsaturated fatty acids in humans. *Prostaglandins Leukot Essent Fat Acids*. 2009. doi:10.1016/j.plefa.2009.01.004
44. Gerster H. Can adults adequately convert α -linolenic acid (18:3n-3) to eicosapentaenoic acid (20:5n-3) and docosahexaenoic acid (22:6n-3)? *Int J Vitam Nutr Res*. 1998.
45. Sheppard KW, Cheatham CL. Omega-6/omega-3 fatty acid intake of children and older adults in the U.S.: Dietary intake in comparison to current dietary recommendations and the Healthy Eating Index. *Lipids Health Dis*. 2018;17(1). doi:10.1186/s12944-018-0693-9
46. Goyens PLL, Spilker ME, Zock PL, Katan MB, Mensink RP. Conversion of α -linolenic acid in humans is influenced by the absolute amounts of α -linolenic acid and linoleic acid in the diet and not by their ratio. *Am J Clin Nutr*. 2006. doi:10.1093/ajcn/84.1.44
47. Daley CA, Abbott A, Doyle PS, Nader GA, Larson S. A review of fatty acid profiles and antioxidant content in grass-fed and grain-fed beef. *Nutr J*. 2010;9(1):10. doi:10.1186/1475-2891-9-10

48. Iannotti LL, Lutter CK, Waters WF, et al. Eggs early in complementary feeding increase choline pathway biomarkers and DHA: A randomized controlled trial in Ecuador. *Am J Clin Nutr.* 2017. doi:10.3945/ajcn.117.160515
49. Minich DM. A Review of the Science of Colorful, Plant-Based Food and Practical Strategies for “Eating the Rainbow.” *J Nutr Metab.* 2019;2019:1-19. doi:10.1155/2019/2125070
50. Vauzour D, Rodriguez-Mateos A, Corona G, Oruna-Concha MJ, Spencer JPE. Polyphenols and human health: Prevention of disease and mechanisms of action. *Nutrients.* 2010;2(11):1106-1131. doi:10.3390/nu2111106
51. Mis F, Nataša Fidler Mis Ā, Braegger C, et al. Sugar in Infants, Children and Adolescents: A Position Paper of the European Society for Paediatric Gastroenterology, Hepatology and Nutrition Committee on Nutrition Sugar in Infants, Children and Adolescents: A Position Paper of the European Society for Paediatric Gastroenterology, Hepatology and Nutrition Committee on Nutrition ESPGHAN Committee on Nutrition. *Nutr Comm Nutr J Pediatr Gastroenterol Nutr.* 2017;65(6):681-696. doi:10.1097/MPG.0000000000001733
52. Fidler Mis N, Braegger C, Bronsky J, et al. Sugar in Infants, Children and Adolescents: A Position Paper of the European Society for Paediatric Gastroenterology, Hepatology and Nutrition Committee on Nutrition. *J Pediatr Gastroenterol Nutr.* 2017. doi:10.1097/MPG.0000000000001733
53. Jenco M. AHA: Limit children’s sugar consumption to 6 teaspoons per day. *AAP News.* October 2020.
54. Koriath T. Added sugar in kids’ diets: How much is too much? *AAP News.* October 2020.
55. Marti A. Ultra-processed foods are not “real food” but really affect your health. *Nutrients.* 2019;11(8). doi:10.3390/nu11081902
56. Rauber F, Louzada ML da C, Steele EM, Millett C, Monteiro CA, Levy RB. Ultra-processed food consumption and chronic non-communicable diseases-related dietary nutrient profile in the UK (2008–2014). *Nutrients.* 2018;10(5). doi:10.3390/nu10050587
57. Klerks M, Bernal MJ, Roman S, Bodenstab S, Gil A, Sanchez-Siles LM. Infant cereals: Current status, challenges, and future opportunities for whole grains. *Nutrients.* 2019. doi:10.3390/nu11020473
58. Fernández-Calleja JMS, Bouwman LMS, Swarts HJM, Oosting A, Keijer J, Van Schothorst EM. Direct and long-term metabolic consequences of lowly vs. Highly-digestible starch in the early post-weaning diet of mice. *Nutrients.* 2018;10(11):1788. doi:10.3390/nu10111788
59. Mameli C, Mazzantini S, Zuccotti GV. Nutrition in the first 1000 days: The origin of childhood obesity. *Int J Environ Res Public Health.* 2016. doi:10.3390/ijerph13090838
60. Davis MA, Mackenzie TA, Cottingham KL, Gilbert-Diamond D, Punshon T, Karagas MR. Rice consumption and urinary arsenic concentrations in U.S. children. *Environ Health Perspect.* 2012. doi:10.1289/ehp.1205014
61. Davis MA, Signes-Pastor AJ, Argos M, et al. Assessment of human dietary exposure to arsenic through rice. *Sci Total Environ.* 2017. doi:10.1016/j.scitotenv.2017.02.119
62. Karagas MR, Punshon T, Sayarath V, Jackson BP, Folt CL, Cottingham KL. Association of rice and rice-product consumption with arsenic exposure early in life. *JAMA Pediatr.* 2016. doi:10.1001/jamapediatrics.2016.0120

63. Reports C, Juice Y. Arsenic in your food. *Consum Rep*. 2012.
64. Islam S, Rahman MM, Islam MR, Naidu R. Arsenic accumulation in rice: Consequences of rice genotypes and management practices to reduce human health risk. *Environ Int*. 2016. doi:10.1016/j.envint.2016.09.006
65. Meharg AA, Williams PN, Adomako E, et al. Geographical variation in total and inorganic arsenic content of polished (white) rice. *Environ Sci Technol*. 2009. doi:10.1021/es802612a
66. Devi S, Varkey A, Sheshshayee MS, Preston T, Kurpad A V. Measurement of protein digestibility in humans by a dual-tracer method. *Am J Clin Nutr*. 2018. doi:10.1093/ajcn/nqy062
67. Shivakumar N, Kashyap S, Kishore S, et al. Protein-quality evaluation of complementary foods in Indian children. *Am J Clin Nutr*. 2019. doi:10.1093/ajcn/nqy265
68. Tang M, Hendricks AE, Krebs NF. A meat-or dairy-based complementary diet leads to distinct growth patterns in formula-fed infants: A randomized controlled trial. *Am J Clin Nutr*. 2018. doi:10.1093/ajcn/nqy038
69. Tang M, Sheng XY, Krebs NF, Hambidge KM. Meat as complementary food for older breastfed infants and toddlers: a randomized, controlled trial in rural China. *Food Nutr Bull*. 2014. doi:10.1177/15648265140354S304
70. Hambidge KM, Sheng X, Mazariegos M, et al. Evaluation of meat as a first complementary food for breastfed infants: Impact on iron intake. *Nutr Rev*. 2011. doi:10.1111/j.1753-4887.2011.00434.x
71. Larson CP, Roy SK, Khan AI, Rahman AS, Qadri F. Zinc treatment to under-five children: Applications to improve child survival and reduce burden of disease. *J Heal Popul Nutr*. 2008. doi:10.3329/jhpn.v26i3.1901
72. Morison BJ, Taylor RW, Haszard JJ, et al. How different are baby-led weaning and conventional complementary feeding? A cross-sectional study of infants aged 6-8 months. *BMJ Open*. 2016. doi:10.1136/bmjopen-2015-010665
73. Erickson LW, Taylor RW, Haszard JJ, et al. Impact of a modified version of baby-led weaning on infant food and nutrient intakes: The BLISS randomized controlled trial. *Nutrients*. 2018. doi:10.3390/nu10060740
74. Beauchamp GK, Mennella JA. Early flavor learning and its impact on later feeding behavior. *J Pediatr Gastroenterol Nutr*. 2009. doi:10.1097/MPG.0b013e31819774a5
75. Mennella JA, Bobowski NK. The sweetness and bitterness of childhood: Insights from basic research on taste preferences. *Physiol Behav*. 2015. doi:10.1016/j.physbeh.2015.05.015
76. Mennella JA, Bobowski NK, Reed DR. The development of sweet taste: From biology to hedonics. *Rev Endocr Metab Disord*. 2016. doi:10.1007/s11154-016-9360-5
77. World Health Organization. Infant and Young Child Feeding: Model Chapter.; 2009.
78. Berge JM, Wall M, Hsueh TF, Fulkerson JA, Larson N, Neumark-Sztainer D. The protective role of family meals for youth obesity: 10-year longitudinal associations. *J Pediatr*. 2015. doi:10.1016/j.jpeds.2014.08.030
79. Hammons AJ, Fiese BH. Is frequency of shared family meals related to the nutritional health of children and adolescents? *Pediatrics*. 2011. doi:10.1542/peds.2010-1440

Endnotes

Chapter 11

1. Cooksey-Stowers K, Schwartz MB, Brownell KD. Food swamps predict obesity rates better than food deserts in the United States. *Int J Environ Res Public Health*. 2017. doi:10.3390/ijerph14111366
2. Hager ER, Cockerham A, O'Reilly N, et al. Food swamps and food deserts in Baltimore City, MD, USA: Associations with dietary behaviours among urban adolescent girls. *Public Health Nutr*. 2017. doi:10.1017/S1368980016002123
3. Olsho LEW, Klerman JA, Wilde PE, Bartlett S. Financial incentives increase fruit and vegetable intake among Supplemental Nutrition Assistance Program participants: A randomized controlled trial of the USDA Healthy Incentives Pilot. *Am J Clin Nutr*. 2016. doi:10.3945/ajcn.115.129320
4. Mozaffarian D, Liu J, Sy S, et al. Cost-effectiveness of financial incentives and disincentives for improving food purchases and health through the US Supplemental Nutrition Assistance Program (SNAP): A microsimulation study. *PLoS Med*. 2018. doi:10.1371/journal.pmed.1002661
5. Jenkin G, Madhvani N, Signal L, Bowers S. A systematic review of persuasive marketing techniques to promote food to children on television. *Obes Rev*. 2014. doi:10.1111/obr.12141
6. Signal LN, Stanley J, Smith M, et al. Children's everyday exposure to food marketing: An objective analysis using wearable cameras. *Int J Behav Nutr Phys Act*. 2017. doi:10.1186/s12966-017-0570-3
7. Dalton MA, Longacre MR, Drake KM, et al. Child-targeted fast-food television advertising exposure is linked with fast-food intake among pre-school children. *Public Health Nutr*. 2017. doi:10.1017/S1368980017000520
8. Potvin Kent M, Pauzé E, Roy EA, de Billy N, Czoli C. Children and adolescents' exposure to food and beverage marketing in social media apps. *Pediatr Obes*. 2019. doi:10.1111/ijpo.12508
9. Kraak VI, Vandevijvere S, Sacks G, et al. Progress achieved in restricting the marketing of high-fat, sugary and salty food and beverage products to children. *Bull World Health Organ*. 2016. doi:10.2471/blt.15.158667
10. Trasande L, Shaffer RM, Sathyanarayana S. Food additives and child health. *Pediatrics*. 2018. doi:10.1542/peds.2018-1408
11. Elizabeth L, Machado P, Zinöcker M, Baker P, Lawrence M. Ultra-Processed Foods and Health Outcomes: A Narrative Review. *Nutrients*. 2020;12(7):1955. doi:10.3390/nu12071955
12. Costa CS, Rauber F, Leffa PS, Sangalli CN, Campagnolo PDB, Vitolo MR. Ultra-processed food consumption and its effects on anthropometric and glucose profile: A longitudinal study during childhood. *Nutr Metab Cardiovasc Dis*. 2019. doi:10.1016/j.numecd.2018.11.003
13. Costa CS, Del-Ponte B, Assunção MCF, Santos IS. Consumption of ultra-processed foods and body fat during childhood and adolescence: A systematic review. *Public Health Nutr*. 2018;21(1):148-159. doi:10.1017/S1368980017001331

14. Poti JM, Braga B, Qin B. Ultra-processed Food Intake and Obesity: What Really Matters for Health-Processing or Nutrient Content? *Curr Obes Rep.* 2017;6(4):420-431. doi:10.1007/s13679-017-0285-4
15. Reedy J, Krebs-Smith SM. Dietary Sources of Energy, Solid Fats, and Added Sugars among Children and Adolescents in the United States. *J Am Diet Assoc.* 2010. doi:10.1016/j.jada.2010.07.01
16. Trasande L, Shaffer RM, Sathyanarayana S. Food additives and child health. *Pediatrics.* 2018. doi:10.1542/peds.2018-1410
17. Trasande L, Shaffer RM, Sathyanarayana S. Food additives and child health. *Pediatrics.* 2018. doi:10.1542/peds.2018-1408
18. Martino JV, Van Limbergen J, Cahill LE. The role of carrageenan and carboxymethylcellulose in the development of intestinal inflammation. *Front Pediatr.* 2017;5(May):1-7. doi:10.3389/fped.2017.00096
19. Wu W, Zhen Z, Niu T, et al. K-Carrageenan Enhances Lipopolysaccharide-Induced Interleukin-8 Secretion by Stimulating the Bcl10-NF-kB Pathway in HT-29 Cells and Aggravates C. freundii-Induced Inflammation in Mice. *Mediators Inflamm.* 2017. doi:10.1155/2017/8634865
20. Munyaka PM, Sepehri S, Ghia JE, Khafipour E. Carrageenan gum and adherent invasive Escherichia coli in a piglet model of inflammatory bowel disease: Impact on intestinal mucosa-associated microbiota. *Front Microbiol.* 2016. doi:10.3389/fmicb.2016.00462
21. Younes M, Aggett P, Aguilar F, et al. Re-evaluation of carrageenan (E 407) and processed Eucheuma seaweed (E 407a) as food additives. *EFSA J.* 2018. doi:10.2903/j.efsa.2018.5238
22. Feferman L, Bhattacharyya S, Oates E, et al. Carrageenan-Free Diet Shows Improved Glucose Tolerance and Insulin Signaling in Prediabetes: A Randomized, Pilot Clinical Trial. *J Diabetes Res.* 2020. doi:10.1155/2020/8267980
23. Bhattacharyya S, Shumard T, Xie H, et al. A randomized trial of the effects of the no-carrageenan diet on ulcerative colitis disease activity. *Nutr Heal Aging.* 2017. doi:10.3233/NHA-170023
24. Ruiz PA, Moron B, Becker HM, et al. Mo1932 Titanium Dioxide Nanoparticles Promote Intestinal Inflammation: Role of the Inflammasome. *Gastroenterology.* 2016. doi:10.1016/s0016-5085(16)32774-3
25. Andersen V, Olsen A, Carbonnel F, Tjønneland A, Vogel U. Diet and risk of inflammatory bowel disease. *Dig Liver Dis.* 2012. doi:10.1016/j.dld.2011.10.001
26. Pinget G, Tan J, Janac B, et al. Impact of the food additive titanium dioxide (e171) on gut microbiota-host interaction. *Front Nutr.* 2019. doi:10.3389/fnut.2019.00057
27. Bischoff NS, de Kok TM, Sijm DTHM, et al. Review possible adverse effects of food additive e171 (Titanium dioxide) related to particle specific human toxicity, including the immune system. *Int J Mol Sci.* 2021. doi:10.3390/ijms22010207
28. Chassaing B, Koren O, Goodrich JK, et al. Dietary emulsifiers impact the mouse gut microbiota promoting colitis and metabolic syndrome. *Nature.* 2015. doi:10.1038/nature14232
29. Rinninella E, Cintoni M, Raoul P, Gasbarrini A, Mele MC. Food additives, gut microbiota, and irritable bowel syndrome: A hidden track. *Int J Environ Res Public Health.* 2020. doi:10.3390/ijerph17238816

30. Marion-Letellier R, Amamou A, Savoye G, Ghosh S. Inflammatory bowel diseases and food additives: To add fuel on the flames! *Nutrients*. 2019. doi:10.3390/nu11051111
31. Remer T. High salt intake: detrimental not only for blood pressure, but also for bone health? *Endocrine*. 2015. doi:10.1007/s12020-015-0626-6
32. Appel LJ, Lichtenstein AH, Callahan EA, Sinaiko A, Van Horn L, Whitsel L. Reducing Sodium Intake in Children: A Public Health Investment. *J Clin Hypertens*. 2015. doi:10.1111/jch.12615
33. Bateman B, Warner JO, Hutchinson E, et al. The effects of a double blind, placebo controlled, artificial food colourings and benzoate preservative challenge on hyperactivity in a general population sample of preschool children. *Arch Dis Child*. 2004. doi:10.1136/adc.2003.031435
34. McCann D, Barrett A, Cooper A, et al. Food additives and hyperactive behaviour in 3-year-old and 8/9-year-old children in the community: a randomised, double-blinded, placebo-controlled trial. *Lancet*. 2007. doi:10.1016/S0140-6736(07)61306-3
35. Weiss B. Synthetic food colors and neurobehavioral hazards: The view from environmental health research. *Environ Health Perspect*. 2012;120(1):1-5. doi:10.1289/ehp.1103827
36. Stevens LJ, Burgess JR, Stochelski MA, Kuczek T. Amounts of artificial food dyes and added sugars in foods and sweets commonly consumed by children. *Clin Pediatr (Phila)*. 2015;54(4):309-321. doi:10.1177/0009922814530803
37. Stevens LJ, Kuczek T, Burgess JR, Stochelski MA, Arnold LE, Galland L. Mechanisms of behavioral, atopic, and other reactions to artificial food colors in children. *Nutr Rev*. 2013;71(5):268-281. doi:10.1111/nure.12023
38. Vauzour D, Rodriguez-Mateos A, Corona G, Oruna-Concha MJ, Spencer JPE. Polyphenols and human health: Prevention of disease and mechanisms of action. *Nutrients*. 2010;2(11):1106-1131. doi:10.3390/nu2111106
39. Minich DM. A Review of the Science of Colorful, Plant-Based Food and Practical Strategies for “Eating the Rainbow.” *J Nutr Metab*. 2019;2019:1-19. doi:10.1155/2019/2125070
40. Gupta C, Prof DP. Phytonutrients as therapeutic agents. 2014;(July). doi:10.1515/jcim-2013-0021
41. Hodges RE, Minich DM. Modulation of Metabolic Detoxification Pathways Using Foods and Food-Derived Components: A Scientific Review with Clinical Application. *J Nutr Metab*. 2015. doi:10.1155/2015/760689
42. Siyuan S, Tong L, Liu RH. Corn phytochemicals and their health benefits. *Food Sci Hum Wellness*. 2018. doi:10.1016/j.fshw.2018.09.003
43. Centers for Disease Control and Prevention. State indicator report on fruits and vegetables 2013. *Atlanta, GA Centers Dis Control Prev US Dep Heal Hum Serv*. 2013.
44. Duffy EW, Kay MC, Jacquier E, et al. Trends in food consumption patterns of us infants and toddlers from feeding infants and toddlers studies (FITS) in 2002, 2008, 2016. *Nutrients*. 2019. doi:10.3390/nu11112807
45. Roess AA, Jacquier EF, Catellier DJ, et al. Food consumption patterns of infants and toddlers: Findings from the feeding infants and toddlers study (FITS) 2016. *J Nutr*. 2018. doi:10.1093/jn/nxy171

46. Johnston BC, Zeraatkar D, Han MA, et al. Unprocessed red meat and processed meat consumption: Dietary guideline recommendations from the nutritional recommendations (NUTRIRECS) consortium. *Ann Intern Med.* 2019. doi:10.7326/M19-1621
47. Micha R, Michas G, Lajous M, Mozaffarian D. Processing of meats and cardiovascular risk: Time to focus on preservatives. *BMC Med.* 2013. doi:10.1186/1741-7015-11-136
48. Rubin R. Backlash over Meat Dietary Recommendations Raises Questions about Corporate Ties to Nutrition Scientists. *JAMA - J Am Med Assoc.* 2019. doi:10.1001/jama.2019.21441
49. Zeraatkar D, Han MA, Guyatt GH, et al. Red and processed meat consumption and risk for all-cause mortality and cardiometabolic outcomes a systematic review and meta-analysis of cohort studies. *Ann Intern Med.* 2019. doi:10.7326/M19-0655
50. Kaluza J, Åkesson A, Wolk A. Long-term processed and unprocessed red meat consumption and risk of heart failure: A prospective cohort study of women. *Int J Cardiol.* 2015. doi:10.1016/j.ijcard.2015.05.044
51. Park K, Son J, Jang J, et al. Unprocessed meat consumption and incident cardiovascular diseases in Korean adults: The Korean Genome and Epidemiology Study (KoGES). *Nutrients.* 2017. doi:10.3390/nu9050498
52. Carroll AE, Doherty TS. Meat consumption and health: Food for thought. *Ann Intern Med.* 2019. doi:10.7326/M19-2620
53. Heyman MB, Abrams SA. Fruit juice in infants, children, and adolescents: Current recommendations. *Pediatrics.* 2017. doi:10.1542/peds.2017-0967
54. Zhu Y, Olsen SF, Mendola P, et al. Maternal dietary intakes of refined grains during pregnancy and growth through the first 7 y of life among children born to women with gestational diabetes. *Am J Clin Nutr.* 2017. doi:10.3945/ajcn.116.136291
55. Vanegas SM, Meydani M, Barnett JB, et al. Substituting whole grains for refined grains in a 6-wk randomized trial has a modest effect on gut microbiota and immune and inflammatory markers of healthy adults. *Am J Clin Nutr.* 2017. doi:10.3945/ajcn.116.146928
56. Telle-Hansen VH, Holven KB, Ulven SM. Impact of a healthy dietary pattern on gut microbiota and systemic inflammation in humans. *Nutrients.* 2018. doi:10.3390/nu10111783
57. Ludwig DS, Willett WC. Three daily servings of reduced-fat milk: An evidence-based recommendation? *JAMA Pediatr.* 2013. doi:10.1001/jamapediatrics.2013.2408
58. Jianqin S, Leiming X, Lu X, Yelland GW, Ni J, Clarke AJ. Effects of milk containing only A2 beta casein versus milk containing both A1 and A2 beta casein proteins on gastrointestinal physiology , symptoms of discomfort , and cognitive behavior of people with self-reported intolerance to traditional cows ' milk. *Nutr J.* 2016:1-16. doi:10.1186/s12937-016-0147-z
59. He M, Sun J, Jiang ZQ, Yang YX. Effects of cow's milk beta-casein variants on symptoms of milk intolerance in Chinese adults: A multicentre, randomised controlled study. *Nutr J.* 2017. doi:10.1186/s12937-017-0275-0
60. Sheng X, Li Z, Ni J, Yelland G. Effects of Conventional Milk Versus Milk Containing only A2 β -Casein on Digestion in Chinese Children: A Randomized Study. *J Pediatr Gastroenterol Nutr.* 2019. doi:10.1097/MPG.0000000000002437

61. Pal S, Woodford K, Kukuljan S, Ho S. Milk intolerance, beta-casein and lactose. *Nutrients*. 2015. doi:10.3390/nu7095339
62. Vos MB, Kaar JL, Welsh JA, et al. Added sugars and cardiovascular disease risk in children: A scientific statement from the American Heart Association. *Circulation*. 2017. doi:10.1161/CIR.0000000000000439
63. Fazzino TL, Rohde K, Sullivan DK. Hyper-Palatable Foods: Development of a Quantitative Definition and Application to the US Food System Database. *Obesity*. 2019. doi:10.1002/oby.22639
64. Gearhardt AN, Davis C, Kuschner R, Brownell KD. The addiction potential of hyperpalatable foods. *Curr Drug Abuse Rev*. 2011. doi:10.2174/1874473711104030140
65. Keewan E, Narasimhulu CA, Rohr M, Hamid S, Parthasarathy S. Are fried foods unhealthy? The dietary peroxidized fatty acid, 13-hpode, induces intestinal inflammation in vitro and in vivo. *Antioxidants*. 2020. doi:10.3390/antiox9100926
66. Ramsden CE, Hennebelle M, Schuster S, et al. Effects of diets enriched in linoleic acid and its peroxidation products on brain fatty acids, oxylipins, and aldehydes in mice. *Biochim Biophys Acta - Mol Cell Biol Lipids*. 2018. doi:10.1016/j.bbalip.2018.07.007
67. (www.fao.org) Food And Agriculture Organization of the United Nations

Endnotes

Chapter 12

1. Children's Defense Fund (childrensdefense.org)
2. Bird JK, Murphy RA, Ciappio ED, McBurney MI. Risk of deficiency in multiple concurrent micronutrients in children and adults in the United States. *Nutrients*. 2017;9(7). doi:10.3390/nu9070655
3. Domellöf M, Braegger C, Campoy C, et al. Iron requirements of infants and toddlers. *J Pediatr Gastroenterol Nutr*. 2014. doi:10.1097/MPG.0000000000000206
4. Krebs NF, Lozoff B, Georgieff MK. Neurodevelopment: The impact of nutrition and inflammation during infancy in low-resource settings. *Pediatrics*. 2017. doi:10.1542/peds.2016-2828G
5. Kiddie JY, Weiss MD, Kitts DD, Levy-milne R, Wasdell MB. Nutritional Status of Children with Attention Deficit Hyperactivity Disorder : A Pilot Study. 2010;2010. doi:10.1155/2010/767318
6. Tseng PT, Cheng YS, Yen CF, et al. Peripheral iron levels in children with attention-deficit hyperactivity disorder: A systematic review and meta-analysis. *Sci Rep*. 2018. doi:10.1038/s41598-017-19096-x
7. Wang Y, Huang L, Zhang L, Qu Y, Mu D. Iron status in attention-deficit/hyperactivity disorder: A systematic review and meta-analysis. *PLoS One*. 2017. doi:10.1371/journal.pone.0169145
8. Hassan TH, Badr MA, Karam NA, et al. Impact of iron deficiency anemia on the function of the immune system in children. *Med (United States)*. 2016. doi:10.1097/MD.00000000000005395
9. Aly SS, Fayed HM, Ismail AM, Abdel Hakeem GL. Assessment of peripheral blood lymphocyte subsets in children with iron deficiency anemia. *BMC Pediatr*. 2018;18(1). doi:10.1186/s12887-018-0990-5
10. Ekiz C, Agaoglu L, Karakas Z, Gurel N, Yalcin I. The effect of iron deficiency anemia on the function of the immune system. *Hematol J*. 2005. doi:10.1038/sj.thj.6200574
11. Gibson RS, Heath ALM, Szymlek-Gay EA. Is iron and zinc nutrition a concern for vegetarian infants and young children in industrialized countries? In: *American Journal of Clinical Nutrition*. ; 2014. doi:10.3945/ajcn.113.071241
12. Pawlak R, Bell K. Iron Status of Vegetarian Children: A Review of Literature. *Ann Nutr Metab*. 2017. doi:10.1159/000466706
13. Konofal E, Lecendreux M, Deron J, et al. Effects of Iron Supplementation on Attention Deficit Hyperactivity Disorder in Children. *Pediatr Neurol*. 2008. doi:10.1016/j.pediatrneurol.2007.08.014
14. Cortese S, Angriman M. Attention-deficit/hyperactivity disorder, iron deficiency, and obesity: Is there a link? *Postgrad Med*. 2014. doi:10.3810/pgm.2014.07.2793
15. Cortese S, Angriman M, Lecendreux M, Konofal E. Iron and attention deficit/hyperactivity disorder: What is the empirical evidence so far? A systematic review of the literature. *Expert Rev Neurother*. 2012. doi:10.1586/ern.12.116
16. Pawlak R, Bell K. Iron Status of Vegetarian Children: A Review of Literature. *Ann Nutr Metab*. 2017. doi:10.1159/000466706

17. Kiddie JY, Weiss MD, Kitts DD, Levy-milne R, Wasdell MB. Nutritional Status of Children with Attention Deficit Hyperactivity Disorder : A Pilot Study. 2010;2010. doi:10.1155/2010/767318
18. Bhatnagar S, Taneja S. Zinc and cognitive development. *Br J Nutr.* 2001;85(S2):S139-S145. doi:10.1079/bjn2000306
19. Villagomez A, Ramtekkar U. Iron, Magnesium, Vitamin D, and Zinc Deficiencies in Children Presenting with Symptoms of Attention-Deficit/Hyperactivity Disorder. *Children.* 2014;1(3):261-279. doi:10.3390/children1030261
20. Lönnerdal B. Dietary factors influencing zinc absorption. In: *Journal of Nutrition.* Vol 130. American Institute of Nutrition; 2000:1378-1383. doi:10.1093/jn/130.5.1378s
21. Wood RJ, Zheng JJ. High dietary calcium intakes reduce zinc absorption and balance in humans. *Am J Clin Nutr.* 1997;65(6):1803-1809. doi:10.1093/ajcn/65.6.1803
22. Krebs NF. Dietary zinc and iron sources, physical growth and cognitive development of breastfed infants. In: *Journal of Nutrition.* ; 2000. doi:10.1093/jn/130.2.358s
23. Hambidge KM, Miller L V., Westcott JE, Krebs NF. Dietary reference intakes for zinc may require adjustment for phytate intake based upon model predictions. *J Nutr.* 2008. doi:10.3945/jn.108.093823
24. Krebs NF. Update on zinc deficiency and excess in clinical pediatric practice. *Ann Nutr Metab.* 2013. doi:10.1159/000348261
25. Brown KH, Rivera JA, Bhutta Z, et al. International Zinc Nutrition Consultative Group (IZiNCG) technical document #1. Assessment of the risk of zinc deficiency in populations and options for its control. *Food Nutr Bull.* 2004.
26. Villagomez A, Ramtekkar U. Iron, Magnesium, Vitamin D, and Zinc Deficiencies in Children Presenting with Symptoms of Attention-Deficit/Hyperactivity Disorder. *Children.* 2014. doi:10.3390/children1030261
27. Kiddie JY, Weiss MD, Kitts DD, Levy-Milne R, Wasdell MB. Nutritional Status of Children with Attention Deficit Hyperactivity Disorder: A Pilot Study. *Int J Pediatr.* 2010. doi:10.1155/2010/767318
28. Zhou F, Wu F, Zou S, Chen Y, Feng C, Fan G. Dietary , Nutrient Patterns and Blood Essential Elements in Chinese Children with ADHD. 2016:1-14. doi:10.3390/nu8060352
29. Akhondzadeh S, Mohammadi M, Khademi M. Zinc sulfate as an adjunct to methylphenidate for the treatment of attention deficit hyperactivity disorder in children : A double blind. 2004;6:1-6.
30. Arnold LE, Disilvestro RA, Bozzolo D, et al. Zinc for attention-deficit/hyperactivity disorder: Placebo-controlled double-blind pilot trial alone and combined with amphetamine. *J Child Adolesc Psychopharmacol.* 2011. doi:10.1089/cap.2010.0073
31. Arnold LE. 78.1 Complementary and Integrative Medicine in Attention-Deficit/Hyperactivity Disorder. *J Am Acad Child Adolesc Psychiatry.* 2017. doi:10.1016/j.jaac.2017.07.456
32. Bilici M, Yildirim F, Kandil S, et al. Double-blind, placebo-controlled study of zinc sulfate in the treatment of attention deficit hyperactivity disorder. *Prog Neuro-Psychopharmacology Biol Psychiatry.* 2004. doi:10.1016/j.pnpbp.2003.09.034
33. Razzaque MS. Magnesium: Are we consuming enough? *Nutrients.* 2018. doi:10.3390/nu10121863

34. Rosanoff A, Weaver CM, Rude RK. Suboptimal magnesium status in the United States: Are the health consequences underestimated? *Nutr Rev.* 2012. doi:10.1111/j.1753-4887.2011.00465.x
35. Rosanoff A, Dai Q, Shapses SA. Essential nutrient interactions: Does low or suboptimal magnesium status interact with vitamin D and/or calcium status? *Adv Nutr.* 2016. doi:10.3945/an.115.008631
36. Abrams SA, Chen Z, Hawthorne KM. Magnesium Metabolism in 4-Year-Old to 8-Year-Old Children. *J Bone Miner Res.* 2014;29(1):118-122. doi:10.1002/jbmr.2021
37. Workinger JL, Doyle RP, Bortz J. Challenges in the diagnosis of magnesium status. *Nutrients.* 2018. doi:10.3390/nu10091202
38. Kozielec T, Starobrat-Hermelin B. Assessment of magnesium levels in children with attention deficit hyperactivity disorder (ADHD). *Magnes Res.* 1997.
39. Kozielec T, Salacka A, Radomska K, Strecker D, Durska G. The influence of magnesium supplementation on magnesium and calcium concentrations in hair of children with magnesium shortage. *Magnes Res.* 2001.
40. Huss M, Völp A, Stauss-Grabo M. Supplementation of polyunsaturated fatty acids, magnesium and zinc in children seeking medical advice for attention-deficit/hyperactivity problems - An observational cohort study. *Lipids Health Dis.* 2010;9:1-12. doi:10.1186/1476-511X-9-105
41. Kozielec T, Starobrat-Hermelin B. Assessment of magnesium levels in children with attention deficit hyperactivity disorder (ADHD). *Magnes Res.* 1997.
42. Ghanizadeh A. A systematic review of magnesium therapy for treating attention deficit hyperactivity disorder. *Arch Iran Med.* 2013.
43. Tarleton EK, Littenberg B, MacLean CD, Kennedy AG, Daley C. Role of magnesium supplementation in the treatment of depression: A randomized clinical trial. *PLoS One.* 2017. doi:10.1371/journal.pone.0180067
44. Sartori SB, Whittle N, Hetzenauer A, Singewald N. Magnesium deficiency induces anxiety and HPA axis dysregulation: Modulation by therapeutic drug treatment. In: *Neuropharmacology.* ; 2012. doi:10.1016/j.neuropharm.2011.07.027
45. Boyle NB, Lawton C, Dye L. The effects of magnesium supplementation on subjective anxiety and stress—a systematic review. *Nutrients.* 2017. doi:10.3390/nu9050429
46. Farsinejad-Marj M, Saneei P, Esmailzadeh A. Dietary magnesium intake, bone mineral density and risk of fracture: a systematic review and meta-analysis. *Osteoporos Int.* 2016;27(4):1389-1399. doi:10.1007/s00198-015-3400-y
47. Volpe SL. Magnesium in disease prevention and overall health. *Adv Nutr.* 2013. doi:10.3945/an.112.003483
48. Linus Pauling Institute (ipi.oregonstate.edu/mic/minerals/magnesium)
49. Ismail Y, Ismail AA, Ismail AAA. The underestimated problem of using serum magnesium measurements to exclude magnesium deficiency in adults; A health warning is needed for “normal” results. *Clin Chem Lab Med.* 2010. doi:10.1515/CCLM.2010.077
50. Lanou AJ, Berkow SE, Barnard ND. Calcium, dairy products, and bone health in children and young adults: A reevaluation of the evidence. *Pediatrics.* 2005;115(3):736-743. doi:10.1542/peds.2004-0548
51. Lanou AJ. Should dairy be recommended as part of a healthy vegetarian diet? Counterpoint. In:

- American Journal of Clinical Nutrition.* ; 2009. doi:10.3945/ajcn.2009.26736P
52. Feskanich D, Bischoff-Ferrari HA, Frazier AL, Willett WC. Milk consumption during teenage years and risk of hip fractures in older adults. *JAMA Pediatr.* 2014. doi:10.1001/jamapediatrics.2013.3821
 53. Bischoff-Ferrari HA, Dawson-Hughes B, Baron JA, et al. Calcium intake and hip fracture risk in men and women: A meta-analysis of prospective cohort studies and randomized controlled trials. *Am J Clin Nutr.* 2007. doi:10.1093/ajcn/86.5.1780
 54. Frassetto L, Banerjee T, Powe N, Sebastian A. Acid balance, dietary acid load, and bone effects-a controversial subject. *Nutrients.* 2018. doi:10.3390/nu10040517
 55. Frassetto L, Morris, Jr. RC, Sellmeyer DE, Todd K, Sebastian A. Diet, evolution and aging. *Eur J Nutr.* 2001. doi:10.1007/s394-001-8347-4
 56. Remer T, Dimitriou T, Manz F. Dietary potential renal acid load and renal net acid excretion in healthy, free-living children and adolescents. *Am J Clin Nutr.* 2003. doi:10.1093/ajcn/77.5.1255
 57. Haghighatdoost F, Sadeghian R, Clark CCT, Abbasi B. Higher Dietary Acid Load Is Associated With an Increased Risk of Calcium Oxalate Kidney Stones. *J Ren Nutr.* 2020. doi:10.1053/j.jrn.2020.08.012
 58. Andersen BN, Johansen PB, Abrahamsen B. Proton pump inhibitors and osteoporosis. *Curr Opin Rheumatol.* 2016. doi:10.1097/BOR.0000000000000291
 59. Freedberg DE, Haynes K, Denburg MR, et al. Use of proton pump inhibitors is associated with fractures in young adults: a population-based study. *Osteoporos Int.* 2015. doi:10.1007/s00198-015-3168-0
 60. Thong BKS, Ima-Nirwana S, Chin KY. Proton pump inhibitors and fracture risk: A review of current evidence and mechanisms involved. *Int J Environ Res Public Health.* 2019. doi:10.3390/ijerph16091571
 61. Chirchir H, Kivell TL, Ruff CB, et al. Recent origin of low trabecular bone density in modern humans. *Proc Natl Acad Sci U S A.* 2015. doi:10.1073/pnas.1411696112
 62. Ryan TM, Shaw CN. Gracility of the modern Homo sapiens skeleton is the result of decreased biomechanical loading. *Proc Natl Acad Sci U S A.* 2015. doi:10.1073/pnas.1418646112
 63. Wang L-J, Yu Y-H, Fu M-L, et al. Dietary Profiles, Nutritional Biochemistry Status, and Attention-Deficit/Hyperactivity Disorder: Path Analysis for a Case-Control Study. *J Clin Med.* 2019. doi:10.3390/jcm8050709
 64. Zhou F, Wu F, Zou S, Chen Y, Feng C, Fan G. Dietary , Nutrient Patterns and Blood Essential Elements in Chinese Children with ADHD. 2016:1-14. doi:10.3390/nu8060352
 65. Lachance L, McKenzie K, Taylor VH, Vigod SN. Omega-6 to omega-3 fatty acid ratio in patients with ADHD: A meta-analysis. *J Can Acad Child Adolesc Psychiatry.* 2016.
 66. Fuentes-Albero M, Martínez-Martínez MI, Cauli O. Omega-3 long-chain polyunsaturated fatty acids intake in children with attention deficit and hyperactivity disorder. *Brain Sci.* 2019. doi:10.3390/brainsci9050120
 67. Parletta N, Niyonsenga T, Duff J. Omega-3 and omega-6 polyunsaturated fatty acid levels and correlations with symptoms in children with attention deficit hyperactivity disorder, autistic spectrum disorder and typically developing controls. *PLoS One.* 2016. doi:10.1371/journal.pone.0156432

68. Hawkey E, Nigg JT. Omega-3 fatty acid and ADHD: Blood level analysis and meta-analytic extension of supplementation trials. *Clin Psychol Rev.* 2014. doi:10.1016/j.cpr.2014.05.005
69. Hibbeln CJR, Spiller P, Brenna JT, et al. Relationships between seafood consumption during pregnancy and childhood and neurocognitive development: Two systematic reviews. *Prostaglandins Leukot Essent Fat Acids.* 2019. doi:10.1016/j.plefa.2019.10.002
70. Bloch MH, Qawasmi A. Omega-3 fatty acid supplementation for the treatment of children with attention-deficit/hyperactivity disorder symptomatology: Systematic review and meta-analysis. *J Am Acad Child Adolesc Psychiatry.* 2011. doi:10.1016/j.jaac.2011.06.008
71. Chang JPC, Su KP, Mondelli V, Pariante CM. Omega-3 Polyunsaturated Fatty Acids in Youths with Attention Deficit Hyperactivity Disorder: A Systematic Review and Meta-Analysis of Clinical Trials and Biological Studies. *Neuropsychopharmacology.* 2018. doi:10.1038/npp.2017.160
72. Derbyshire E. Do Omega-3/6 Fatty Acids Have a Therapeutic Role in Children and Young People with ADHD? *J Lipids.* 2017. doi:10.1155/2017/6285218
73. Sinn N, Bryan J. Effect of supplementation with polyunsaturated fatty acids and micronutrients on learning and behavior problems associated with child ADHD. *J Dev Behav Pediatr.* 2007. doi:10.1097/01.DBP.0000267558.88457.a5
74. Königs A, Kiliaan AJ. Critical appraisal of omega-3 fatty acids in attention-deficit/hyperactivity disorder treatment. *Neuropsychiatr Dis Treat.* 2016. doi:10.2147/NDT.S68652
75. Sheppard KW, Cheatham CL. Omega-6/omega-3 fatty acid intake of children and older adults in the U.S.: Dietary intake in comparison to current dietary recommendations and the Healthy Eating Index. *Lipids Health Dis.* 2018;17(1). doi:10.1186/s12944-018-0693-9
76. Kris-Etherton PM, Grieger JA, Etherton TD. Dietary reference intakes for DHA and EPA. *Prostaglandins Leukot Essent Fat Acids.* 2009. doi:10.1016/j.plefa.2009.05.011
77. Lachance L, McKenzie K, Taylor VH, Vigod SN. Omega-6 to omega-3 fatty acid ratio in patients with ADHD: A meta-analysis. *J Can Acad Child Adolesc Psychiatry.* 2016.
78. Sinn N, Bryan J, Wilson C. Cognitive effects of polyunsaturated fatty acids in children with attention deficit hyperactivity disorder symptoms: A randomised controlled trial. *Prostaglandins Leukot Essent Fat Acids.* 2008. doi:10.1016/j.plefa.2008.04.004
79. Derbyshire E. Do Omega-3 / 6 Fatty Acids Have a Therapeutic Role in Children and Young People with ADHD ? 2017;2017. doi:10.1155/2017/6285218
80. Fuentes-Albero M, Martínez-Martínez MI, Cauli O. Omega-3 long-chain polyunsaturated fatty acids intake in children with attention deficit and hyperactivity disorder. *Brain Sci.* 2019. doi:10.3390/brainsci9050120
81. Calder PC. Very long-chain n-3 fatty acids and human health: Fact, fiction and the future. In: *Proceedings of the Nutrition Society.* ; 2018. doi:10.1017/S0029665117003950
82. Sun Q, Ma J, Campos H, Hankinson SE, Hu FB. Comparison between plasma and erythrocyte fatty acid content as biomarkers of fatty acid intake in US women. *Am J Clin Nutr.* 2007. doi:10.1093/ajcn/86.1.74
83. Takkunen MJ, de Mello VDF, Schwab US, Ågren JJ, Kuusisto J, Uusitupa MIJ. Associations of erythrocyte membrane fatty acids with the concentrations of C-reactive protein, interleukin 1 receptor

- antagonist and adiponectin in 1373 men. *Prostaglandins Leukot Essent Fat Acids*. 2014. doi:10.1016/j.plefa.2014.07.005
84. Brenna JT, Salem N, Sinclair AJ, Cunnane SC. α -Linolenic acid supplementation and conversion to n-3 long-chain polyunsaturated fatty acids in humans. *Prostaglandins Leukot Essent Fat Acids*. 2009. doi:10.1016/j.plefa.2009.01.004
85. Goyens PLL, Spilker ME, Zock PL, Katan MB, Mensink RP. Conversion of α -linolenic acid in humans is influenced by the absolute amounts of α -linolenic acid and linoleic acid in the diet and not by their ratio. *Am J Clin Nutr*. 2006. doi:10.1093/ajcn/84.1.44
86. Altun H, Sahin N, Kurutaú EB, Güngör O. Homocysteine, pyridoxine, folate and vitamin b12 levels in children with attention deficit hyperactivity disorder. *Psychiatr Danub*. 2018. doi:10.24869/psyd.2018.310
87. Saha T, Chatterjee M, Verma D, et al. Genetic variants of the folate metabolic system and mild hyperhomocysteinemia may affect ADHD associated behavioral problems. *Prog Neuro-Psychopharmacology Biol Psychiatry*. 2018. doi:10.1016/j.pnpbp.2018.01.016
88. Papakostas GI, Shelton RC, Zajecka JM, et al. L-methylfolate as adjunctive therapy for SSRI-resistant major depression: Results of two randomized, double-blind,,parallel-sequential trials. *Am J Psychiatry*. 2012. doi:10.1176/appi.ajp.2012.11071114
89. Dartois LL, Stutzman DL, Morrow M. L-methylfolate Augmentation to Antidepressants for Adolescents with Treatment-Resistant Depression: A Case Series. *J Child Adolesc Psychopharmacol*. 2019. doi:10.1089/cap.2019.0006
90. Black MM. Effects of vitamin B12 and folate deficiency on brain development in children. In: *Food and Nutrition Bulletin*. ; 2008. doi:10.1177/15648265080292s117
91. Dolina S, Margalit D, Malitsky S, Rabinkov A. Attention-deficit hyperactivity disorder (ADHD) as a pyridoxine-dependent condition: Urinary diagnostic biomarkers. *Med Hypotheses*. 2014. doi:10.1016/j.mehy.2013.11.018
92. Di Miceli M, Gronier B. Pharmacology, Systematic Review and Recent Clinical Trials of Metadoxine. *Rev Recent Clin Trials*. 2018. doi:10.2174/1574887113666180227100217
93. Manor I, Rubin J, Daniely Y, Adler LA. Attention benefits after a single dose of metadoxine extended release in adults with predominantly inattentive ADHD. *Postgrad Med*. 2014. doi:10.3810/pgm.2014.09.2795
94. Manor I, Ben-Hayun R, Aharon-Peretz J, et al. A randomized, double-blind, placebo-controlled, multicenter study evaluating the efficacy, safety, and tolerability of extended-release metadoxine in adults with attention-deficit/hyperactivity disorder. *J Clin Psychiatry*. 2012. doi:10.4088/JCP.12m07767
95. Peng H yong, Man C feng, Xu J, Fan Y. Elevated homocysteine levels and risk of cardiovascular and all-cause mortality: a meta-analysis of prospective studies. *J Zhejiang Univ Sci B*. 2015;16(1):78-86. doi:10.1631/jzus.B1400183
96. Zhao M, Wang X, He M, et al. Homocysteine and Stroke Risk: Modifying Effect of Methylenetetrahydrofolate Reductase C677T Polymorphism and Folic Acid Intervention. *Stroke*. 2017. doi:10.1161/STROKEAHA.116.015324
97. Alluri R V., Mohan V, Komandur S, Chawda K, Chaudhuri JR, Hasan Q. MTHFR C677T gene

- mutation as a risk factor for arterial stroke: A hospital based study. *Eur J Neurol*. 2005. doi:10.1111/j.1468-1331.2004.00938.x
98. Bird JK, Murphy RA, Ciappio ED, McBurney MI. Risk of deficiency in multiple concurrent micronutrients in children and adults in the United States. *Nutrients*. 2017. doi:10.3390/nu9070655
 99. Haimi M. Nutritional deficiencies in the pediatric age group in a multicultural developed country, Israel. *World J Clin Cases*. 2014;2(5):120. doi:10.12998/wjcc.v2.i5.120
 100. Esnafoglu E, Ozturan DD. The relationship of severity of depression with homocysteine, folate, vitamin B12, and vitamin D levels in children and adolescents. *Child Adolesc Ment Health*. 2020. doi:10.1111/camh.12387
 101. Black MM. Effects of vitamin B 12 and folate deficiency on brain development in children. 2008;29(2):126-131.
 102. Suskind DL. Nutritional Deficiencies During Normal Growth. *Pediatr Clin North Am*. 2009. doi:10.1016/j.pcl.2009.07.004
 103. Wiedeman AM, Barr SI, Green TJ, Xu Z, Innis SM, Kitts DD. Dietary choline intake: Current state of knowledge across the life cycle. *Nutrients*. 2018. doi:10.3390/nu10101513
 104. Zeisel SH, Da Costa KA. Choline: An essential nutrient for public health. *Nutr Rev*. 2009;67(11):615-623. doi:10.1111/j.1753-4887.2009.00246.x
 105. Prelicz CR, Lotrean LM. Choline intake and its food sources in the diet of Romanian kindergarten children. *Nutrients*. 2017. doi:10.3390/nu9080896
 106. Papakostas GI, Shelton RC, Zajecka JM, et al. L-methylfolate as adjunctive therapy for SSRI-resistant major depression: Results of two randomized, double-blind, parallel-sequential trials. *Am J Psychiatry*. 2012. doi:10.1176/appi.ajp.2012.11071114
 107. Dartois LL, Stutzman DL, Morrow M. L-methylfolate Augmentation to Antidepressants for Adolescents with Treatment-Resistant Depression: A Case Series. *J Child Adolesc Psychopharmacol*. 2019. doi:10.1089/cap.2019.0006
 108. Black MM. Effects of vitamin B12 and folate deficiency on brain development in children. In: *Food and Nutrition Bulletin*. ; 2008. doi:10.1177/15648265080292s117
 109. Weydert J. Vitamin D in Children’s Health. *Children*. 2014. doi:10.3390/children1020208
 110. Elshorbagy HH, Barseem NF, Abdelghani WE, et al. Impact of Vitamin D Supplementation on Attention-Deficit Hyperactivity Disorder in Children. *Ann Pharmacother*. 2018. doi:10.1177/1060028018759471
 111. Gan J, Galer P, Ma D, Chen C, Xiong T. The Effect of Vitamin D Supplementation on Attention-Deficit/Hyperactivity Disorder: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. *J Child Adolesc Psychopharmacol*. 2019. doi:10.1089/cap.2019.0059
 112. Dehbokri N, Noorazar G, Ghaffari A, Mehdizadeh G, Sarbakhsh P, Ghaffary S. Effect of vitamin D treatment in children with attention-deficit hyperactivity disorder. *World J Pediatr*. 2019. doi:10.1007/s12519-018-0209-8
 113. Kamen DL, Tangpricha V. Vitamin D and molecular actions on the immune system: Modulation of innate and autoimmunity. *J Mol Med*. 2010. doi:10.1007/s00109-010-0590-9
 114. Borges MC, Martini LA, Rogero MM. Current perspectives on vitamin D, immune system, and

- chronic diseases. *Nutrition*. 2011. doi:10.1016/j.nut.2010.07.022
115. Ali N. Role of vitamin D in preventing of COVID-19 infection, progression and severity. *J Infect Public Health*. 2020. doi:10.1016/j.jiph.2020.06.021
116. Jia F, Shan L, Wang B, et al. Bench to bedside review: Possible role of vitamin D in autism spectrum disorder. *Psychiatry Res*. 2018. doi:10.1016/j.psychres.2017.12.005
117. Mazahery H, Camargo CA, Conlon C, Beck KL, Kruger MC, von Hurst PR. Vitamin D and autism spectrum disorder: A literature review. *Nutrients*. 2016. doi:10.3390/nu8040236
118. García-Serna AM, Morales E. Neurodevelopmental effects of prenatal vitamin D in humans: systematic review and meta-analysis. *Mol Psychiatry*. 2019. doi:10.1038/s41380-019-0357-9
119. Mohammadpour N, Jazayeri S, Tehrani-Doost M, 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. doi:10.1080/1028415X.2016.1262097
120. Dehbokri N, Noorazar G, Ghaffari A, Mehdizadeh G, Sarbakhsh P, Ghaffary S. Effect of vitamin D treatment in children with attention-deficit hyperactivity disorder. *World J Pediatr*. 2019. doi:10.1007/s12519-018-0209-8
121. Gan J, Galer P, Ma D, Chen C, Xiong T. The Effect of Vitamin D Supplementation on Attention-Deficit/Hyperactivity Disorder: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. *J Child Adolesc Psychopharmacol*. 2019. doi:10.1089/cap.2019.0059
122. Elshorbagy HH, Barseem NF, Abdelghani WE, et al. Impact of Vitamin D Supplementation on Attention-Deficit Hyperactivity Disorder in Children. *Ann Pharmacother*. 2018. doi:10.1177/1060028018759471
123. Weydert J. Vitamin D in Children’s Health. *Children*. 2014. doi:10.3390/children1020208
124. Clemens R, Kranz S, Mobley AR, et al. Filling America’s fiber intake gap: Summary of a roundtable to probe realistic solutions with a focus on grain-based foods. *J Nutr*. 2012. doi:10.3945/jn.112.160176
125. Quagliani D, Felt-Gunderson P. Closing America’s Fiber Intake Gap: Communication Strategies From a Food and Fiber Summit. *Am J Lifestyle Med*. 2017. doi:10.1177/1559827615588079
126. Alves-Santos AM, Sugizaki CSA, Lima GC, Naves MMV. Prebiotic effect of dietary polyphenols: A systematic review. *J Funct Foods*. 2020. doi:10.1016/j.jff.2020.104169
127. Carrera-Quintanar L, Roa RIL, Quintero-Fabián S, Sánchez-Sánchez MA, Vizmanos B, Ortuño-Sahagún D. Phytochemicals that influence gut microbiota as prophylactics and for the treatment of obesity and inflammatory diseases. *Mediators Inflamm*. 2018. doi:10.1155/2018/9734845
128. Guasch-Ferré M, Merino J, Sun Q, Fitó M, Salas-Salvadó J. Dietary Polyphenols, Mediterranean Diet, Prediabetes, and Type 2 Diabetes: A Narrative Review of the Evidence. *Oxid Med Cell Longev*. 2017. doi:10.1155/2017/6723931
129. Vauzour D, Rodriguez-Mateos A, Corona G, Oruna-Concha MJ, Spencer JPE. Polyphenols and human health: Prevention of disease and mechanisms of action. *Nutrients*. 2010;2(11):1106-1131. doi:10.3390/nu2111106
130. Minich DM. A Review of the Science of Colorful, Plant-Based Food and Practical Strategies for “Eating the Rainbow.” *J Nutr Metab*. 2019;2019:1-19. doi:10.1155/2019/2125070

FEEDING OUR CHILDREN – CHAPTER REFERENCES

131. Gupta C, Prof DP. Phytonutrients as therapeutic agents. 2014;(July). doi:10.1515/jcim-2013-0021
132. Hodges RE, Minich DM. Modulation of Metabolic Detoxification Pathways Using Foods and Food-Derived Components: A Scientific Review with Clinical Application. *J Nutr Metab.* 2015. doi:10.1155/2015/760689
133. Gibson RS, Heath ALM, Szymlek-Gay EA. Is iron and zinc nutrition a concern for vegetarian infants and young children in industrialized countries? In: *American Journal of Clinical Nutrition.* ; 2014. doi:10.3945/ajcn.113.071241
134. Pawlak R, Bell K. Iron Status of Vegetarian Children: A Review of Literature. *Ann Nutr Metab.* 2017. doi:10.1159/000466706
135. Baroni L, Goggi S, Battaglino R, et al. Vegan nutrition for mothers and children: Practical tools for healthcare providers. *Nutrients.* 2019. doi:10.3390/nu11010005
136. Hunt JR. Bioavailability of iron, zinc, and other trace minerals from vegetarian diets. In: *American Journal of Clinical Nutrition.* ; 2003. doi:10.1093/ajcn/78.3.633s
137. Sherriff A, Emond A, Hawkins N, Golding J. Haemoglobin and ferritin concentrations in children aged 12 and 18 months. *Arch Dis Child.* 1999. doi:10.1136/adc.80.2.153
138. Oatley H, Borkhoff CM, Chen S, et al. Screening for iron deficiency in early childhood using serum ferritin in the primary care setting. *Pediatrics.* 2018. doi:10.1542/peds.2018-2095
139. CDC. National Report on Biochemical Indicators of Diet and Nutrition in the U.S. Population 1999–2002. https://www.cdc.gov/nutritionreport/99-02/pdf/nr_ch3.pdf
140. WHO Guideline: Use of Ferritin Concentrations To Assess Iron Status In Individuals And Populations. www.who.int/docs/default-source/micronutrients/ferritin-guideline/ferritin-guidelines-executivesummary.pdf
141. National Institutes of Health (www.NIH.gov),
142. USDA Nutrient Database (<https://fdc.nal.usda.gov/>)
143. Health Link British Columbia (www.healthlinkBC.ca),
144. Linus Pauling Institute (<https://lpi.oregonstate.edu/mic/minerals/iron>)

Endnotes

Chapter 13

1. Sicherer SH, Sampson HA, York N. Food allergy: A review and update on epidemiology, pathogenesis, diagnosis, prevention, and management. *JACI*. 2018. doi:10.1016/j.jaci.2017.11.003
2. De Martinis M, Sirufo MM, Suppa M, Ginaldi L. New perspectives in food allergy. *Int J Mol Sci*. 2020. doi:10.3390/ijms21041474
3. Brill H. Approach to milk protein allergy in infants. *Can Fam Physician*. 2008.
4. Vandenplas Y, Gottrand F, Veereman-Wauters G, et al. Gastrointestinal manifestations of cow's milk protein allergy and gastrointestinal motility. *Acta Paediatr Int J Paediatr*. 2012. doi:10.1111/j.1651-2227.2012.02808.x
5. Vandenplas Y, Brueton M, Dupont C. Guidelines for the diagnosis and management of cow's milk protein allergy in infants (Archives of Disease in Childhood (2007) 92 (902-908)). *Arch Dis Child*. 2008. doi:10.1136/adc.2006.110999corr1
6. Fox A, Bird JA, Fiocchi A, et al. The potential for pre-, pro- and synbiotics in the management of infants at risk of cow's milk allergy or with cow's milk allergy: An exploration of the rationale, available evidence and remaining questions. *World Allergy Organ J*. 2019. doi:10.1016/j.waojou.2019.100034
7. Lack G. Clinical practice. Food allergy. *N Engl J Med*. 2008.
8. Azouz NP, Rothenberg ME. Mechanisms of gastrointestinal allergic disorders. *J Clin Invest*. 2019. doi:10.1172/JCI124604
9. De Martinis M, Sirufo MM, Suppa M, Di Silvestre D, Ginaldi L. Sex and gender aspects for patient stratification in allergy prevention and treatment. *Int J Mol Sci*. 2020. doi:10.3390/ijms21041535
10. Turner PJ, Jerschow E, Umasunthar T, Lin R, Campbell DE, Boyle RJ. Fatal Anaphylaxis: Mortality Rate and Risk Factors. *J Allergy Clin Immunol Pract*. 2017. doi:10.1016/j.jaip.2017.06.031
11. Sicherer SH, Sampson HA. Food allergy: Recent advances in pathophysiology and treatment. *Annu Rev Med*. 2009. doi:10.1146/annurev.med.60.042407.205711
12. Ho MHK, Wong WHS, Chang C. Clinical spectrum of food allergies: A comprehensive review. *Clin Rev Allergy Immunol*. 2014. doi:10.1007/s12016-012-8339-6
13. Mastorilli C, Caffarelli C, Hoffmann-Sommergruber K. Food allergy and atopic dermatitis: Prediction, progression, and prevention. *Pediatr Allergy Immunol*. 2017. doi:10.1111/pai.12831
14. Hill DJ, Hosking CS. Food allergy and atopic dermatitis in infancy: An epidemiologic study. *Pediatr Allergy Immunol*. 2004. doi:10.1111/j.1399-3038.2004.00178.x
15. Cabanillas B, Brehler AC, Novak N. Atopic dermatitis phenotypes and the need for personalized medicine. *Curr Opin Allergy Clin Immunol*. 2017. doi:10.1097/ACI.0000000000000376
16. Guidelines for the diagnosis and management of food allergy in the United States: Report of the NIAID-sponsored expert panel. *J Allergy Clin Immunol*. 2010. doi:10.1016/j.jaci.2010.10.007

17. Atkins D, Kramer R, Capocelli K, Lovell M, Furuta GT. Eosinophilic esophagitis: The newest esophageal inflammatory disease. *Nat Rev Gastroenterol Hepatol*. 2009. doi:10.1038/nrgastro.2009.45
18. Liacouras CA, Furuta GT, Hirano I, et al. Eosinophilic esophagitis: Updated consensus recommendations for children and adults. *J Allergy Clin Immunol*. 2011. doi:10.1016/j.jaci.2011.02.040
19. Furuta GT, Liacouras CA, Collins MH, et al. Eosinophilic Esophagitis in Children and Adults: A Systematic Review and Consensus Recommendations for Diagnosis and Treatment. *Gastroenterology*. 2007. doi:10.1053/j.gastro.2007.08.017
20. Hirano I, Furuta GT. Approaches and Challenges to Management of Pediatric and Adult Patients With Eosinophilic Esophagitis. *Gastroenterology*. 2020. doi:10.1053/j.gastro.2019.09.052
21. Caubet JC, Szajewska H, Shamir R, Nowak-Węgrzyn A. Non-IgE-mediated gastrointestinal food allergies in children. *Pediatr Allergy Immunol*. 2017. doi:10.1111/pai.12659
22. Turnbull JL, Adams HN, Gorard DA. Review article: The diagnosis and management of food allergy and food intolerances. *Aliment Pharmacol Ther*. 2015. doi:10.1111/apt.12984
23. Labrosse R, Graham F, Caubet JC. Non-ige-mediated gastrointestinal food allergies in children: An update. *Nutrients*. 2020. doi:10.3390/nu12072086
24. Nowak-Węgrzyn A, Chehade M, Groetch ME, et al. International consensus guidelines for the diagnosis and management of food protein–induced enterocolitis syndrome: Executive summary—Workgroup Report of the Adverse Reactions to Foods Committee, American Academy of Allergy, Asthma & Immunology. *J Allergy Clin Immunol*. 2017. doi:10.1016/j.jaci.2016.12.966
25. Leonard SA, Nowak-Węgrzyn A. Manifestations, diagnosis, and management of food protein-induced enterocolitis syndrome. *Pediatr Ann*. 2013. doi:10.3928/00904481-20130619-11
26. Leonard SA, Pecora V, Fiocchi AG, Nowak-Węgrzyn A. Food protein-induced enterocolitis syndrome: A review of the new guidelines. *World Allergy Organ J*. 2018. doi:10.1186/s40413-017-0182-z
27. Blackman AC, Anvari S, Davis CM, Anagnostou A. Emerging triggers of food protein–induced enterocolitis syndrome: Lessons from a pediatric cohort of 74 children in the United States. *Ann Allergy, Asthma Immunol*. 2019. doi:10.1016/j.anai.2019.01.022
28. Koletzko S, Niggemann B, Arato A, et al. Diagnostic approach and management of cow’s-milk protein allergy in infants and children: Espghan gi committee practical guidelines. *J Pediatr Gastroenterol Nutr*. 2012. doi:10.1097/MPG.0b013e31825c9482
29. Carroccio A, Montalto G, Custro N, et al. Evidence of very delayed clinical reactions to cow’s milk in cow’s milk- intolerant patients. *Allergy Eur J Allergy Clin Immunol*. 2000. doi:10.1034/j.1398-9995.2000.00417.x
30. Høst A, Halken S, Jacobsen HP, Christensen AE, Herskind AM, Plesner K. Clinical course of cow’s milk protein allergy/intolerance and atopic diseases in childhood. In: *Pediatric Allergy and Immunology, Supplement*. ; 2002. doi:10.1034/j.1399-3038.13.s.15.7.x
31. Allen KJ, Davidson GP, Day AS, et al. Management of cow’s milk protein allergy in infants and young children: An expert panel perspective. *J Paediatr Child Health*. 2009. doi:10.1111/j.1440-1754.2009.01546.x

32. Ravelli AM, Tobanelli P, Volpi S, Ugazio AG. Vomiting and gastric motility in infants with cow's milk allergy. *J Pediatr Gastroenterol Nutr.* 2001. doi:10.1097/00005176-200101000-00017
33. Ravelli A, Villanacci V, Chiappa S, Bolognini S, Manenti S, Fuoti M. Dietary protein-induced proctocolitis in childhood. *Am J Gastroenterol.* 2008. doi:10.1111/j.1572-0241.2008.02035.x
34. Vandenplas Y. Management of paediatric GERD. *Nat Rev Gastroenterol Hepatol.* 2014. doi:10.1038/nrgastro.2013.199
35. Caffarelli C, Baldi F, Bendandi B, Calzone L, Marani M, Pasquinelli P. Cow's milk protein allergy in children: A practical guide. *Ital J Pediatr.* 2010. doi:10.1186/1824-7288-36-5
36. Heine RG. Gastroesophageal reflux disease, colic and constipation in infants with food allergy. *Curr Opin Allergy Clin Immunol.* 2006. doi:10.1097/01.all.0000225164.06016.5d
37. Maloney J, Nowak-Wegrzyn A. Educational clinical case series for pediatric allergy and immunology: Allergic proctocolitis, food protein-induced enterocolitis syndrome and allergic eosinophilic gastroenteritis with protein-losing gastroenteropathy as manifestations of non-IgE-mediate. *Pediatr Allergy Immunol.* 2007. doi:10.1111/j.1399-3038.2007.00561.x
38. Ziegler E. Adverse effects of cow's milk in infants. In: *Nestle Nutrition Workshop Series: Pediatric Program.* ; 2007. doi:10.1159/000106369
39. Ziegler EE. Consumption of cow's milk as a cause of iron deficiency in infants and toddlers. *Nutr Rev.* 2011. doi:10.1111/j.1753-4887.2011.00431.x
40. Iacono G, Cavalaiò F, Montalto G, et al. Intolerance of cow's milk and chronic constipation in children. *Eur J Gastroenterol Hepatol.* 1998. doi:10.1097/00042737-199812000-00023
41. Iacono G, Bonventre S, Scalici C, et al. Food intolerance and chronic constipation: Manometry and histology study. *Eur J Gastroenterol Hepatol.* 2006. doi:10.1097/00042737-200602000-00006
42. Carroccio A, Scalici C, Maresi E, et al. Chronic constipation and food intolerance: A model of proctitis causing constipation. *Scand J Gastroenterol.* 2005. doi:10.1080/00365520410009401
43. Carroccio A, Iacono G. Review article: Chronic constipation and food hypersensitivity - An intriguing relationship. *Aliment Pharmacol Ther.* 2006. doi:10.1111/j.1365-2036.2006.03125.x
44. Borrelli O, Barbara G, Di Nardo G, et al. Neuroimmune interaction and anorectal motility in children with food allergy-related chronic constipation. *Am J Gastroenterol.* 2009. doi:10.1038/ajg.2008.109
45. Turunen S, Karttunen TJ, Kokkonen J. Lymphoid nodular hyperplasia and cow's milk hypersensitivity in children with chronic constipation. *J Pediatr.* 2004. doi:10.1016/j.jpeds.2004.06.067
46. Putnam PE. The milk of human constipation. *J Pediatr.* 2004. doi:10.1016/j.jpeds.2004.08.026
47. Irastorza I, Ibañez B, Delgado-Sanzonetti L, Maruri N, Vitoria JC. Cow's-milk-free diet as a therapeutic option in childhood chronic constipation. *J Pediatr Gastroenterol Nutr.* 2010. doi:10.1097/MPG.0b013e3181cd2653
48. Daher S, Tahan S, Solé D, et al. Cow's milk protein intolerance and chronic constipation in children. *Pediatr Allergy Immunol.* 2001. doi:10.1034/j.1399-3038.2001.0o057.x
49. Lanou AJ, Berkow SE, Barnard ND. Calcium, dairy products, and bone health in children and young adults: A reevaluation of the evidence. *Pediatrics.* 2005;115(3):736-743. doi:10.1542/peds.2004-0548

50. Lanou AJ. Should dairy be recommended as part of a healthy vegetarian diet? Counterpoint. In: *American Journal of Clinical Nutrition.* ; 2009. doi:10.3945/ajcn.2009.26736P
51. A.J. L, S.E. B, N.D. B. Calcium, dairy products, and bone health in children and young adults: A reevaluation of the evidence. *Pediatrics.* 2005.
52. Lloyd T, Petit MA, Lin HM, Beck TJ. Lifestyle factors and the development of bone mass and bone strength in young women. *J Pediatr.* 2004. doi:10.1016/j.jpeds.2004.02.047
53. Cumming RG, Cummings SR, Nevitt MC, et al. Calcium intake and fracture risk: Results from the study of osteoporotic fractures. *Am J Epidemiol.* 1997. doi:10.1093/oxfordjournals.aje.a009052
54. Cumming RG, Klineberg RJ. Case-control study of risk factors for hip fractures in the elderly. *Am J Epidemiol.* 1994. doi:10.1093/oxfordjournals.aje.a117032
55. Bian S, Hu J, Zhang K, Wang Y, Yu M, Ma J. Dairy product consumption and risk of hip fracture: A systematic review and meta-analysis. *BMC Public Health.* 2018. doi:10.1186/s12889-018-5041-5
56. Misselwitz B, Butter M, Verbeke K, Fox MR. Update on lactose malabsorption and intolerance: Pathogenesis, diagnosis and clinical management. *Gut.* 2019. doi:10.1136/gutjnl-2019-318404
57. Storhaug CL, Fosse SK, Fadnes LT. Country, regional, and global estimates for lactose malabsorption in adults: a systematic review and meta-analysis. *Lancet Gastroenterol Hepatol.* 2017. doi:10.1016/S2468-1253(17)30154-1
58. Mattar R, Mazo DF de C, Carrilho FJ. Lactose intolerance: Diagnosis, genetic, and clinical factors. *Clin Exp Gastroenterol.* 2012. doi:10.2147/CEG.S32368
59. Fassio F, Facioni MS, Guagnini F. Lactose maldigestion, malabsorption, and intolerance: a comprehensive review with a focus on current management and future perspectives. *Nutrients.* 2018. doi:10.3390/nu10111599
60. Brooke-Taylor S, Dwyer K, Woodford K, Kost N. Systematic review of the gastrointestinal effects of A1 compared with A2 β -casein. *Adv Nutr.* 2017. doi:10.3945/an.116.013953
61. Milan AM, Shrestha A, Karlström HJ, et al. Comparison of the impact of bovine milk β -casein variants on digestive comfort in females self-reporting dairy intolerance: A randomized controlled trial. *Am J Clin Nutr.* 2020. doi:10.1093/ajcn/nqz279
62. Jianqin S, Leiming X, Lu X, Yelland GW, Ni J, Clarke AJ. Effects of milk containing only A2 beta casein versus milk containing both A1 and A2 beta casein proteins on gastrointestinal physiology, symptoms of discomfort, and cognitive behavior of people with self-reported intolerance to traditional cows' milk. *Nutr J.* 2016. doi:10.1186/s12937-016-0147-z
63. He M, Sun J, Jiang ZQ, Yang YX. Effects of cow's milk beta-casein variants on symptoms of milk intolerance in Chinese adults: A multicentre, randomised controlled study. *Nutr J.* 2017. doi:10.1186/s12937-017-0275-0
64. Pal S, Woodford K, Kukuljan S, Ho S. Milk intolerance, beta-casein and lactose. *Nutrients.* 2015. doi:10.3390/nu7095339
65. Ho S, Woodford K, Kukuljan S, Pal S. Comparative effects of A1 versus A2 beta-casein on gastrointestinal measures: A blinded randomised cross-over pilot study. *Eur J Clin Nutr.* 2014. doi:10.1038/ejcn.2014.127

66. Fedewa A, Rao SSC. Dietary fructose intolerance, fructan intolerance and FODMAPs. *Curr Gastroenterol Rep*. 2014. doi:10.1007/s11894-013-0370-0
67. Escobar MA, Lustig D, Pflugeisen BM, et al. Fructose intolerance/malabsorption and recurrent abdominal pain in children. *J Pediatr Gastroenterol Nutr*. 2014. doi:10.1097/MPG.0000000000000232
68. Barrett JS, Gibson PR. Fermentable oligosaccharides, disaccharides, monosaccharides and polyols (FODMAPs) and nonallergic food intolerance: FODMAPs or food chemicals? *Therap Adv Gastroenterol*. 2012. doi:10.1177/1756283X11436241
69. Gibson PR. The evidence base for efficacy of the low FODMAP diet in irritable bowel syndrome: is it ready for prime time as a first-line therapy? *J Gastroenterol Hepatol*. 2017. doi:10.1111/jgh.13693
70. Altobelli E, Del Negro V, Angeletti PM, Latella G. Low-FODMAP diet improves irritable bowel syndrome symptoms: A meta-analysis. *Nutrients*. 2017. doi:10.3390/nu9090940
71. Halmos EP, Power VA, Shepherd SJ, Gibson PR, Muir JG. A diet low in FODMAPs reduces symptoms of irritable bowel syndrome. *Gastroenterology*. 2014. doi:10.1053/j.gastro.2013.09.046
72. Fewtrell M, Bronsky J, Campoy C, et al. Complementary feeding: A position paper by the European Society for Paediatric Gastroenterology, Hepatology, and Nutrition (ESPGHAN) committee on nutrition. *J Pediatr Gastroenterol Nutr*. 2017. doi:10.1097/MPG.0000000000001454
73. Ferraro V, Zanconato S, Carraro S. Timing of food introduction and the risk of food allergy. *Nutrients*. 2019. doi:10.3390/nu11051131
74. West C. Introduction of Complementary Foods to Infants. *Ann Nutr Metab*. 2017. doi:10.1159/000457928
75. Caffarelli C, Di Mauro D, Mastroianni C, Bottau P, Cipriani F, Ricci G. Solid food introduction and the development of food allergies. *Nutrients*. 2018. doi:10.3390/nu10111790
76. Perkin MR, Logan K, Marrs T, et al. Enquiring about Tolerance (EAT) study: Feasibility of an early allergenic food introduction regimen. *J Allergy Clin Immunol*. 2016. doi:10.1016/j.jaci.2015.12.1322
77. Zhao W, Ho H en, Bunyavanich S. The gut microbiome in food allergy. *Ann Allergy, Asthma Immunol*. 2019. doi:10.1016/j.anai.2018.12.012
78. Canani RB, Paparo L, Nocerino R, et al. Gut microbiome as target for innovative strategies against food allergy. *Front Immunol*. 2019. doi:10.3389/fimmu.2019.00191
79. Chernikova D, Yuan I, Shaker M. Prevention of allergy with diverse and healthy microbiota: an update. *Curr Opin Pediatr*. 2019. doi:10.1097/MOP.0000000000000766
80. Garcia-Larsen V, Ierodiakonou D, Jarrold K, et al. Diet during pregnancy and infancy and risk of allergic or autoimmune disease: A systematic review and meta-analysis. *PLoS Med*. 2018. doi:10.1371/journal.pmed.1002507
81. Zhang GQ, Hu HJ, Liu CY, Zhang Q, Shakya S, Li ZY. Probiotics for prevention of atopy and food hypersensitivity in early childhood A PRISMA-compliant systematic review and meta-analysis of randomized controlled trials. *Med (United States)*. 2016. doi:10.1097/MD.0000000000002562
82. Cuello-Garcia CA, Brozek JL, Fiocchi A, et al. Probiotics for the prevention of allergy: A systematic review and meta-analysis of randomized controlled trials. *J Allergy Clin Immunol*. 2015. doi:10.1016/j.jaci.2015.04.031

83. Fiocchi A, Pawankar R, Cuello-Garcia C, et al. World Allergy Organization-McMaster University Guidelines for Allergic Disease Prevention (GLAD-P): Probiotics. *World Allergy Organ J.* 2015. doi:10.1186/s40413-015-0055-2
84. Tan-Lim CSC, Esteban-Ipac NAR. Probiotics as treatment for food allergies among pediatric patients: A meta-analysis. *World Allergy Organ J.* 2018. doi:10.1186/s40413-018-0204-5
85. Rather IA, Bajpai VK, Kumar S, Lim J, Paek WK, Park YH. Probiotics and atopic dermatitis: An overview. *Front Microbiol.* 2016. doi:10.3389/fmicb.2016.00507
86. Huang R, Ning H, Shen M, Li J, Zhang J, Chen X. Probiotics for the treatment of atopic dermatitis in children: A systematic review and meta-analysis of randomized controlled trials. *Front Cell Infect Microbiol.* 2017. doi:10.3389/fcimb.2017.00392
87. Reese I, Werfel T. Do long-chain omega-3 fatty acids protect from atopic dermatitis? *JDDG - J Ger Soc Dermatology.* 2015. doi:10.1111/ddg.12780
88. Koch C, Dölle S, Metzger M, et al. Docosahexaenoic acid (DHA) supplementation in atopic eczema: A randomized, double-blind, controlled trial. *Br J Dermatol.* 2008. doi:10.1111/j.1365-2133.2007.08430.x
89. Gardner KG, Gebretsadik T, Hartman TJ, et al. Prenatal Omega-3 and Omega-6 Polyunsaturated Fatty Acids and Childhood Atopic Dermatitis. *J Allergy Clin Immunol Pract.* 2020. doi:10.1016/j.jaip.2019.09.031
90. Chalmers JR, Haines RH, Bradshaw LE, et al. Daily emollient during infancy for prevention of eczema: the BEEP randomised controlled trial. *Lancet.* 2020. doi:10.1016/S0140-6736(19)32984-8
91. Skjerven HO, Rehbinder EM, Vettukattil R, et al. Skin emollient and early complementary feeding to prevent infant atopic dermatitis (PreventADALL): a factorial, multicentre, cluster-randomised trial. *Lancet.* 2020. doi:10.1016/S0140-6736(19)32983-6
92. Perrett KP, Peters RL. Emollients for prevention of atopic dermatitis in infancy. *Lancet.* 2020. doi:10.1016/S0140-6736(19)33174-5

Endnotes

Chapter 14

1. Jones AL. The gluten-free diet: Fad or necessity? *Diabetes Spectr.* 2017. doi:10.2337/ds16-0022
2. Fasano A, Not T, Wang W, et al. Zonulin, a newly discovered modulator of intestinal permeability, and its expression in coeliac disease. *Lancet.* 2000. doi:10.1016/S0140-6736(00)02169-3
3. Fasano A. Zonulin, regulation of tight junctions, and autoimmune diseases. *Ann NY Acad Sci.* 2012. doi:10.1111/j.1749-6632
4. Guidelines for the diagnosis and management of food allergy in the United States: Report of the NIAID-sponsored expert panel. *J Allergy Clin Immunol.* 2010. doi:10.1016/j.jaci.2010.10.007
5. Singh P, Arora A, Strand TA, et al. Global Prevalence of Celiac Disease: Systematic Review and Meta-analysis. *Clin Gastroenterol Hepatol.* 2018. doi:10.1016/j.cgh.2017.06.037
6. Parra-Medina R, Molano-Gonzalez N, Rojas-Villarraga A, et al. Prevalence of celiac disease in Latin America: A systematic review and meta-regression. *PLoS One.* 2015. doi:10.1371/journal.pone.0124040
7. Yuan J, Gao J, Li X, et al. The tip of the "Celiac Iceberg" in China: A systematic review and meta-analysis. *PLoS One.* 2013. doi:10.1371/journal.pone.0081151
8. Chen CY, Li JN. Insufficient awareness of celiac disease in China: Population-based screening is needed. *Chin Med J (Engl).* 2019. doi:10.1097/CM9.0000000000000305
9. Lebowitz B. Celiac Disease and the Forgotten 10 %: The "Silent Minority." *Dig Dis Sci.* 2015. doi:10.1007/s10620-015-3572-5
10. Fasano A. Celiac Disease — How to Handle a Clinical Chameleon. *N Engl J Med.* 2003. doi:10.1056/nejme030050
11. Hill ID, Fasano A, Guandalini S, et al. NASPGHAN clinical report on the diagnosis and treatment of gluten-related disorders. *J Pediatr Gastroenterol Nutr.* 2016. doi:10.1097/MPG.0000000000001216
12. Hill ID, Dirks MH, Liptak GS, et al. Guideline for the diagnosis and treatment of celiac disease in children: Recommendations of the North American Society for Pediatric Gastroenterology, Hepatology and Nutrition. *J Pediatr Gastroenterol Nutr.* 2005. doi:10.1097/00005176-200501000-00001
13. Bonamico M, Ferri M, Mariani P, et al. Serologic and genetic markers of celiac disease: A sequential study in the screening of first degree relatives. *J Pediatr Gastroenterol Nutr.* 2006. doi:10.1097/01.mpg.0000189337.08139.83
14. Fasano A. *A Clinical Guide To Gluten-Related Disorders.* First. Wolters Kluwer|Lippencott, Williams and Wilkins; 2014.
15. Serena G, D'Avino P, Fasano A. Celiac Disease and Non-celiac Wheat Sensitivity: State of Art of Non-dietary Therapies. *Front Nutr.* 2020. doi:10.3389/fnut.2020.00152
16. Bushara KO. Neurologic presentation of celiac disease. *Gastroenterology.* 2005. doi:10.1053/j.gastro.2005.02.018

17. Fasano A, Sapone A, Zevallos V, Schuppan D. Nonceliac gluten sensitivity. *Gastroenterology*. 2015. doi:10.1053/j.gastro.2014.12.049
18. Catassi C, Bai JC, Bonaz B, et al. Non-celiac gluten sensitivity: The new frontier of gluten related disorders. *Nutrients*. 2013. doi:10.3390/nu5103839
19. Catassi C. Gluten sensitivity. *Ann Nutr Metab*. 2015. doi:10.1159/000440990
20. Isasi C, Colmenero I, Casco F, et al. Fibromyalgia and non-celiac gluten sensitivity: a description with remission of fibromyalgia. *Rheumatol Int*. 2014. doi:10.1007/s00296-014-2990-6
21. Sapone A, Bai JC, Ciacci C, et al. Spectrum of gluten-related disorders: Consensus on new nomenclature and classification. *BMC Med*. 2012. doi:10.1186/1741-7015-10-13
22. Carroccio A, Mansueto P, Iacono G, et al. Non-celiac wheat sensitivity diagnosed by double-blind placebo-controlled challenge: Exploring a new clinical entity. *Am J Gastroenterol*. 2012. doi:10.1038/ajg.2012.236
23. Makharia A, Catassi C, Makharia GK. The overlap between irritable bowel syndrome and non-celiac gluten sensitivity: A clinical dilemma. *Nutrients*. 2015. doi:10.3390/nu7125541
24. Junker Y, Zeissig S, Kim SJ, et al. Wheat amylase trypsin inhibitors drive intestinal inflammation via activation of toll-like receptor 4. *J Exp Med*. 2012. doi:10.1084/jem.20102660
25. Varjú P, Farkas N, Hegyi P, et al. Low fermentable oligosaccharides, disaccharides, monosaccharides and polyols (FODMAP) diet improves symptoms in adults suffering from irritable bowel syndrome (IBS) compared to standard IBS diet: A meta-analysis of clinical studies. *PLoS One*. 2017. doi:10.1371/journal.pone.0182942
26. Altobelli E, Del Negro V, Angeletti PM, Latella G. Low-FODMAP diet improves irritable bowel syndrome symptoms: A meta-analysis. *Nutrients*. 2017. doi:10.3390/nu9090940
27. Kelly CP, Bai JC, Liu E, Leffler DA. Advances in diagnosis and management of celiac disease. *Gastroenterology*. 2015. doi:10.1053/j.gastro.2015.01.044
28. Greco L, Gobbetti M, Auricchio R, et al. Safety for Patients With Celiac Disease of Baked Goods Made of Wheat Flour Hydrolyzed During Food Processing. *Clin Gastroenterol Hepatol*. 2011. doi:10.1016/j.cgh.2010.09.025
29. Cristofori F, Francavilla R, Capobianco D, Dargenio VN, Filardo S, Mastromarino P. Bacterial-Based Strategies to Hydrolyze Gluten Peptides and Protect Intestinal Mucosa. *Front Immunol*. 2020. doi:10.3389/fimmu.2020.567801
30. Akobeng AK, Singh P, Kumar M, Al Khodor S. Role of the gut microbiota in the pathogenesis of coeliac disease and potential therapeutic implications. *Eur J Nutr*. 2020. doi:10.1007/s00394-020-02324-y
31. Di Cagno R, Barbato M, Di Camillo C, et al. Gluten-free sourdough wheat baked goods appear safe for young celiac patients: A pilot study. *J Pediatr Gastroenterol Nutr*. 2010. doi:10.1097/MPG.0b013e3181f22ba4

Endnotes

Chapter 15

1. Van Ginkel R, Reitsma JB, Büller HA, Van Wijk MP, Taminiou JAJM, Benninga MA. Childhood constipation: Longitudinal follow-up beyond puberty. *Gastroenterology*. 2003. doi:10.1016/S0016-5085(03)00888-6
2. Loening-Baucke V. Controversies in the management of chronic constipation. In: *Journal of Pediatric Gastroenterology and Nutrition*. ; 2001. doi:10.1097/00005176-200104001-00017
3. Schmulson MJ, Drossman DA. What is new in Rome IV. *J Neurogastroenterol Motil*. 2017. doi:10.5056/jnm16214
4. Robin SG, Keller C, Zwiener R, et al. Prevalence of Pediatric Functional Gastrointestinal Disorders Utilizing the Rome IV Criteria. *J Pediatr*. 2018. doi:10.1016/j.jpeds.2017.12.012
5. Hyams JS, Di Lorenzo C, Saps M, Shulman RJ, Staiano A, Van Tilburg M. Childhood functional gastrointestinal disorders: Child/adolescent. *Gastroenterology*. 2016. doi:10.1053/j.gastro.2016.02.015
6. Masi P, Miele E, Staiano A. Pediatric Anorectal Disorders. *Gastroenterol Clin North Am*. 2008. doi:10.1016/j.gtc.2008.07.002
7. King SK, Catto-Smith AG, Stanton MP, et al. 24-Hour colonic manometry in pediatric slow transit constipation shows significant reductions in antegrade propagation. *Am J Gastroenterol*. 2008. doi:10.1111/j.1572-0241.2008.01921.x
8. Hutson JM, Chase JW, Clarke MCC, et al. Slow-transit constipation in children: Our experience. *Pediatr Surg Int*. 2009. doi:10.1007/s00383-009-2363-5
9. Cook BJ, Lim E, Cook D, et al. Radionuclear transit to assess sites of delay in large bowel transit in children with chronic idiopathic constipation. *J Pediatr Surg*. 2005. doi:10.1016/j.jpedsurg.2004.11.029
10. Quagliani D, Felt-Gunderson P. Closing America’s Fiber Intake Gap: Communication Strategies From a Food and Fiber Summit. *Am J Lifestyle Med*. 2017. doi:10.1177/1559827615588079
11. Slavin J. Fiber and prebiotics: Mechanisms and health benefits. *Nutrients*. 2013;5(4):1417-1435. doi:10.3390/nu5041417
12. Holscher HD. Dietary fiber and prebiotics and the gastrointestinal microbiota. *Gut Microbes*. 2017;8(2):172-184. doi:10.1080/19490976.2017.1290756
13. Dhingra D, Michael M, Rajput H, Patil RT. Dietary fibre in foods: A review. *J Food Sci Technol*. 2012;49(3):255-266. doi:10.1007/s13197-011-0365-5
14. Courage KH. Fiber-Famished Gut Microbes Linked to Poor Health. *Sci Am*. 2015.
15. Desai MS, Seekatz AM, Koropatkin NM, et al. A Dietary Fiber-Deprived Gut Microbiota Degrades the Colonic Mucus Barrier and Enhances Pathogen Susceptibility. *Cell*. 2016. doi:10.1016/j.cell.2016.10.043

16. Yurrita LC, Martín ISM, Ciudad-Cabañas MJ, Calle-Purón ME, Cabria MH. Effectiveness of inulin intake on indicators of chronic constipation; a meta-analysis of controlled randomized clinical trials. *Nutr Hosp*. 2014. doi:10.3305/nh.2014.30.2.7565
17. McRorie JW, Chey WD. Fermented Fiber Supplements Are No Better Than Placebo for a Laxative Effect. *Dig Dis Sci*. 2016. doi:10.1007/s10620-016-4304-1
18. McRorie JW, Fahey GC, Gibb RD, Chey WD. Laxative effects of wheat bran and psyllium: Resolving enduring misconceptions about fiber in treatment guidelines for chronic idiopathic constipation. *J Am Assoc Nurse Pract*. 2020. doi:10.1097/JXX.0000000000000346
19. Mcrorie JW, Daggy BP, Morel JG, Diersing PS, Miner PB, Robinson M. Psyllium is superior to docusate sodium for treatment of chronic constipation. *Aliment Pharmacol Ther*. 1998. doi:10.1046/j.1365-2036.1998.00336.x
20. Eswaran S, Muir J, Chey WD. Fiber and functional gastrointestinal disorders. *Am J Gastroenterol*. 2013. doi:10.1038/ajg.2013.63
21. Soltanian N, Janghorbani M. Effect of flaxseed or psyllium vs. placebo on management of constipation, weight, glycemia, and lipids: A randomized trial in constipated patients with type 2 diabetes. *Clin Nutr ESPEN*. 2019. doi:10.1016/j.clnesp.2018.11.002
22. Sun J, Bai H, Ma J, et al. Effects of flaxseed supplementation on functional constipation and quality of life in a Chinese population: A randomized trial. *Asia Pac J Clin Nutr*. 2020. doi:10.6133/apjcn.202003_29(1).0009
23. Tabbers MM, De Milliano I, Roseboom MG, Benninga MA. Is Bifidobacterium breve effective in the treatment of childhood constipation? Results from a pilot study. *Nutr J*. 2011. doi:10.1186/1475-2891-10-19
24. De Milliano I, Tabbers MM, Van Der Post JA, Benninga MA. Is a multispecies probiotic mixture effective in constipation during pregnancy? “A pilot study.” *Nutr J*. 2012. doi:10.1186/1475-2891-11-80
25. Bekkali NLH, Bongers MEJ, Van Den Berg MM, Liem O, Benninga MA. The role of a probiotics mixture in the treatment of childhood constipation: A pilot study. *Nutr J*. 2007. doi:10.1186/1475-2891-6-17
26. Yang YX, He M, Hu G, et al. Effect of a fermented milk containing Bifidobacterium lactis DN-173010 on Chinese constipated women. *World J Gastroenterol*. 2008. doi:10.3748/wjg.14.6237
27. Guerra PVP, Lima LN, Souza TC, et al. Pediatric functional constipation treatment with bifidobacterium-containing yogurt: A crossover, double-blind, controlled trial. *World J Gastroenterol*. 2011. doi:10.3748/wjg.v17.i34.3916
28. Miller LE, Ouwehand AC. Probiotic supplementation decreases intestinal transit time: Meta-analysis of randomized controlled trials. *World J Gastroenterol*. 2013. doi:10.3748/wjg.v19.i29.4718
29. Dimidi E, Christodoulides S, Fragkos KC, Scott SM, Whelan K. The effect of probiotics on functional constipation in adults: a systematic review and meta-analysis of randomized controlled trials. *Am J Clin Nutr*. 2014;100(4):1075-1084. doi:10.3945/ajcn.114.089151
30. Miller LE, Zimmermann AK, Ouwehand AC. Contemporary meta-analysis of short-term probiotic consumption on gastrointestinal transit. *World J Gastroenterol*. 2016. doi:10.3748/wjg.v22.i21.5122

31. Vandenplas Y, Benninga M. Probiotics and functional gastrointestinal disorders in children. *J Pediatr Gastroenterol Nutr.* 2009. doi:10.1097/MPG.0b013e3181a1603a
32. De Schryver AM, Keulemans YC, Peters HP, et al. Effects of regular physical activity on defecation pattern in middle-aged patients complaining of chronic constipation. *Scand J Gastroenterol.* 2005. doi:10.1080/00365520510011641
33. Peters HPF, De Vries WR, Vanberge-Henegouwen GP, Akkermans LMA. Potential benefits and hazards of physical activity and exercise on the gastrointestinal tract. *Gut.* 2001. doi:10.1136/gut.48.3.435
34. Carroccio A, Iacono G. Review article: Chronic constipation and food hypersensitivity - An intriguing relationship. *Aliment Pharmacol Ther.* 2006. doi:10.1111/j.1365-2036.2006.03125.x
35. Iacono G, Carroccio A, Cavataio F, Montalto G, Cantarero MD, Notarbartolo A. Chronic constipation as a symptom of cow milk allergy. *J Pediatr.* 1995. doi:10.1016/S0022-3476(95)70496-5
36. Miceli Sopo S, Arena R, Greco M, Bergamini M, Monaco S. Constipation and cow's milk allergy: A review of the literature. *Int Arch Allergy Immunol.* 2014. doi:10.1159/000362365
37. Irastorza I, Ibañez B, Delgado-Sanzonetti L, Maruri N, Vitoria JC. Cow's-milk-free diet as a therapeutic option in childhood chronic constipation. *J Pediatr Gastroenterol Nutr.* 2010. doi:10.1097/MPG.0b013e3181cd2653
38. Andiran F, Dayi S, Mete E. Cows milk consumption in constipation and anal fissure in infants and young children. *J Paediatr Child Health.* 2003. doi:10.1046/j.1440-1754.2003.00152.x
39. Murakami K, Sasaki S, Okubo H, Takahashi Y, Hosoi Y, Itabashi M. Association between dietary fiber, water and magnesium intake and functional constipation among young Japanese women. *Eur J Clin Nutr.* 2007. doi:10.1038/sj.ejcn.1602573
40. Lee WTK, Ip KS, Chan JSH, Lui NWM, Young BWY. Increased prevalence of constipation in pre-school children is attributable to under-consumption of plant foods: A community-based study. *J Paediatr Child Health.* 2008. doi:10.1111/j.1440-1754.2007.01212.x
41. Dupont C, Hébert G. Magnesium sulfate-rich natural mineral waters in the treatment of functional constipation—a review. *Nutrients.* 2020. doi:10.3390/nu12072052
42. Benninga MA, Vandenplas Y, Bassil Z, et al. The Magnesium-rich formula for functional constipation in infants: A randomized comparator-controlled study. *Pediatr Gastroenterol Hepatol Nutr.* 2019. doi:10.5223/pghn.2019.22.3.270
43. Zar-Kessler C, Kuo B, Cole E, Benedix A, Belkind-Gerson J. Benefit of Pelvic Floor Physical Therapy in Pediatric Patients with Dyssynergic Defecation Constipation. *Dig Dis.* 2019. doi:10.1159/000500121
44. Hassanein SMA, Deifallah SM, Bastawy HA. Efficacy of oral magnesium therapy in the treatment of chronic constipation in spastic cerebral palsy children: a randomized controlled trial. *World J Pediatr.* 2021 Jan 22. doi: 10.1007/s12519-020-00401-0. Epub ahead of print. PMID: 33481179

Endnotes

Chapter 16

1. Goday PS, Huh SY, Silverman A, et al. Pediatric Feeding Disorder: Consensus Definition and Conceptual Framework. *J Pediatr Gastroenterol Nutr.* 2019. doi:10.1097/MPG.0000000000002188
2. Sharp WG, Berry RC, McCracken C, et al. Feeding problems and nutrient intake in children with autism spectrum disorders: A meta-analysis and comprehensive review of the literature. *J Autism Dev Disord.* 2013. doi:10.1007/s10803-013-1771-5
3. van der Horst K, Deming DM, Lesniasukas R, Carr BT, Reidy KC. Picky eating: Associations with child eating characteristics and food intake. *Appetite.* 2016. doi:10.1016/j.appet.2016.04.027
4. Brigham KS, Manzo LD, Eddy KT, Thomas JJ. Evaluation and Treatment of Avoidant/Restrictive Food Intake Disorder (ARFID) in Adolescents. *Curr Pediatr Rep.* 2018. doi:10.1007/s40124-018-0162-y
5. Zimmerman J, Fisher M. Avoidant/Restrictive Food Intake Disorder (ARFID). *Curr Probl Pediatr Adolesc Health Care.* 2017. doi:10.1016/j.cppeds.2017.02.005
6. Ledford JR, Gast DL. Feeding Problems in Children With Autism Spectrum Disorders: A Review. *Focus Autism Other Dev Disabl.* 2006. doi:10.1177/10883576060210030401
7. Sharp WG, Burrell TL, Jaquess DL. The Autism MEAL Plan: A parent-training curriculum to manage eating aversions and low intake among children with autism. *Autism.* 2014. doi:10.1177/1362361313489190
8. Silverman AH, Berlin KS, Linn C, Pederson J, Schiedermayer B, Barkmeier-Kraemer J. Psychometric Properties of the Infant and Child Feeding Questionnaire. *J Pediatr.* 2020. doi:10.1016/j.jpeds.2020.04.040

Endnotes

Chapter 17

1. Weiss R, Bremer AA, Lustig RH. What is metabolic syndrome, and why are children getting it? *Ann N Y Acad Sci*. 2013. doi:10.1111/nyas.12030
2. Tagi VM, Giannini C, Chiarelli F. Insulin resistance in children. *Front Endocrinol (Lausanne)*. 2019. doi:10.3389/fendo.2019.00342
3. Brown RJ, Yanovski JA. Estimation of insulin sensitivity in children: Methods, measures and controversies. *Pediatr Diabetes*. 2014. doi:10.1111/pedi.12146
4. Lentferink YE, Elst MAJ, Knibbe CAJ, Van Der Vorst MMJ. Predictors of Insulin Resistance in Children versus Adolescents with Obesity. *J Obes*. 2017. doi:10.1155/2017/3793868
5. Chiarelli F, Marcovecchio ML. Insulin resistance and obesity in childhood. In: *European Journal of Endocrinology*. ; 2008. doi:10.1530/EJE-08-0245
6. Wallace AS, Wang D, Shin JI, Selvin E. Screening and diagnosis of prediabetes and diabetes in us children and adolescents. *Pediatrics*. 2020. doi:10.1542/PEDS.2020-0265
7. Tabák AG, Herder C, Rathmann W, Brunner EJ, Kivimäki M. Prediabetes: A high-risk state for diabetes development. *Lancet*. 2012. doi:10.1016/S0140-6736(12)60283-9
8. Bremer AA, Mietus-Snyder M, Lustig RH. Toward a unifying hypothesis of metabolic syndrome. *Pediatrics*. 2012. doi:10.1542/peds.2011-2912
9. Nadeau KJ, Anderson BJ, Berg EG, et al. Youth-Onset Type 2 Diabetes Consensus Report : Current Status , Challenges , and Priorities. 2016;39(September):1635-1642. doi:10.2337/dc16-1066
10. Hannon TS, Arslanian SA. The changing face of diabetes in youth: Lessons learned from studies of type 2 diabetes. *Ann N Y Acad Sci*. 2015;1353(1):113-137. doi:10.1111/nyas.12939
11. Jensen ET, Dabelea D. Type 2 Diabetes in Youth: New Lessons from the SEARCH Study. *Curr Diab Rep*. 2018;18(6):1-7. doi:10.1007/s11892-018-0997-1
12. Lin J, Thompson TJ, Cheng YJ, et al. Projection of the future diabetes burden in the United States through 2060. *Popul Health Metr*. 2018. doi:10.1186/s12963-018-0166-4
13. Softic S, Cohen DE, Kahn CR. Role of Dietary Fructose and Hepatic De Novo Lipogenesis in Fatty Liver Disease. *Dig Dis Sci*. 2016. doi:10.1007/s10620-016-4054-0
14. Jensen T, Abdelmalek MF, Sullivan S, et al. Fructose and sugar: A major mediator of non-alcoholic fatty liver disease. *J Hepatol*. 2018. doi:10.1016/j.jhep.2018.01.019
15. Kitade H, Chen G, Ni Y, Ota T. Nonalcoholic fatty liver disease and insulin resistance: New insights and potential new treatments. *Nutrients*. 2017. doi:10.3390/nu9040387
16. Vos MB, Abrams SH, Barlow SE, et al. NASPGHAN Clinical Practice Guideline for the Diagnosis and Treatment of Nonalcoholic Fatty Liver Disease in Children: Recommendations from the Expert Committee on NAFLD (ECON) and the North American Society of Pediatric Gastroenterology, Hepatology and Nu. *J Pediatr Gastroenterol Nutr*. 2017. doi:10.1097/MPG.0000000000001482

17. Nobili V, Socha P. Pediatric Nonalcoholic Fatty Liver Disease: Current Thinking. *J Pediatr Gastroenterol Nutr.* 2018. doi:10.1097/MPG.0000000000001823
18. Christeson W, Taggart. D, Messner-Zidell S, et al. Too Fat to Fight - Retired Military Leaders Want Junk Food Out of America's Schools. *Mission Readiness.* 2010.
19. Gagnon M, Stephens MB. Obesity and national defense: Will america be too heavy to fight? *Mil Med.* 2015. doi:10.7205/MILMED-D-14-00328
20. Davis CD. The gut microbiome and its role in obesity. *Nutr Today.* 2016. doi:10.1097/NT.000000000000167
21. Turnbaugh PJ, Ley RE, Mahowald MA, Magrini V, Mardis ER, Gordon JI. An obesity-associated gut microbiome with increased capacity for energy harvest. *Nature.* 2006. doi:10.1038/nature05414
22. Turnbaugh PJ, Hamady M, Yatsunencko T, et al. A core gut microbiome in obese and lean twins. *Nature.* 2009. doi:10.1038/nature07540
23. Saad MJA, Santos A, Prada PO. Linking gut microbiota and inflammation to obesity and insulin resistance. *Physiology.* 2016. doi:10.1152/physiol.00041.2015
24. Borgeraas H, Johnson LK, Skattebu J, Hertel JK, Hjelmæsæth J. Effects of probiotics on body weight, body mass index, fat mass and fat percentage in subjects with overweight or obesity: a systematic review and meta-analysis of randomized controlled trials. *Obes Rev.* 2018. doi:10.1111/obr.12626
25. Wiciński M, Gębalski J, Gołębiewski J, Malinowski B. Probiotics for the treatment of overweight and obesity in humans—a review of clinical trials. *Microorganisms.* 2020. doi:10.3390/microorganisms8081148
26. Carreau A-M, Rahat H, Reyes Yg, Pyle L, Nadeau Kj, Cree-Green M. Late Reactive Hypoglycemia (RHG) as a Common Early Sign of Glycemic Dysfunction in Obese Adolescent Girls. *Diabetes.* 2018. doi:10.2337/db18-1361-p
27. Altuntas Y, Bilir M, Ucak S, Gundogdu S. Reactive hypoglycemia in lean young women with PCOS and correlations with insulin sensitivity and with beta cell function. *Eur J Obstet Gynecol Reprod Biol.* 2005. doi:10.1016/j.ejogrb.2004.07.038
28. Lv X, Fang K, Hao W, Han Y, Yang N, Yu Q. Identification of reactive hypoglycemia with different basic bmi and its causes by prolonged oral glucose tolerance test. *Diabetes, Metab Syndr Obes Targets Ther.* 2020. doi:10.2147/DMSO.S280084
29. Mongraw-Chaffin M, Beavers DP, McClain DA. Hypoglycemic symptoms in the absence of diabetes: Pilot evidence of clinical hypoglycemia in young women. *J Clin Transl Endocrinol.* 2019. doi:10.1016/j.jcte.2019.100202
30. Gangwisch JE, Hale L, Garcia L, et al. High glycemic index diet as a risk factor for depression: Analyses from the Women's Health Initiative. *Am J Clin Nutr.* 2015. doi:10.3945/ajcn.114.103846
31. Johnson RJ, Gomez-Pinilla F, Nagel M, et al. Cerebral Fructose Metabolism as a Potential Mechanism Driving Alzheimer's Disease. *Front Aging Neurosci.* 2020. doi:10.3389/fnagi.2020.560865
32. Lustig RH. Fructose: It's "alcohol without the buzz." *Adv Nutr.* 2013. doi:10.3945/an.112.002998
33. Mirschink P, Jang C, Arany Z, Krek W. Fructose metabolism, cardiometabolic risk, and the epidemic of coronary artery disease. *Eur Heart J.* 2018;39(26):2497-2505. doi:10.1093/eurheartj/ehx518

34. Johnson RJ, Sánchez-Lozada LG, Andrews P, Lanaspa MA. Perspective: A historical and scientific perspective of sugar and its relation with obesity and diabetes. *Adv Nutr.* 2017. doi:10.3945/an.116.014654
35. Vos MB, Kaar JL, Welsh JA, et al. Added sugars and cardiovascular disease risk in children: A scientific statement from the American Heart Association. *Circulation.* 2017. doi:10.1161/CIR.0000000000000439
36. Stanhope KL. Sugar consumption, metabolic disease and obesity: The state of the controversy. *Crit Rev Clin Lab Sci.* 2016. doi:10.3109/10408363.2015.1084990
37. Johnson RJ, Nakagawa T, Sanchez-Lozada LG, et al. Sugar, uric acid, and the etiology of diabetes and obesity. *Diabetes.* 2013. doi:10.2337/db12-1814
38. Aeberli I, Gerber PA, Hochuli M, et al. Low to moderate sugar-sweetened beverage consumption impairs glucose and lipid metabolism and promotes inflammation in healthy young men: A randomized controlled trial. *Am J Clin Nutr.* 2011. doi:10.3945/ajcn.111.013540
39. Lustig RH. Fructose: metabolic, hedonic, and societal parallels with ethanol. *J Am Diet Assoc.* 2010. doi:10.1016/j.jada.2010.06.008
40. Basciano H, Federico L, Adeli K. Fructose, insulin resistance, and metabolic dyslipidemia. *Nutr Metab.* 2005. doi:10.1186/1743-7075-2-5
41. Malik VS, Hu FB. Fructose and Cardiometabolic Health. *J Am Coll Cardiol.* 2015. doi:10.1016/j.jacc.2015.08.025
42. Segal MS, Gollub E, Johnson RJ. Is the fructose index more relevant with regards to cardiovascular disease than the glycemic index? *Eur J Nutr.* 2007. doi:10.1007/s00394-007-0680-9
43. Li JM, Yu R, Zhang LP, et al. Dietary fructose-induced gut dysbiosis promotes mouse hippocampal neuroinflammation: A benefit of short-chain fatty acids. *Microbiome.* 2019. doi:10.1186/s40168-019-0713-7
44. Lambertz J, Weiskirchen S, Landert S, Weiskirchen R. Fructose: A dietary sugar in crosstalk with microbiota contributing to the development and progression of non-alcoholic liver disease. *Front Immunol.* 2017. doi:10.3389/fimmu.2017.01159
45. Cho YE, Kim DK, Seo W, Gao B, Yoo SH, Song BJ. Fructose Promotes Leaky Gut, Endotoxemia, and Liver Fibrosis Through Ethanol-Inducible Cytochrome P450-2E1–Mediated Oxidative and Nitrate Stress. *Hepatology.* 2019. doi:10.1002/hep.30652
46. Jin R, Willment A, Patel SS, et al. Fructose Induced Endotoxemia in Pediatric Nonalcoholic Fatty Liver Disease. *Int J Hepatol.* 2014. doi:10.1155/2014/560620
47. Shen J, Obin MS, Zhao L. The gut microbiota, obesity and insulin resistance. *Mol Aspects Med.* 2013. doi:10.1016/j.mam.2012.11.001
48. Lowette K, Roosen L, Tack J, Vanden Berghe P. Effects of High-Fructose Diets on Central Appetite Signaling and Cognitive Function. *Front Nutr.* 2015. doi:10.3389/fnut.2015.00005
49. Lustig RH. Childhood obesity: Behavioral aberration or biochemical drive? Reinterpreting the First Law of Thermodynamics. *Nat Clin Pract Endocrinol Metab.* 2006. doi:10.1038/npcpendmet0220
50. Lustig RH. The “skinny” on childhood obesity: How our Western environment starves kids’ brains. *Pediatr Ann.* 2006. doi:10.3928/0090-4481-20061201-08

51. Vos MB, Kaar JL, Welsh JA, et al. Added sugars and cardiovascular disease risk in children: A scientific statement from the American Heart Association. *Circulation*. 2017.
doi:10.1161/CIR.0000000000000439

Endnotes

Chapter 18

1. Taylor R, Al-Mrabeh A, Zhyzhneuskaya S, et al. Remission of Human Type 2 Diabetes Requires Decrease in Liver and Pancreas Fat Content but Is Dependent upon Capacity for β Cell Recovery. *Cell Metab.* 2018. doi:10.1016/j.cmet.2018.07.003
2. Taylor R, Al-Mrabeh A, Sattar N. Understanding the mechanisms of reversal of type 2 diabetes. *Lancet Diabetes Endocrinol.* 2019. doi:10.1016/S2213-8587(19)30076-2
3. Hallberg SJ, Gershuni VM, Athinarayanan SJ. Reversing type 2 diabetes: A narrative review of the evidence. *Nutrients.* 2019. doi:10.3390/nu11040766
4. Malik VS, Hu FB. Fructose and Cardiometabolic Health What the Evidence from Sugar-Sweetened Beverages Tells Us. *J Am Coll Cardiol.* 2015. doi:10.1016/j.jacc.2015.08.025
5. Imamura F, O'Connor L, Ye Z, et al. Consumption of sugar sweetened beverages, artificially sweetened beverages, and fruit juice and incidence of type 2 diabetes: Systematic review, meta-analysis, and estimation of population attributable fraction. *Br J Sports Med.* 2016. doi:10.1136/bjsports-2016-h3576rep
6. Chen H, Wang J, Li Z, et al. Consumption of sugar-sweetened beverages has a dose-dependent effect on the risk of non-alcoholic fatty liver disease: An updated systematic review and dose-response meta-analysis. *Int J Environ Res Public Health.* 2019. doi:10.3390/ijerph16122192
7. Wang M, Yu M, Fang L, Hu RY. Association between sugar-sweetened beverages and type 2 diabetes: A meta-analysis. *J Diabetes Investig.* 2015. doi:10.1111/jdi.12309
8. Yoshida Y, Simoes EJ. Sugar-Sweetened Beverage, Obesity, and Type 2 Diabetes in Children and Adolescents: Policies, Taxation, and Programs. *Curr Diab Rep.* 2018. doi:10.1007/s11892-018-1004-6
9. Flynn JT, Kaelber DC, Baker-Smith CM, et al. Clinical practice guideline for screening and management of high blood pressure in children and adolescents. *Pediatrics.* 2017. doi:10.1542/peds.2017-1904
10. Buysschaert M, Medina J-L, Buysschaert B, Bergman M. Definitions (and Current Controversies) of Diabetes and Prediabetes. *Curr Diabetes Rev.* 2015. doi:10.2174/1573399811666150122150233
11. Van Der Aa MP, Fazeli Farsani S, Kromwijk LAJ, De Boer A, Knibbe CAJ, Van Der Vorst MMJ. How to screen obese children at risk for type 2 diabetes mellitus? *Clin Pediatr (Phila).* 2014. doi:10.1177/0009922813509480
12. Tagi VM, Giannini C, Chiarelli F. Insulin resistance in children. *Front Endocrinol (Lausanne).* 2019. doi:10.3389/fendo.2019.00342
13. Lentferink YE, Elst MAJ, Knibbe CAJ, Van Der Vorst MMJ. Predictors of Insulin Resistance in Children versus Adolescents with Obesity. *J Obes.* 2017. doi:10.1155/2017/3793868
14. Keskin M, Kurtoglu S, Kendirci M, Atabek ME, Yazici C. Homeostasis model assessment is more reliable than the fasting glucose/insulin ratio and quantitative insulin sensitivity check index for assessing insulin resistance among obese children and adolescents. *Pediatrics.* 2005. doi:10.1542/peds.2004-1921

15. Kurtoglu S, Hatipoglu N, Mazcoglu M, Kendirci M, Keskin M, Kondolot M. Insulin resistance in obese children and adolescents: HOMA-IR cut-off levels in the prepubertal and pubertal periods. *JCRPE J Clin Res Pediatr Endocrinol*. 2010. doi:10.4274/jcrpe.v2i3.100
16. Chiarelli F, Marcovecchio ML. Insulin resistance and obesity in childhood. In: *European Journal of Endocrinology*. ; 2008. doi:10.1530/EJE-08-0245
17. Jin R, Welsh JA, Le NA, et al. Dietary fructose reduction improves markers of cardiovascular disease risk in Hispanic-American adolescents with NAFLD. *Nutrients*. 2014. doi:10.3390/nu6083187
18. Welsh JA, Sharma A, Cunningham SA, Vos MB. Consumption of added sugars and indicators of cardiovascular disease risk among US adolescents. *Circulation*. 2011. doi:10.1161/CIRCULATIONAHA.110.972166
19. Vos MB, Kaar JL, Welsh JA, et al. Added sugars and cardiovascular disease risk in children: A scientific statement from the American Heart Association. *Circulation*. 2017. doi:10.1161/CIR.0000000000000439
20. Brown RJ, Yanovski JA. Estimation of insulin sensitivity in children: Methods, measures and controversies. *Pediatr Diabetes*. 2014. doi:10.1111/pedi.12146
21. Stumvoll M, Mitrakou A, Pimenta W, et al. Use of the oral glucose tolerance test to assess insulin release and insulin sensitivity. *Diabetes Care*. 2000. doi:10.2337/diacare.23.3.295
22. Metter EJ, Windham BG, Maggio M, et al. Glucose and insulin measurements from the oral glucose tolerance test and mortality prediction. *Diabetes Care*. 2008. doi:10.2337/dc07-2102
23. Vajravelu ME, Lee JM. Identifying Prediabetes and Type 2 Diabetes in Asymptomatic Youth: Should HbA1c Be Used as a Diagnostic Approach? *Curr Diab Rep*. 2018. doi:10.1007/s11892-018-1012-6
24. Kanbay M, Segal M, Afsar B, Kang DH, Rodriguez-Iturbe B, Johnson RJ. The role of uric acid in the pathogenesis of human cardiovascular disease. *Heart*. 2013. doi:10.1136/heartjnl-2012-302535
25. Kanbay M, Jensen T, Solak Y, et al. Uric acid in metabolic syndrome: From an innocent bystander to a central player. *Eur J Intern Med*. 2016. doi:10.1016/j.ejim.2015.11.026
26. Jensen T, Abdelmalek MF, Sullivan S, et al. Fructose and sugar: A major mediator of non-alcoholic fatty liver disease. *J Hepatol*. 2018. doi:10.1016/j.jhep.2018.01.019
27. Johnson RJ, Nakagawa T, Sanchez-Lozada LG, et al. Sugar, uric acid, and the etiology of diabetes and obesity. *Diabetes*. 2013. doi:10.2337/db12-1814
28. Wilkins JT, Li RC, Sniderman A, Chan C, Lloyd-Jones DM. Discordance between Apolipoprotein B and LDL-Cholesterol in Young Adults Predicts Coronary Artery Calcification the CARDIA Study. *J Am Coll Cardiol*. 2016;67(2):193-201. doi:10.1016/j.jacc.2015.10.055
29. Kovanen PT, Jauhiainen M. Coronary heart disease prediction: Apolipoprotein B shows its might again - But still in vain? *Eur J Prev Cardiol*. 2015;22(10):1317-1320. doi:10.1177/2047487315580892
30. Urbina EM, McCoy CE, Gao Z, et al. Lipoprotein particle number and size predict vascular structure and function better than traditional lipids in adolescents and young adults. *J Clin Lipidol*. 2017. doi:10.1016/j.jacl.2017.05.011
31. Mora S, Caulfield MP, Wohlgemuth J, et al. Atherogenic lipoprotein subfractions determined by ion mobility and first cardiovascular events after random allocation to high-intensity statin or placebo:

- The justification for the use of statins in prevention: An intervention trial evaluating rosuvasta. *Circulation*. 2015. doi:10.1161/CIRCULATIONAHA.115.016857
32. Perak AM, Ning H, Kit BK, et al. Trends in Levels of Lipids and Apolipoprotein B in US Youths Aged 6 to 19 Years, 1999-2016. *JAMA - J Am Med Assoc*. 2019. doi:10.1001/jama.2019.4984
 33. Shai I, Schwarzfuchs D, Henkin Y, et al. Weight Loss with a Low-Carbohydrate, Mediterranean, or Low-Fat Diet. *N Engl J Med*. 2008. doi:10.1056/nejmoa0708681
 34. Bazzano LA, Hu T, Reynolds K, et al. Effects of low-carbohydrate and low-fat diets: A randomized trial. *Ann Intern Med*. 2014;161(5):309-318. doi:10.7326/M14-0180
 35. Hu T, Yao L, Reynolds K, et al. The effects of a low-carbohydrate diet vs. a low-fat diet on novel cardiovascular risk factors: A randomized controlled trial. *Nutrients*. 2015. doi:10.3390/nu7095377
 36. Sackner-Bernstein J, Kanter D, Kaul S. Dietary intervention for overweight and obese adults: comparison of low- carbohydrate and low-fat diets. a meta- analysis. *PLoS One*. 2015. doi:10.1371/journal.pone.0139817
 37. Hession M, Rolland C, Kulkarni U, Wise A, Broom J. Systematic review of randomized controlled trials of low-carbohydrate vs. low-fat/low-calorie diets in the management of obesity and its comorbidities. *Obes Rev*. 2009. doi:10.1111/j.1467-789X.2008.00518.x
 38. Gardner CD, Kiazand A, Alhassan S, et al. Comparison of the Atkins, Zone, Ornish, and LEARN diets for change in weight and related risk factors among overweight premenopausal women: The A to Z weight loss study: A randomized trial. *J Am Med Assoc*. 2007. doi:10.1001/jama.297.9.969
 39. Estruch R, Ros E, Salas-Salvadó J, et al. Primary Prevention of Cardiovascular Disease with a Mediterranean Diet Supplemented with Extra-Virgin Olive Oil or Nuts. *N Engl J Med*. 2018. doi:10.1056/nejmoa1800389
 40. Siri-Tarino PW, Sun Q, Hu FB, Krauss RM. Meta-analysis of prospective cohort studies evaluating the association of saturated fat with cardiovascular disease 1-5. *Am J Clin Nutr*. 2010;91:535-581. doi:10.3945/ajcn.2009.27725
 41. Kearns CE, Schmidt LA, Glantz SA. Sugar industry and coronary heart disease research: A historical analysis of internal industry documents. *JAMA Intern Med*. 2016. doi:10.1001/jamainternmed.2016.5394
 42. Lesser LI, Ebbeling CB, Goozner M, Wypij D, Ludwig DS. Relationship between funding source and conclusion among nutrition-related scientific articles. *PLoS Med*. 2007. doi:10.1371/journal.pmed.0040005
 43. Mozaffarian D, Ludwig DS. The 2015 US dietary guidelines: Lifting the ban on total dietary fat. *JAMA - J Am Med Assoc*. 2015;313(24):2421-2422. doi:10.1001/jama.2015.5941
 44. Lustig RH, Mulligan K, Noworolski SM, et al. Isocaloric fructose restriction and metabolic improvement in children with obesity and metabolic syndrome. *Obesity*. 2016. doi:10.1002/oby.21371
 45. Demasi M, Lustig RH, Malhotra A. The cholesterol and calorie hypotheses are both dead - it is time to focus on the real culprit: Insulin resistance. *Clin Pharm*. 2017. doi:10.1211/CP.2017.20203046
 46. Lustig RH. Childhood obesity: Behavioral aberration or biochemical drive? Reinterpreting the First Law of Thermodynamics. *Nat Clin Pract Endocrinol Metab*. 2006. doi:10.1038/ncpendmet0220

47. Lustig RH. The “skinny” on childhood obesity: How our Western environment starves kids’ brains. *Pediatr Ann.* 2006. doi:10.3928/0090-4481-20061201-08
48. Ludwig DS, Ebbeling CB. The carbohydrate-insulin model of obesity: Beyond “calories in, calories out.” *JAMA Intern Med.* 2018. doi:10.1001/jamainternmed.2018.2933
49. Ebbeling CB, Swain JF, Feldman HA, et al. Effects of dietary composition on energy expenditure during weight-loss maintenance. *JAMA - J Am Med Assoc.* 2012. doi:10.1001/jama.2012.6607
50. Malhotra A, Noakes T, Phinney S. It is time to bust the myth of physical inactivity and obesity: You cannot outrun a bad diet. *Br J Sports Med.* 2015;49(15):967-968. doi:10.1136/bjsports-2015-094911
51. Araújo J, Cai J, Stevens J. Prevalence of Optimal Metabolic Health in American Adults: National Health and Nutrition Examination Survey 2009-2016. *Metab Syndr Relat Disord.* 2019. doi:10.1089/met.2018.0105
52. Thomas EL, Parkinson JR, Frost GS, et al. The missing risk: MRI and MRS phenotyping of abdominal adiposity and ectopic fat. *Obesity.* 2012. doi:10.1038/oby.2011.142
53. Zdrojewicz Z, Popowicz E, Szyca M, Michalik T, Śmieszniak B. TOFI phenotype - Its effect on the occurrence of diabetes. *Pediatr Endocrinol Diabetes Metab.* 2017. doi:10.18544/PEDM-23.02.0079
54. Malik VS, Hu FB. Fructose and Cardiometabolic Health. *J Am Coll Cardiol.* 2015. doi:10.1016/j.jacc.2015.08.025
55. Softic S, Cohen DE, Kahn CR. Role of Dietary Fructose and Hepatic De Novo Lipogenesis in Fatty Liver Disease. *Dig Dis Sci.* 2016. doi:10.1007/s10620-016-4054-0
56. Singh GM, Micha R, Khatibzadeh S, Lim S, Ezzati M, Mozaffarian D. Estimated global, regional, and national disease burdens related to sugar-sweetened beverage consumption in 2010. *Circulation.* 2015. doi:10.1161/CIRCULATIONAHA.114.010636
57. Imamura F, O’Connor L, Ye Z, et al. Consumption of sugar sweetened beverages, artificially sweetened beverages, and fruit juice and incidence of type 2 diabetes: Systematic review, meta-analysis, and estimation of population attributable fraction. *BMJ.* 2015. doi:10.1136/bmj.h3576
58. Stanhope KL, Bremer AA, Medici V, et al. Consumption of fructose and high fructose corn syrup increase postprandial triglycerides, LDL-cholesterol, and apolipoprotein-B in young men and women. *J Clin Endocrinol Metab.* 2011. doi:10.1210/jc.2011-1251
59. Aeberli I, Gerber PA, Hochuli M, et al. Low to moderate sugar-sweetened beverage consumption impairs glucose and lipid metabolism and promotes inflammation in healthy young men: A randomized controlled trial. *Am J Clin Nutr.* 2011. doi:10.3945/ajcn.111.013540
60. Stanhope KL, Medici V, Bremer AA, et al. A dose-response study of consuming high-fructose corn syrup-sweetened beverages on lipid/lipoprotein risk factors for cardiovascular disease in young adults. *Am J Clin Nutr.* 2015. doi:10.3945/ajcn.114.100461
61. Scheithauer TPM, Rampanelli E, Nieuwdorp M, et al. Gut Microbiota as a Trigger for Metabolic Inflammation in Obesity and Type 2 Diabetes. *Front Immunol.* 2020. doi:10.3389/fimmu.2020.571731
62. Wen L, Duffy A. Factors influencing the gut microbiota, inflammation, and type 2 diabetes. *J Nutr.* 2017. doi:10.3945/jn.116.240754

63. Leidy HJ, Clifton PM, Astrup A, et al. The role of protein in weight loss and maintenance. *Am J Clin Nutr.* 2015;101(6):1320S-1329S. doi:10.3945/ajcn.114.084038
64. Bellissimo N, Fansabedian T, Wong VCH, et al. Effect of increasing the dietary protein content of breakfast on subjective appetite, short-term food intake and diet-induced thermogenesis in children. *Nutrients.* 2020;12(10):1-13. doi:10.3390/nu12103025
65. Neacsu M, Fyfe C, Horgan G, Johnstone AM. Appetite control and biomarkers of satiety with Vegetarian (soy) and meat-based high-protein diets for weight loss in obese men: A randomized crossover trial. *Am J Clin Nutr.* 2014;100(2):548-558. doi:10.3945/ajcn.113.077503
66. Oliveira CLP, Boulé NG, Berg A, et al. Consumption of a high-protein meal replacement leads to higher fat oxidation, suppression of hunger, and improved metabolic profile after an exercise session. *Nutrients.* 2021;13(1):1-18. doi:10.3390/nu13010155
67. Egusquiza RJ, Blumberg B. Environmental obesogens and their impact on susceptibility to obesity: New mechanisms and chemicals. *Endocrinol (United States).* 2020. doi:10.1210/endo/bqaa024
68. Heindel JJ, Blumberg B. Environmental obesogens: Mechanisms and controversies. *Annu Rev Pharmacol Toxicol.* 2019. doi:10.1146/annurev-pharmtox-010818-021304
69. Heindel JJ, Newbold R, Schug TT. Endocrine disruptors and obesity. *Nat Rev Endocrinol.* 2015. doi:10.1038/nrendo.2015.163
70. Buxton OM, Pavlova M, Reid EW, Wang W, Simonson DC, Adler GK. Sleep restriction for 1 week reduces insulin sensitivity in healthy men. *Diabetes.* 2010. doi:10.2337/db09-0699
71. Mesarwi O, Polak J, Jun J, Polotsky VY. Sleep Disorders and the Development of Insulin Resistance and Obesity. *Endocrinol Metab Clin North Am.* 2013. doi:10.1016/j.ecl.2013.05.001
72. Leproult R, Holmbäck U, Van Cauter E. Circadian misalignment augments markers of insulin resistance and inflammation, independently of sleep loss. *Diabetes.* 2014. doi:10.2337/db13-1546
73. Adam TC, Hasson RE, Ventura EE, et al. Cortisol is negatively associated with insulin sensitivity in overweight Latino youth. *J Clin Endocrinol Metab.* 2010. doi:10.1210/jc.2010-0322
74. Çelik N, Andiran N, Yilmaz AE. The relationship between serum magnesium levels with childhood obesity and insulin resistance: A review of the literature. *J Pediatr Endocrinol Metab.* 2011. doi:10.1515/JPEM.2011.255
75. Huerta MG, Roemmich JN, Kington ML, et al. Magnesium deficiency is associated with insulin resistance in obese children. *Diabetes Care.* 2005. doi:10.2337/diacare.28.5.1175
76. Morais JBS, Severo JS, de Alencar GRR, et al. Effect of magnesium supplementation on insulin resistance in humans: A systematic review. *Nutrition.* 2017. doi:10.1016/j.nut.2017.01.009
77. Kostov K. Effects of magnesium deficiency on mechanisms of insulin resistance in type 2 diabetes: Focusing on the processes of insulin secretion and signaling. *Int J Mol Sci.* 2019. doi:10.3390/ijms20061351
78. Fiorentini D, Cappadone C, Farruggia G, Prata C. Magnesium: Biochemistry, nutrition, detection, and social impact of diseases linked to its deficiency. *Nutrients.* 2021. doi:10.3390/nu13041136
79. Veronese N, Watutantrige-Fernando S, Luchini C, et al. Effect of magnesium supplementation on glucose metabolism in people with or at risk of diabetes: A systematic review and meta-analysis of double-blind randomized controlled trials. *Eur J Clin Nutr.* 2016. doi:10.1038/ejcn.2016.154

80. Szymczak-Pajor I, Śliwińska A. Analysis of association between vitamin d deficiency and insulin resistance. *Nutrients*. 2019. doi:10.3390/nu11040794
81. Szymczak-Pajor I, Drzewoski J, Śliwińska A. The molecular mechanisms by which vitamin d prevents insulin resistance and associated disorders. *Int J Mol Sci*. 2020. doi:10.3390/ijms21186644
82. Ehrampoush E, Mirzay Razzaz J, arjmand H, et al. The association of vitamin D levels and insulin resistance. *Clin Nutr ESPEN*. 2021. doi:10.1016/j.clnesp.2021.01.012
83. Sacerdote A, Dave P, Lokshin V, Bahtiyar G. Type 2 Diabetes Mellitus, Insulin Resistance, and Vitamin D. *Curr Diab Rep*. 2019. doi:10.1007/s11892-019-1201-y
84. Luc K, Schramm-Luc A, Guzik TJ, Mikolajczyk TP. Oxidative stress and inflammatory markers in prediabetes and diabetes. *J Physiol Pharmacol*. 2019. doi:10.26402/jpp.2019.6.01
85. Super Power of Antioxidant in Oxidative Stress and Diabetes Mellitus. *J Diabetes Endocrinol Res*. 2020. doi:10.47485/2693-2458/1009
86. Tangvarasittichai S. Oxidative stress, insulin resistance, dyslipidemia and type 2 diabetes mellitus. *World J Diabetes*. 2015. doi:10.4239/wjd.v6.i3.456
87. Meigs JB, Larson MG, Fox CS, Keaney JF, Vasan RS, Benjamin EJ. Association of oxidative stress, insulin resistance, and diabetes risk phenotypes: The Framingham Offspring Study. *Diabetes Care*. 2007. doi:10.2337/dc07-0817
88. Hyder M, Raja D, Varma V, Ponnusankar S. Oxidative stress during insulin resistance in prediabetes: A review on role of antioxidants. *Int J Res Pharm Sci*. 2020. doi:10.26452/ijrps.v11i3.2503

Endnotes

Chapter 19

1. CDC. <https://www.cdc.gov/childrensmentalhealth/data.html#ref>.
2. Verlaet AAJ, Maasackers CM, Id HFJS. Rationale for Dietary Antioxidant Treatment of ADHD. :1-20. doi:10.3390/nu10040405
3. Grandjean P, Landrigan PJ. Neurobehavioural effects of developmental toxicity. *Lancet Neurol*. 2014. doi:10.1016/S1474-4422(13)70278-3
4. Wu N, Chen Y, Yang J, Li F, Lundy TJ. Childhood Obesity and Academic Performance : The Role of Working Memory. 2017;8(April):1-7. doi:10.3389/fpsyg.2017.00611
5. Cortese S, Tessari L. Attention-Deficit/Hyperactivity Disorder (ADHD) and Obesity: Update 2016. *Curr Psychiatry Rep*. 2017. doi:10.1007/s11920-017-0754-1
6. Cortese S, Moreira-Maia CR, St Fleur D, Morcillo-Peñalver C, Rohde LA, Faraone S V. Association between ADHD and obesity: A systematic review and meta-analysis. *Am J Psychiatry*. 2016. doi:10.1176/appi.ajp.2015.15020266
7. Villagomez A, Ramtekkar U. Iron, Magnesium, Vitamin D, and Zinc Deficiencies in Children Presenting with Symptoms of Attention-Deficit/Hyperactivity Disorder. *Children*. 2014;1(3):261-279. doi:10.3390/children1030261
8. Millichap JG, Yee MM. The diet factor in attention-deficit/hyperactivity disorder. *Pediatrics*. 2012. doi:10.1542/peds.2011-2199
9. Wang L-J, Yu Y-H, Fu M-L, et al. Dietary Profiles, Nutritional Biochemistry Status, and Attention-Deficit/Hyperactivity Disorder: Path Analysis for a Case-Control Study. *J Clin Med*. 2019. doi:10.3390/jcm8050709
10. Woo HD, Kim DW, Hong YS, et al. Dietary patterns in children with attention deficit/hyperactivity disorder (ADHD). *Nutrients*. 2014. doi:10.3390/nu6041539
11. Bowling A, Davison K, Haneuse S, Beardslee W, Miller DP. ADHD Medication, Dietary Patterns, Physical Activity, and BMI in Children: A Longitudinal Analysis of the ECLS-K Study. *Obesity*. 2017. doi:10.1002/oby.21949
12. Villagomez A, Ramtekkar U. Iron, Magnesium, Vitamin D, and Zinc Deficiencies in Children Presenting with Symptoms of Attention-Deficit/Hyperactivity Disorder. *Children*. 2014. doi:10.3390/children1030261
13. Kiddie JY, Weiss MD, Kitts DD, Levy-Milne R, Wasdell MB. Nutritional Status of Children with Attention Deficit Hyperactivity Disorder: A Pilot Study. *Int J Pediatr*. 2010. doi:10.1155/2010/767318
14. Kozielec T, Starobrat-Hermelin B. Assessment of magnesium levels in children with attention deficit hyperactivity disorder (ADHD). *Magnes Res*. 1997.
15. Zhou F, Wu F, Zou S, Chen Y, Feng C, Fan G. Dietary , Nutrient Patterns and Blood Essential Elements in Chinese Children with ADHD. 2016:1-14. doi:10.3390/nu8060352
16. Lachance L, McKenzie K, Taylor VH, Vigod SN. Omega-6 to omega-3 fatty acid ratio in patients

- with ADHD: A meta-analysis. *J Can Acad Child Adolesc Psychiatry*. 2016.
17. Fuentes-Albero M, Martínez-Martínez MI, Cauli O. Omega-3 long-chain polyunsaturated fatty acids intake in children with attention deficit and hyperactivity disorder. *Brain Sci*. 2019. doi:10.3390/brainsci9050120
 18. Parletta N, Niyonsenga T, Duff J. Omega-3 and omega-6 polyunsaturated fatty acid levels and correlations with symptoms in children with attention deficit hyperactivity disorder, autistic spectrum disorder and typically developing controls. *PLoS One*. 2016. doi:10.1371/journal.pone.0156432
 19. Hawkey E, Nigg JT. Omega-3 fatty acid and ADHD: Blood level analysis and meta-analytic extension of supplementation trials. *Clin Psychol Rev*. 2014. doi:10.1016/j.cpr.2014.05.005
 20. Hibbeln CJR, Spiller P, Brenna JT, et al. Relationships between seafood consumption during pregnancy and childhood and neurocognitive development: Two systematic reviews. *Prostaglandins Leukot Essent Fat Acids*. 2019. doi:10.1016/j.plefa.2019.10.002
 21. Bloch MH, Qawasmi A. Omega-3 fatty acid supplementation for the treatment of children with attention-deficit/hyperactivity disorder symptomatology: Systematic review and meta-analysis. *J Am Acad Child Adolesc Psychiatry*. 2011. doi:10.1016/j.jaac.2011.06.008
 22. Chang JPC, Su KP, Mondelli V, Pariante CM. Omega-3 Polyunsaturated Fatty Acids in Youths with Attention Deficit Hyperactivity Disorder: A Systematic Review and Meta-Analysis of Clinical Trials and Biological Studies. *Neuropsychopharmacology*. 2018. doi:10.1038/npp.2017.160
 23. Derbyshire E. Do Omega-3/6 Fatty Acids Have a Therapeutic Role in Children and Young People with ADHD? *J Lipids*. 2017. doi:10.1155/2017/6285218
 24. Sinn N, Bryan J. Effect of supplementation with polyunsaturated fatty acids and micronutrients on learning and behavior problems associated with child ADHD. *J Dev Behav Pediatr*. 2007. doi:10.1097/01.DBP.0000267558.88457.a5
 25. Königs A, Kiliaan AJ. Critical appraisal of omega-3 fatty acids in attention-deficit/hyperactivity disorder treatment. *Neuropsychiatr Dis Treat*. 2016. doi:10.2147/NDT.S68652
 26. Wiedeman AM, Barr SI, Green TJ, Xu Z, Innis SM, Kitts DD. Dietary choline intake: Current state of knowledge across the life cycle. *Nutrients*. 2018. doi:10.3390/nu10101513
 27. Zeisel SH, Da Costa KA. Choline: An essential nutrient for public health. *Nutr Rev*. 2009;67(11):615-623. doi:10.1111/j.1753-4887.2009.00246.x
 28. Prelicz CR, Lotrean LM. Choline intake and its food sources in the diet of Romanian kindergarten children. *Nutrients*. 2017. doi:10.3390/nu9080896
 29. Altun H, Sahin N, Kurutaú EB, Güngör O. Homocysteine, pyridoxine, folate and vitamin b12 levels in children with attention deficit hyperactivity disorder. *Psychiatr Danub*. 2018. doi:10.24869/psyd.2018.310
 30. Saha T, Chatterjee M, Verma D, et al. Genetic variants of the folate metabolic system and mild hyperhomocysteinemia may affect ADHD associated behavioral problems. *Prog Neuro-Psychopharmacology Biol Psychiatry*. 2018. doi:10.1016/j.pnpbp.2018.01.016
 31. Papakostas GI, Shelton RC, Zajecka JM, et al. L-methylfolate as adjunctive therapy for SSRI-resistant major depression: Results of two randomized, double-blind, parallel-sequential trials. *Am J*

- Psychiatry*. 2012. doi:10.1176/appi.ajp.2012.11071114
32. Dartois LL, Stutzman DL, Morrow M. L-methylfolate Augmentation to Antidepressants for Adolescents with Treatment-Resistant Depression: A Case Series. *J Child Adolesc Psychopharmacol*. 2019. doi:10.1089/cap.2019.0006
 33. Black MM. Effects of vitamin B12 and folate deficiency on brain development in children. In: *Food and Nutrition Bulletin*. ; 2008. doi:10.1177/15648265080292s117
 34. Dolina S, Margalit D, Malitsky S, Rabinkov A. Attention-deficit hyperactivity disorder (ADHD) as a pyridoxine-dependent condition: Urinary diagnostic biomarkers. *Med Hypotheses*. 2014. doi:10.1016/j.mehy.2013.11.018
 35. Di Miceli M, Gronier B. Pharmacology, Systematic Review and Recent Clinical Trials of Metadoxine. *Rev Recent Clin Trials*. 2018. doi:10.2174/1574887113666180227100217
 36. Manor I, Rubin J, Daniely Y, Adler LA. Attention benefits after a single dose of metadoxine extended release in adults with predominantly inattentive ADHD. *Postgrad Med*. 2014. doi:10.3810/pgm.2014.09.2795
 37. Manor I, Ben-Hayun R, Aharon-Peretz J, et al. A randomized, double-blind, placebo-controlled, multicenter study evaluating the efficacy, safety, and tolerability of extended-release metadoxine in adults with attention-deficit/hyperactivity disorder. *J Clin Psychiatry*. 2012. doi:10.4088/JCP.12m07767
 38. Choi S, DiSilvio B, Fernstrom MH, Fernstrom JD. Effect of chronic protein ingestion on tyrosine and tryptophan levels and catecholamine and serotonin synthesis in rat brain. *Nutr Neurosci*. 2011. doi:10.1179/1476830511Y.0000000019
 39. Choi SJ, DiSilvio B, Fernstrom MH, Fernstrom JD. Meal ingestion, amino acids and brain neurotransmitters: Effects of dietary protein source on serotonin and catecholamine synthesis rates. *Physiol Behav*. 2009. doi:10.1016/j.physbeh.2009.05.004
 40. Fernstrom JD, Langham KA, Marcelino LM, Irvine ZLE, Fernstrom MH, Kaye WH. The ingestion of different dietary proteins by humans induces large changes in the plasma tryptophan ratio, a predictor of brain tryptophan uptake and serotonin synthesis. *Clin Nutr*. 2013. doi:10.1016/j.clnu.2012.11.027
 41. Raine L, Cohen N, Kramer A, Hillman C, Khan N. Carbohydrates differentially influence children's efficiency during cognitive control tasks. *FASEB journal Conf Exp Biol 2016, EB San diego, CA united states Conf start 20160402 Conf end 20160406 Conf Publ*. 2016.
 42. Edefonti V, Rosato V, Parpinel M, et al. The effect of breakfast composition and energy contribution on cognitive and academic performance: A systematic review. *Am J Clin Nutr*. 2014. doi:10.3945/ajcn.114.083683
 43. Pivina L, Semenova Y, Doşa MD, Dauletyarova M, Bjørklund G. Iron Deficiency, Cognitive Functions, and Neurobehavioral Disorders in Children. *J Mol Neurosci*. 2019. doi:10.1007/s12031-019-01276-1
 44. Konofal E, Lecendreux M, Deron J, et al. Effects of Iron Supplementation on Attention Deficit Hyperactivity Disorder in Children. *Pediatr Neurol*. 2008. doi:10.1016/j.pediatrneurol.2007.08.014
 45. Cortese S, Angriman M. Attention-deficit/hyperactivity disorder, iron deficiency, and obesity: Is there a link? *Postgrad Med*. 2014. doi:10.3810/pgm.2014.07.2793

46. Cortese S, Angriman M, Lecendreux M, Konofal E. Iron and attention deficit/hyperactivity disorder: What is the empirical evidence so far? A systematic review of the literature. *Expert Rev Neurother.* 2012. doi:10.1586/ern.12.116
47. Pawlak R, Bell K. Iron Status of Vegetarian Children: A Review of Literature. *Ann Nutr Metab.* 2017. doi:10.1159/000466706
48. Kiddie JY, Weiss MD, Kitts DD, Levy-milne R, Wasdell MB. Nutritional Status of Children with Attention Deficit Hyperactivity Disorder : A Pilot Study. 2010;2010. doi:10.1155/2010/767318
49. Akhondzadeh S, Mohammadi M, Khademi M. Zinc sulfate as an adjunct to methylphenidate for the treatment of attention deficit hyperactivity disorder in children : A double blind. 2004;6:1-6.
50. Arnold LE, Disilvestro RA, Bozzolo D, et al. Zinc for attention-deficit/hyperactivity disorder: Placebo-controlled double-blind pilot trial alone and combined with amphetamine. *J Child Adolesc Psychopharmacol.* 2011. doi:10.1089/cap.2010.0073
51. Arnold LE. 78.1 Complementary and Integrative Medicine in Attention-Deficit/Hyperactivity Disorder. *J Am Acad Child Adolesc Psychiatry.* 2017. doi:10.1016/j.jaac.2017.07.456
52. Bilici M, Yildirim F, Kandil S, et al. Double-blind, placebo-controlled study of zinc sulfate in the treatment of attention deficit hyperactivity disorder. *Prog Neuro-Psychopharmacology Biol Psychiatry.* 2004. doi:10.1016/j.pnpbp.2003.09.034
53. Rosanoff A, Weaver CM, Rude RK. Suboptimal magnesium status in the United States: Are the health consequences underestimated? *Nutr Rev.* 2012. doi:10.1111/j.1753-4887.2011.00465.x
54. El Baza F, AlShahawi HA, Zahra S, AbdelHakim RA. Magnesium supplementation in children with attention deficit hyperactivity disorder. *Egypt J Med Hum Genet.* 2016. doi:10.1016/j.ejmhg.2015.05.008
55. Ghanizadeh A. A systematic review of magnesium therapy for treating attention deficit hyperactivity disorder. *Arch Iran Med.* 2013.
56. Huss M, Völp A, Stauss-Grabo M. Supplementation of polyunsaturated fatty acids, magnesium and zinc in children seeking medical advice for attention-deficit/hyperactivity problems - An observational cohort study. *Lipids Health Dis.* 2010. doi:10.1186/1476-511X-9-105
57. Mousain-Bosc M, Roche M, Polge A, Pradal-Prat D, Rapin J, Bali JP. Improvement of neurobehavioral disorders in children supplemented with magnesium-vitamin B6: II. Pervasive developmental disorder-autism. *Magnes Res.* 2006.
58. Weydert J. Vitamin D in Children's Health. *Children.* 2014. doi:10.3390/children1020208
59. Elshorbagy HH, Barseem NF, Abdelghani WE, et al. Impact of Vitamin D Supplementation on Attention-Deficit Hyperactivity Disorder in Children. *Ann Pharmacother.* 2018. doi:10.1177/1060028018759471
60. Gan J, Galer P, Ma D, Chen C, Xiong T. The Effect of Vitamin D Supplementation on Attention-Deficit/Hyperactivity Disorder: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. *J Child Adolesc Psychopharmacol.* 2019. doi:10.1089/cap.2019.0059
61. Dehbokri N, Noorazar G, Ghaffari A, Mehdizadeh G, Sarbakhsh P, Ghaffary S. Effect of vitamin D treatment in children with attention-deficit hyperactivity disorder. *World J Pediatr.* 2019.

- doi:10.1007/s12519-018-0209-8
62. Rucklidge JJ, Johnstone J, Kaplan BJ. Nutrient supplementation approaches in the treatment of ADHD. *Expert Rev Neurother*. 2009. doi:10.1586/ern.09.7
 63. Rucklidge JJ, Frampton CM, Gorman B, Boggis A. Vitamin-mineral treatment of attention-deficit hyperactivity disorder in adults: Double-blind randomised placebo-controlled trial. *Br J Psychiatry*. 2014. doi:10.1192/bjp.bp.113.132126
 64. Popper CW. Single-Micronutrient and Broad-Spectrum Micronutrient Approaches for Treating Mood Disorders in Youth and Adults. *Child Adolesc Psychiatr Clin N Am*. 2014. doi:10.1016/j.chc.2014.04.001
 65. Rucklidge J, Johnstone J, Harrison R, Boggis A. Micronutrients reduce stress and anxiety in adults with Attention-Deficit/Hyperactivity Disorder following a 7.1 earthquake. *Psychiatry Res*. 2011. doi:10.1016/j.psychres.2011.06.016
 66. Darling KA, Eggleston MJF, Retallick-Brown H, Rucklidge JJ. Mineral-Vitamin Treatment Associated with Remission in Attention-Deficit/Hyperactivity Disorder Symptoms and Related Problems: 1-Year Naturalistic Outcomes of a 10-Week Randomized Placebo-Controlled Trial. *J Child Adolesc Psychopharmacol*. 2019. doi:10.1089/cap.2019.0036
 67. Hertz-Picciotto I, Sass JB, Engel S, et al. Organophosphate exposures during pregnancy and child neurodevelopment: Recommendations for essential policy reforms. *PLoS Med*. 2018;15(10):1-15. doi:10.1371/journal.pmed.1002671
 68. Roberts JR, Karr CJ, Paulson JA, et al. Pesticide exposure in children. *Pediatrics*. 2012. doi:10.1542/peds.2012-2757
 69. Wagner-Schuman M, Richardson JR, Auinger P, et al. Association of pyrethroid pesticide exposure with attention-deficit/hyperactivity disorder in a nationally representative sample of U.S. children. *Environ Heal*. 2015. doi:10.1186/s12940-015-0030-y
 70. Bouchard MF, Bellinger DC, Wright RO, Weisskopf MG. Attention-deficit/hyperactivity disorder and urinary metabolites of organophosphate pesticides. *Pediatrics*. 2010. doi:10.1542/peds.2009-3058
 71. Lu C, Toepel K, Irish R, Fenske RA, Barr DB, Bravo R. Organic diets significantly lower children's dietary exposure to organophosphorus pesticides. *Environ Health Perspect*. 2006. doi:10.1289/ehp.8418
 72. Ye BS, Leung AOW, Wong MH. The association of environmental toxicants and autism spectrum disorders in children. *Environ Pollut*. 2017. doi:10.1016/j.envpol.2017.04.039
 73. Mallozzi M, Bordi G, Garo C, Caserta D. The effect of maternal exposure to endocrine disrupting chemicals on fetal and neonatal development: A review on the major concerns. *Birth Defects Res Part C - Embryo Today Rev*. 2016. doi:10.1002/bdrc.21137
 74. Rochester JR, Bolden AL, Kwiatkowski CF. Prenatal exposure to bisphenol A and hyperactivity in children: a systematic review and meta-analysis. *Environ Int*. 2018. doi:10.1016/j.envint.2017.12.028
 75. Radke EG, Braun JM, Nachman RM, Cooper GS. Phthalate exposure and neurodevelopment: A systematic review and meta-analysis of human epidemiological evidence. *Environ Int*. 2020;137. doi:10.1016/j.envint.2019.105408

76. Braun JM. Early-life exposure to EDCs: Role in childhood obesity and neurodevelopment. *Nat Rev Endocrinol*. 2017. doi:10.1038/nrendo.2016.186
77. Ejaredar M, Nyanza EC, Ten Eycke K, Dewey D. Phthalate exposure and childrens neurodevelopment: A systematic review. *Environ Res*. 2015;142:51-60. doi:10.1016/j.envres.2015.06.014
78. Bateman B, Warner JO, Hutchinson E, et al. The effects of a double blind, placebo controlled, artificial food colourings and benzoate preservative challenge on hyperactivity in a general population sample of preschool children. *Arch Dis Child*. 2004. doi:10.1136/adc.2003.031435
79. McCann D, Barrett A, Cooper A, et al. Food additives and hyperactive behaviour in 3-year-old and 8/9-year-old children in the community: a randomised, double-blinded, placebo-controlled trial. *Lancet*. 2007. doi:10.1016/S0140-6736(07)61306-3
80. Weiss B. Synthetic food colors and neurobehavioral hazards: The view from environmental health research. *Environ Health Perspect*. 2012;120(1):1-5. doi:10.1289/ehp.1103827
81. Stevens LJ, Burgess JR, Stochelski MA, Kuczek T. Amounts of artificial food dyes and added sugars in foods and sweets commonly consumed by children. *Clin Pediatr (Phila)*. 2015;54(4):309-321. doi:10.1177/0009922814530803
82. Stevens LJ, Kuczek T, Burgess JR, Stochelski MA, Arnold LE, Galland L. Mechanisms of behavioral, atopic, and other reactions to artificial food colors in children. *Nutr Rev*. 2013;71(5):268-281. doi:10.1111/nure.12023
83. Adolphus K, Lawton CL, Dye L. The effects of breakfast on behaviour and academic performance in children and adolescents. *Front Hum Neurosci*. 2013. doi:10.3389/fnhum.2013.00425
84. Adolphus K, Lawton CL, Dye L. Associations Between Habitual School-Day Breakfast Consumption Frequency and Academic Performance in British Adolescents. *Front Public Heal*. 2019. doi:10.3389/fpubh.2019.00283
85. Hoyland A, Dye L, Lawton CL. A systematic review of the effect of breakfast on the cognitive performance of children and adolescents. *Nutr Res Rev*. 2009. doi:10.1017/S0954422409990175
86. Ludwig DS, Majzoub JA, Al-Zahrani A, Dallal GE, Blanco I, Roberts SB. High glycemic index foods, overeating, and obesity. *Pediatrics*. 1999. doi:10.1542/peds.103.3.e26
87. Lennerz BS, Alsop DC, Holsen LM, et al. Effects of dietary glycemic index on brain areas associated with addiction: A randomized controlled feeding study. *Am J Clin Nutr*. 2013.
88. Shimy KJ, Feldman HA, Klein GL, Bielak L, Ebbeling CB, Ludwig DS. Effects of Dietary Carbohydrate Content on Circulating Metabolic Fuel Availability in the Postprandial State. *J Endocr Soc*. 2020. doi:10.1210/jendso/bvaa062
89. Carreau A-M, et al. Late Reactive Hypoglycemia (RHG) as a Common Early Sign of Glycemic Dysfunction in Obese Adolescent Girls. *Diabetes*. 2018. doi:10.2337/db18-1361-p
90. Mahoney CR, Taylor HA, Kanarek RB, Samuel P. Effect of breakfast composition on cognitive processes in elementary school children. *Physiol Behav*. 2005. doi:10.1016/j.physbeh.2005.06.023
91. Cooper SB, Bandelow S, Nute ML, Morris JG, Nevill ME. Breakfast glycaemic index and cognitive function in adolescent school children. *Br J Nutr*. 2012. doi:10.1017/S0007114511005022
92. Micha R, Rogers PJ, Nelson M. Glycaemic index and glycaemic load of breakfast predict cognitive

- function and mood in school children: A randomised controlled trial. *Br J Nutr.* 2011. doi:10.1017/S0007114511002303
93. Micha R, Rogers PJ, Nelson M. The glycaemic potency of breakfast and cognitive function in school children. *Eur J Clin Nutr.* 2010. doi:10.1038/ejcn.2010.96
 94. Ingwersen J, Defeyter MA, Kennedy DO, Wesnes KA, Scholey AB. A low glycaemic index breakfast cereal preferentially prevents children’s cognitive performance from declining throughout the morning. *Appetite.* 2007. doi:10.1016/j.appet.2006.06.009
 95. Álvarez-Bueno C, Martínez-Vizcaíno V, López EJ, Visier-Alfonso ME, Redondo-Tébar A, Caverro-Redondo I. Comparative effect of low-glycemic index versus high-glycemic index breakfasts on cognitive function: A systematic review and meta-analysis. *Nutrients.* 2019. doi:10.3390/nu11081706
 96. Wolraich ML, Wilson DB, White JW. The effect of sugar on behavior or cognition in children: A meta-analysis. *J Am Med Assoc.* 1995. doi:10.1001/jama.274.20.1617
 97. Wolraich ML, Lindgren SD, Stumbo PJ, Stegink LD, Appelbaum MI, Kiritsy MC. Effects of Diets High in Sucrose or Aspartame on The Behavior and Cognitive Performance of Children. *N Engl J Med.* 1994. doi:10.1056/nejm199402033300501
 98. Kelly JR, Minuto C, Cryan JF, Clarke G, Dinan TG. Cross talk: The microbiota and neurodevelopmental disorders. *Front Neurosci.* 2017;11(SEP). doi:10.3389/fnins.2017.00490
 99. Cenit MC, Sanz Y, Codoñer-Franch P. Influence of gut microbiota on neuropsychiatric disorders. *World J Gastroenterol.* 2017. doi:10.3748/wjg.v23.i30.5486
 100. Cryan JF, O’riordan KJ, Cowan CSM, et al. The microbiota-gut-brain axis. *Physiol Rev.* 2019. doi:10.1152/physrev.00018.2018
 101. Dam, S., et al. Brain and behavioral changes in mice colonized with human ADHD gut microbiota. *Eur Neuropsychopharmacol.* 2019.
 102. Rieder R, Wisniewski PJ, Alderman BL, Campbell SC. Microbes and mental health: A review. *Brain Behav Immun.* 2017. doi:10.1016/j.bbi.2017.01.016
 103. Cenit MC, Nuevo IC, Codoñer-Franch P, Dinan TG, Sanz Y. Gut microbiota and attention deficit hyperactivity disorder: new perspectives for a challenging condition. *Eur Child Adolesc Psychiatry.* 2017. doi:10.1007/s00787-017-0969-z
 104. Warner BB. The contribution of the gut microbiome to neurodevelopment and neuropsychiatric disorders. *Pediatr Res.* 2019. doi:10.1038/s41390-018-0191-9
 105. Osadchiy S, Martin C, Mayer E. The Gut–Brain Axis and the Microbiome: Mechanisms and Clinical Implications. *Clin Gastroenterol Hepatol.* 2019. doi:10.1016/j.cgh.2018.10.002 LK -
 106. Osadchiy V, Martin CR, Mayer EA. Gut microbiome and modulation of CNS function. *Compr Physiol.* 2020. doi:10.1002/cphy.c180031
 107. Sudo N, Chida Y, Aiba Y, et al. Postnatal microbial colonization programs the hypothalamic-pituitary-adrenal system for stress response in mice. *J Physiol.* 2004. doi:10.1113/jphysiol.2004.063388
 108. Sudo N. The Hypothalamic-Pituitary-Adrenal Axis and Gut Microbiota: A Target for Dietary Intervention? In: *The Gut-Brain Axis Dietary, Probiotic, and Prebiotic Interventions on the*

- Microbiota.* ; 2016. doi:10.1016/B978-0-12-802304-4.00013-X
109. Kelly JR, Borre Y, O’ Brien C, et al. Transferring the blues: Depression-associated gut microbiota induces neurobehavioural changes in the rat. *J Psychiatr Res.* 2016. doi:10.1016/j.jpsychires.2016.07.019
 110. Tengeler AC, Dam SA, Wiesmann M, et al. Gut microbiota from persons with attention-deficit/hyperactivity disorder affects the brain in mice. *Microbiome.* 2020. doi:10.1186/s40168-020-00816-x
 111. Wang L, Yu YM, Zhang Y qi, Zhang J, Lu N, Liu N. Hydrogen breath test to detect small intestinal bacterial overgrowth: a prevalence case–control study in autism. *Eur Child Adolesc Psychiatry.* 2018. doi:10.1007/s00787-017-1039-2
 112. Kang DW, Adams JB, Gregory AC, et al. Microbiota Transfer Therapy alters gut ecosystem and improves gastrointestinal and autism symptoms: An open-label study. *Microbiome.* 2017. doi:10.1186/s40168-016-0225-7
 113. Kang DW, Adams JB, Coleman DM, et al. Long-term benefit of Microbiota Transfer Therapy on autism symptoms and gut microbiota. *Sci Rep.* 2019. doi:10.1038/s41598-019-42183-0
 114. Pärtty A, Kalliomäki M, Wacklin P, Salminen S, Isolauri E. A possible link between early probiotic intervention and the risk of neuropsychiatric disorders later in childhood: A randomized trial. *Pediatr Res.* 2015. doi:10.1038/pr.2015.51
 115. Noonan S, Zaveri M, Macaninch E, Martyn K. Food & mood: a review of supplementary prebiotic and probiotic interventions in the treatment of anxiety and depression in adults. *BMJ Nutr Prev Heal.* 2020;0:bmjnph-2019-000053. doi:10.1136/bmjnph-2019-000053
 116. Rao SSC, Bhagatwala J. Small Intestinal Bacterial Overgrowth: Clinical Features and Therapeutic Management. *Clin Transl Gastroenterol.* 2019. doi:10.14309/ctg.0000000000000078
 117. Pimentel M, Saad RJ, Long MD, Rao SSC. ACG Clinical Guideline: Small Intestinal Bacterial Overgrowth. *Am J Gastroenterol.* 2020. doi:10.14309/ajg.0000000000000501
 118. Rao SSC, Rehman A, Yu S, De Andino NM. Brain fogginess, gas and bloating: A link between SIBO, probiotics and metabolic acidosis article. In: *Clinical and Translational Gastroenterology.* ; 2018. doi:10.1038/s41424-018-0030-7
 119. Avelar Rodriguez D, Ryan PMD, Toro Monjaraz EM, Ramirez Mayans JA, Quigley EM. Small Intestinal Bacterial Overgrowth in Children: A State-Of-The-Art Review. *Front Pediatr.* 2019. doi:10.3389/fped.2019.00363
 120. Donowitz JR, Petri WA. Pediatric small intestine bacterial overgrowth in low-income countries. *Trends Mol Med.* 2015. doi:10.1016/j.molmed.2014.11.001
 121. Sieczkowska A, Landowski P, Kamińska B, Lifschitz C. Small bowel bacterial overgrowth in children. *J Pediatr Gastroenterol Nutr.* 2016. doi:10.1097/MPG.0000000000000920
 122. Dunn GA, Nigg JT, Sullivan EL. Neuroinflammation as a risk factor for attention deficit hyperactivity disorder. *Pharmacol Biochem Behav.* 2019. doi:10.1016/j.pbb.2019.05.005
 123. Leffa DT, Torres ILS, Rohde LA. A review on the role of inflammation in attention-deficit/hyperactivity disorder. *Neuroimmunomodulation.* 2019. doi:10.1159/000489635
 124. Anand D, Colpo GD, Zeni G, Zeni CP, Smith KM, Colpo GD. Attention-Deficit/Hyperactivity

- Disorder And Inflammation: What Does Current Knowledge Tell Us? A Systematic Review. 2017;8(November):1-7. doi:10.3389/fpsy.2017.00228
125. Verlaet AAJ, Noriega DB, Hermans N, Savelkoul HFJ. Nutrition, immunological mechanisms and dietary immunomodulation in ADHD. *Eur Child Adolesc Psychiatry*. 2014. doi:10.1007/s00787-014-0522-2
 126. Tolkien K, Bradburn S, Murgatroyd C. An anti-inflammatory diet as a potential intervention for depressive disorders: A systematic review and meta-analysis. *Clin Nutr*. 2019. doi:10.1016/j.clnu.2018.11.007
 127. Benatti C, M.C. Blom J, Rigillo G, et al. Disease-Induced Neuroinflammation and Depression. *CNS Neurol Disord - Drug Targets*. 2016. doi:10.2174/1871527315666160321104749
 128. Chang JPC, Su KP. Nutritional Neuroscience as Mainstream of Psychiatry: The Evidence-Based Treatment Guidelines for Using Omega-3 Fatty Acids as a New Treatment for Psychiatric Disorders in Children and Adolescents. *Clin Psychopharmacol Neurosci*. 2020. doi:10.9758/CPN.2020.18.4.469
 129. Verlaet AAJ, Maasackers CM, Hermans N, Savelkoul HFJ. Rationale for dietary antioxidant treatment of ADHD. *Nutrients*. 2018. doi:10.3390/nu10040405
 130. Miller AH, Raison CL. The role of inflammation in depression: From evolutionary imperative to modern treatment target. *Nat Rev Immunol*. 2016. doi:10.1038/nri.2015.5
 131. Strawbridge R, Arnone D, Danese A, Papadopoulos A, Herane Vives A, Cleare AJ. Inflammation and clinical response to treatment in depression: A meta-analysis. *Eur Neuropsychopharmacol*. 2015. doi:10.1016/j.euroneuro.2015.06.007
 132. Raison CL, Felger JC, Miller AH. Inflammation and treatment resistance in major depression: The perfect storm. *Psychiatr Times*. 2013. doi:10.1016/j.bbi.2011.07.214
 133. Jacka FN, Neil AO, Opie R, et al. A randomised controlled trial of dietary improvement for adults with major depression (the ‘ SMILES ’ trial). *BMC Medicine*.2017:1-13. doi:10.1186/s12916-017-0791-y
 134. Dölp A, Schneider-Momm K, Heiser P, et al. Oligoantigenic Diet Improves Children’s ADHD Rating Scale Scores Reliably in Added Video-Rating. *Front Psychiatry*. 2020. doi:10.3389/fpsy.2020.00730
 135. Nigg JT, Holton K. Restriction and elimination diets in ADHD treatment. *Child Adolesc Psychiatr Clin N Am*. 2014. doi:10.1016/j.chc.2014.05.010
 136. Ly V, Bottelier M, Hoekstra PJ, Arias Vasquez A, Buitelaar JK, Rommelse NN. Elimination diets’ efficacy and mechanisms in attention deficit hyperactivity disorder and autism spectrum disorder. *Eur Child Adolesc Psychiatry*. 2017. doi:10.1007/s00787-017-0959-1
 137. Pelsser LM, Frankena K, Toorman J, Pereira RR. Diet and ADHD, reviewing the evidence: A systematic review of meta-analyses of double-blind placebo-controlled trials evaluating the efficacy of diet interventions on the behavior of children with ADHD. *PLoS One*. 2017. doi:10.1371/journal.pone.0169277
 138. Pelsser L, Frankena K, Toorman J, Rodrigues Pereira R. Retrospective Outcome Monitoring of ADHD and Nutrition (ROMAN): The Effectiveness of the Few-Foods Diet in General Practice. *Front Psychiatry*. 2020. doi:10.3389/fpsy.2020.00096

139. Egger J, Carter CM, Graham PJ, Gumley D, Soothill JF. Controlled trial of the oligoantigenic diet treatment in hyperkinetic syndrome. *Lancet*. 1985. doi: [10.1016/s0140-6736\(85\)91206-1](https://doi.org/10.1016/s0140-6736(85)91206-1)