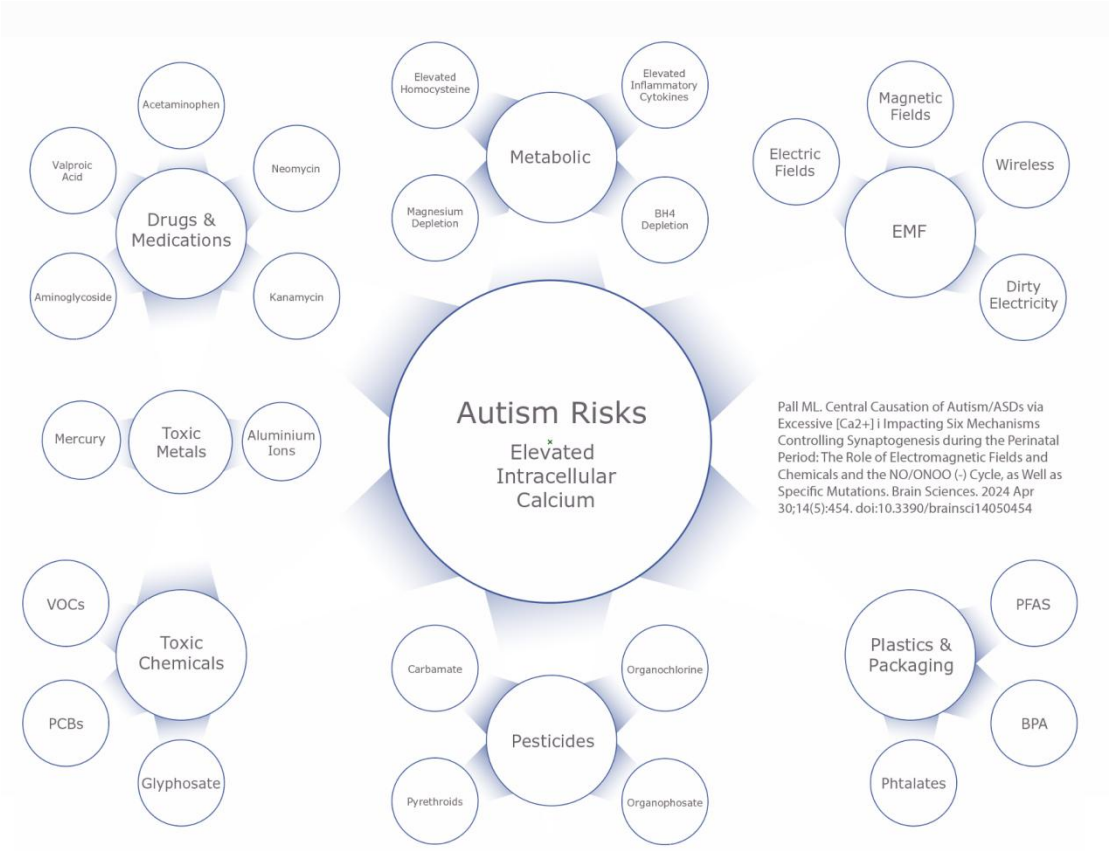
APPENDIX D — SCIENTIFIC REFERENCES REGARDING RF/EMF, AUTISM SPECTRUM DISORDER, AND NEURODEVELOPMENTAL DISORDERS



Ahuja, Y. R., Sharma, S., & Bahadur, B. (2013). Autism: An epigenomic side-effect of excessive exposure to electromagnetic fields. *International Journal of Medicine and Medical Sciences*, 5(4), 171–177. https://doi.org/10.5897/IJMMS12.135

Aldad, T. S., Gan, G., Gao, X. B., & Taylor, H. S. (2012). Fetal radiofrequency radiation exposure from 800–1900 MHz-rated cellular telephones affects neurodevelopment and behavior in mice. *Scientific Reports,* 2(1), Article 312. https://doi.org/10.1038/srep00312

Alsaeed, I., Al-Somali, F., Sakhnini, L., Aljarallah, O.S., Hamdan, R.M.M., Bubishate, S.A., Sarfaraz, Z.K. and Kamal, A. (2014), Autism-relevant social abnormalities in mice exposed perinatally to extremely low frequency electromagnetic fields. *International Journal of Developmental Neuroscience*, 37: 58-64. https://doi.org/10.1016/j.ijdevneu.2014.06.010

Birks, L., Guxens, M., Papadopoulou, E., Alexander, J., Ballester, F., Estarlich, M., Gallastegi, M., Ha, M., Haugen, M., Huss, A., Kheifets, L., Lim, H., Olsen, J., Santa-Marina, L., Sudan, M., Vermeulen, R., Vrijkotte, T., Cardis, E., & Vrijheid, M. (2017). Maternal cell phone use during pregnancy and child behavioral problems in five birth cohorts. *Environment International*, 104, 122–131. https://doi.org/10.1016/j.envint.2017.03.024

Cakir, B., Tanaka, Y., Choe, M. S., Kiral, F. R., Kim, J., Micali, N., Kang, Y. J., Dharmadhikari, B., Patterson, B., Yang, W. S., & Cho, Y. (2025). Radiofrequency regulates the BET-mediated pathways in radial glia differentiation in human cortical development. *Cell Reports*, 44(10), Article 116238. https://doi.org/10.1016/j.celrep.2025.116238

Divan, H. A., Kheifets, L., Obel, C., & Olsen, J. (2008). Prenatal and postnatal exposure to cell phone use and behavioral problems in children. *Epidemiology*, 19(4), 523–529. https://doi.org/10.1097/EDE.0b013e31817f6c8b

Gallastegi, M., Guxens, M., Jiménez-Zabala, A., Calvente, I., Fernández, M., Birks, L., Struchen, B., Vrijheid, M., Estarlich, M., Fernández, M. F., Torrent, M., Ballester, F., Aurrekoetxea, J. J., Ibarluzea, J., Guerra, D., González, J., Röösli, M., & Santa-Marina, L. (2016). Characterisation of exposure to non-ionising electromagnetic fields in the Spanish INMA birth cohort: Study protocol. *BMC Public Health*, 16, Article 182. https://doi.org/10.1186/s12889-016-2825-3

Herbert, M. R., & Sage, C. (2012). Findings in autism (ASD) consistent with electromagnetic fields (EMF) and radiofrequency radiation (RFR). In C. Sage & D. O. Carpenter (Eds.), *BioInitiative report: A rationale for a biologically-based public exposure standard for electromagnetic radiation* (Section 20). BioInitiative Working Group. https://bioinitiative.org/wp-content/uploads/pdfs/sec20_2012_Findings_in_Autism.pdf

Herbert, M. R., & Sage, C. (2013a). Autism and EMF? Plausibility of a pathophysiological link—Part I. *Pathophysiology*, 20(3), 191–209. https://doi.org/10.1016/j.pathophys.2013.08.001

Herbert, M. R., & Sage, C. (2013b). Autism and EMF? Plausibility of a pathophysiological link—Part II. *Pathophysiology*, 20(3), 211–234. https://doi.org/10.1016/j.pathophys.2013.08.002

Summary: The paper argues for a plausible link between Autism Spectrum Conditions (ASCs) and exposure to electromagnetic and radiofrequency radiation (EMF/RFR) by documenting the striking parallels between the multileveled biological disturbances found in both, including oxidative stress, mitochondrial and immune system dysfunction, inflammation, and calcium channel dysregulation.

Note: Breaching of the blood-brain barrier may permit some toxins and infectious agents to access brain tissue. This may result in environmental factors that are not rising in the environment, or are even declining in the environment, to have more access to brain tissue than they had in the past.

Huss, A., van Eijsden, M., Guxens, M., Beelen, R., Kromhout, H., & Vermeulen, R. (2015). Environmental radiofrequency electromagnetic fields exposure and sleep in 7-year-old children: A cross-sectional study. *PLOS ONE*, 10(8), Article e0139869. https://doi.org/10.1371/journal.pone.0139869

Kane, R. C. (2004). A possible association between fetal/neonatal exposure to radiofrequency electromagnetic radiation and the increased incidence of autism spectrum disorders. *Medical Hypotheses*, 62(2), 195–197.

Lathe, R. (2009). Microwave electromagnetic radiation and autism. *E-Journal of Applied Psychology*, 5(1), 11–30. https://doi.org/10.7790/ejap.v5i1.144

Laván, D., Argüelles, N., Lluncor, A., Huaman, D., Moyano, J., Ubillus, J., Peña, M., Paredes, M., Hernández, I., Guerra, A., & De La Cruz-Vargas, J. (2025). Review of the evidence on the influence of Wi-Fi 2.4 GHz radiation on oxidative stress and its possible relationship with Alzheimer's disease. *Frontiers in Neurology*, 16, Article 1616435. https://doi.org/10.3389/fneur.2025.1616435

Leković, Ž. (2025). Electromagnetic fields and oxidative stress: The link to the development of cancer, neurological diseases, and behavioral disorders. *Electromagnetic Biology and Medicine*. Advance online publication.

Mariea, T. J., & Carlo, G. L. (2007). Wireless radiation in the etiology and treatment of autism: Clinical observations and mechanisms. *Journal of the Australasian College of Nutritional and Environmental Medicine*, 26(2), 3–7. https://galweiss.com/wp-content/uploads/2021/08/Wireless-Radiation-in-the-Etiology-and-treatment-of-autism-Mariea-and-Carlo.pdf

Mortazavi, G. H., Haghani, M., Rastegarian, N., Zarei, S., & Mortazavi, S. M. (2016). Increased release of mercury from dental amalgam fillings due to maternal exposure to electromagnetic fields as a possible mechanism for the high rates of autism in the offspring: Introducing a hypothesis. J*ournal of Biomedical Physics & Engineering*, 6(1), 41.

Özgün, A., Marote, A., Behie, L. A., Salgado, A., & Garipcan, B. (2019). Extremely low frequency magnetic field induces human neuronal differentiation through NMDA receptor activation. J*ournal of Neural Transmission*, 126(10), 1281–1290. https://doi.org/10.1007/s00702-019-02045-5

Pall, M. L. (2024). Central causation of autism via excessive intracellular calcium and electromagnetic fields & chemicals. Brain Sciences, 14(5), Article 454. https://doi.org/10.3390/brainsci14050454

Summary: Excess intracellular calcium ions disrupt synapse development. EMF acts via voltage gated calcium channels to dysregulate and elevate intracellular calcium levels. Additionally, 15 chemicals (which include: mercury, aluminum, glyphosate and acetaminophen) are known to also elevate intracellular calcium via NDMA receptors.

Note: Pall (2024) focuses on excess intracellular calcium as the central cellular level mechanism in autism and explains how the total load of many of the primary environmental suspects (and some new suspects) work together to impact synapse development. The concept of intracellular calcium leading to excitement and

excitotoxicity is in alignment with autism research findings of an imbalance of excitation and inhibition.

Panagopoulos, D. J., Johansson, O., & Carlo, G. L. (2015). Polarization: A key difference between man-made and natural electromagnetic fields, in regard to biological activity. *Scientific Reports*, 5, Article 14914. https://doi.org/10.1038/srep14914

Summary: The polarization and coherence of man-made (anthropogenic) electromagnetic fields is a key factor that explains the disruption of voltage-gated ion channels, which leads to a cascade of adverse biological effects at much lower power levels than natural EMFs, such as sunlight.

Panagopoulos, D. J., Yakymenko, I., De Iuliis, G. N., & Chrousos, G. P. (2025). A comprehensive mechanism of biological and health effects of anthropogenic extremely low frequency and wireless communication electromagnetic fields. *Frontiers in Public Health*, 13, Article 1585441. https://doi.org/10.3389/fpubh.2025.1585441

Summary: While man-made EMFs cannot directly ionize molecules, they are capable of doing this indirectly in biological tissue, by triggering the biosynthesis of Reactive Oxygen Species (ROS) which can damage biomolecules, including DNA. The (over)production of ROS and the consequent OS are triggered by irregular gating of Voltage-Gated Ion Channels (VGICs) in the cell membranes as described by the Ion Forced Oscillation (IFO)-VGIC mechanism: Mobile ions within VGICs forced to oscillate by the applied ELF/ULF EMFs exert forces on the voltage sensors of the VGICs, similar to or greater than the forces that physiologically gate those channels, resulting in their irregular gating (dysfunction). The IFO-VGIC mechanism and the consequent OS constitute a comprehensive mechanism that explains all known adverse biological and health effects reported to be induced by anthropogenic EMFs.

Pietramala, K., Greco, A., Garoli, A., & Roblin, D. (2024). Effects of extremely low-frequency electromagnetic field treatment on ASD symptoms in children: A pilot study. *Brain Sciences*, 14(12), Article 1293. https://doi.org/10.3390/brainsci14121293

Setia, M. S., Natesan, R., Samant, P., Mhapankar, S., Kumar, S., Singh, I. V., Nair, A., & Seth, B. (2025). Radiofrequency electromagnetic field emissions and neurodevelopmental outcomes in infants: A prospective cohort study. *Cureus*, 17(7), Article e87671. https://doi.org/10.7759/cureus.87671

Sparks, R. A. (2012). *RF energy exposure and risk of autism spectrum disorders.* *https://emmind.net/scien/cap/Files/%28572%29%20Autism%20CellPhone%20Study.pdf*

Thornton, I. M. (2006). Out of time: A possible link between mirror neurons, autism and electromagnetic radiation. *Medical Hypotheses*, 67(2), 378–382. https://doi.org/10.1016/j.mehy.2006.01.032