

INDEX

Independent Science on the Effects of Wireless Radiation on Human Health and the Environment

Updated August 2021

- I. Effects on Fetuses
- II. Effects on Children and Adolescents
- III. Brain Tumors
- IV. Parotid Gland Tumors
- V. Other Malignancies
- VI. DNA Damage and Gene Expression Changes
- VII. Neurological/Cognitive Effects
- VIII. Cardiovascular Effects
- IX. Male Fertility
- X. Electromagnetic Sensitivity
- XI. Implanted Medical Devices
- XII. 5G Effects
- XIII. Wildlife and Plants
- XIV. Reports and Articles

I. EFFECTS ON FETUSES

1. **Mobile Phone Use During Pregnancy: Which Association With Fetal Growth?** Boileau, N., et al. *Journal of Gynecology Obstetrics and Human Reproduction* 49(8):101852. (2020). <https://pubmed.ncbi.nlm.nih.gov/32623065/>
2. **Mother's Exposure to Electromagnetic Fields Before and During Pregnancy is Associated with Risk of Speech Problems in Offspring.** Zarei, S., et al. *Journal of Biomedical Physics and Engineering* 9(1):61-68. (2019). <https://www.ncbi.nlm.nih.gov/pubmed/30881935>
3. **Prenatal Exposure to Extremely Low Frequency Magnetic Field and Its Impact on Fetal Growth.** Ren, Y., et al. *Environmental Health* 18(1):6. (2019). <https://www.ncbi.nlm.nih.gov/pubmed/30635061>
4. **Associations of Maternal Cell Phone Use During Pregnancy, Pregnancy Duration And Fetal Growth In Four Birth Cohorts.** Tsarna, E., et al. *American Journal of Epidemiology* 188(7):1270-1280. (2019). <https://www.ncbi.nlm.nih.gov/pubmed/30995291>

5. **Effect of radiofrequency radiation on reproductive health.** Singh, R., et al. *Indian Journal of Medical Research* 148(Suppl 1): S92–S99. (2018).
<https://doi.org/10.1038/s41598-017-16623-8>
6. **The Effects of Radiofrequency Radiation on Mice Fetus Weight, Length and Tissues.** Alimohammadi, I., et al. *Data in Brief* 19:2189-2194. (2018).
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6141437/pdf/main.pdf>
7. **Effects of Prenatal Exposure to WiFi Signal (2.45 GHz) on Postnatal Development and Behavior in Rat: Influence of Maternal Restraint.** Othman, H., et al. *Behavioral Brain Research* 326:291-301. (2017). <https://www.ncbi.nlm.nih.gov/pubmed/28288806>
8. **Exposure to Magnetic Field Non-Ionizing Radiation and the Risk of Miscarriage: A prospective Cohort Study.** Li, D., et al. *Scientific Reports* 7(17541). (2017).
<https://www.nature.com/articles/s41598-017-16623-8>
9. **Postnatal Development and Behavior Effects of In-Utero Exposure of Rats to Radiofrequency Waves Emitted From Conventional WiFi Devices.** Othman, H., et al. *Environmental Toxicology and Pharmacology* 52:239-247 (2017).
<https://www.ncbi.nlm.nih.gov/pubmed/28458069>
10. **Lasting Hepatotoxic Effects of Prenatal Mobile Phone Exposure.** Yilmaz, A., et al. *The Journal of Maternal-Fetal & Neonatal Medicine* 30(11):1355-1359 (2017).
<https://www.ncbi.nlm.nih.gov/pubmed/27427155>
11. **Multiple Assessment Methods of Prenatal Exposure to Radio Frequency Radiation from Telecommunication in the Mothers and Children’s Environmental Health (MOCEH) Study.** Choi, KH., et al. *International Journal of Occupational Medicine and Environmental Health* 29(6):959-972 (2016).
<https://www.ncbi.nlm.nih.gov/pubmed/27869246?dopt=Abstract>
12. **The Use of Signal-Transduction and Metabolic Pathways to Predict Human Disease Targets from Electric and Magnetic Fields Using *in vitro* Data in Human Cell Lines.** Parham, F., et al. *Frontiers in Public Health* 4(193). (2016).
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5013261/>
13. **A Review on Electromagnetic Fields (EMFs) and the Reproductive System.** Asghari, A., et al. *Electronic Physician Journal* 8(7):2655-2662. (2016).
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5014506/>

14. **Oxidative Mechanisms of Biological Activity of Low-Intensity Radiofrequency Radiation.** Yakymenko, I., et al. *Electromagnetic Biology and Medicine* 35(2):186-202. (2015). <https://www.ncbi.nlm.nih.gov/pubmed/26151230>
15. **Genotoxicity Induced by Foetal and Infant Exposure to Magnetic Fields and Modulation of Ionising Radiation Effects.** Udroui, I., et al. *PLoS One*10(11):E0142259. (2015). <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0142259>
16. **Oxidative Stress of Brain and Liver is Increased by Wi-Fi (2.45 GHz) Exposure of Rats During Pregnancy and the Development of Newborns.** Çelik, Ö., et al. *Journal of Chemical Neuroanatomy* 75(Pt B):134-139. (2015). <https://www.ncbi.nlm.nih.gov/pubmed/26520617>
17. **Neurodegenerative Changes and Apoptosis Induced by Intrauterine and Extrauterine Exposure of Radiofrequency Radiation.** Güler, G., et al. *Journal of Chemical Neuroanatomy* 75(Pt B):128-133. (2015). <https://www.ncbi.nlm.nih.gov/pubmed/26520616>
18. **Maternal Exposure to a Continuous 900-MHz Electromagnetic Field Provokes Neuronal Loss and Pathological Changes in Cerebellum of 32-Day-Old Female Rat Offspring.** Odacı, E., et al. *Journal of Chemical Neuroanatomy* 75(Pt B):105-110. (2015). <https://www.ncbi.nlm.nih.gov/pubmed/26391347>
19. **Different Periods of Intrauterine Exposure to Electromagnetic Field: Influence on Female Rats' Fertility, Prenatal and Postnatal Development.** Alchalabi, A., et al. *Asian Pacific Journal of Reproduction* 5(1):14-23. (2015). <https://www.sciencedirect.com/science/article/pii/S2305050015000536>
20. **Use of Mobile Phone During Pregnancy and the Risk of Spontaneous Abortion.** Mahmoudabadi, F., et al. *Journal of Environmental Health Science and Engineering* 13:34. (2015). <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4416385/>
21. **Effects of Prenatal 900 MHz Electromagnetic Field Exposures on the Histology of Rat Kidney.** Ulubay, M., et al. *International Journal of Radiation Biology* 91(1):35-41. (2015). <https://www.ncbi.nlm.nih.gov/pubmed/25084839>
22. **The Effect of Exposure of Rats During Prenatal Period to Radiation Spreading from Mobile Phones on Renal Development.** Bedir, R., et al. *Renal Failure* 37(2):305-9. (2015). <https://www.ncbi.nlm.nih.gov/pubmed/25691088?dopt=Abstract>

23. **Dosimetric Study of Fetal Exposure to Uniform Magnetic Fields at 50 Hz.** Liorni, I., et al. *Bioelectromagnetics* 35(8):580-97 (2014).
<https://www.ncbi.nlm.nih.gov/pubmed/25266786>
24. **Influence of Pregnancy Stage and Fetus Position on the Whole-Body and Local Exposure of the Fetus to RF-EMF.** Varsier, N. et al. *Physics in Medicine and Biology* 59(17):4913-26. (2014).
<https://www.ncbi.nlm.nih.gov/pubmed/25098501?dopt=Abstract>
25. **Autism-Relevant Social Abnormalities in Mice Exposed Perinatally to Extremely Low Frequency Electromagnetic Fields.** Alsaed, I., et al. *International Journal of Developmental Neuroscience* 37:58-64. (2014).
<https://www.ncbi.nlm.nih.gov/pubmed/24970316?dopt=Abstract>
26. **Pyramidal Cell Loss in the Cornu Ammonis of 32-day-old Female Rats Following Exposure to a 900 Megahertz Electromagnetic Field During Prenatal Days 13–21.** Bas, O., et al. *NeuroQuantology* 11(4):591-599. (2013).
<https://neuroquantology.com/index.php/journal/article/viewFile/701/625>
27. **The Effects of 900 Megahertz Electromagnetic Field Applied in the Prenatal Period on Spinal Cord Morphology and Motor Behavior in Female Rat Pups.** Odaci, E., et al. *NeuroQuantology* 11(4):573-581. (2013). <https://neuroquantology.com/article.php?id=2259>
28. **The Effects of Prenatal Exposure to a 900 Megahertz Electromagnetic Field on Hippocampus Morphology and Learning Behavior in Rat Pups.** İkinici, A., et al. *NeuroQuantology* 11(4):582-590. (2013). <https://neuroquantology.com/article.php?id=2262>
29. **Fetal Radiofrequency Radiation Exposure From 800-1900 MHz-Rated Cellular Telephones Affects Neurodevelopment and Behavior in Mice.** Aldad, T., et al. *Science Reports* 2:312. (2012). <https://www.nature.com/articles/srep00312>
30. **Cranial and Postcranial Skeletal Variations Induced in Mouse Embryos by Mobile Phone Radiation.** Fragopoulou, AF., et al. *Pathophysiology* 17(3):169-77. (2010).
<https://www.ncbi.nlm.nih.gov/pubmed/19854628>
31. **Dysbindin Modulates Prefrontal Cortical Glutamatergic Circuits and Working Memory Function in Mice.** Jentsch, JD., et al. *Neuropsychopharmacology* 34(12):2601–2608. (2009). <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2762021/>
32. **Stress Signalling Pathways that Impair Prefrontal Cortex Structure and Function.** Arnsten, A. *National Review of Neuroscience* 10(6):410–422. (2009).
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2907136/>

33. **Maternal Occupational Exposure to Extremely Low Frequency Magnetic Fields and the Risk of Brain Cancer in the Offspring.** Li, P, et al. *Cancer Causes & Control* 20(6):945-55. (2009). <https://www.ncbi.nlm.nih.gov/pubmed/19224378>
34. **Reproductive and Developmental Effects of EMF in Vertebrate Animal Models.** Pourlis, A.F. *Pathophysiology* 16(2-3):179-89. (2009). <https://www.ncbi.nlm.nih.gov/pubmed/19272761>
35. **Prenatal and Postnatal Exposure to Cell Phone Use and Behavioral Problems in Children.** Divan, HA., et al. *Epidemiology* 19(4):523-29 (2008). <https://www.ncbi.nlm.nih.gov/pubmed/18467962>
36. **Effects of Prenatal Exposure to a 900 MHz Electromagnetic Field on the Dentate Gyrus of Rats: A Stereological and Histopathological Study.** Odaci, E., et al. *Brain Research* 1238:224–229. (2008). <https://www.ncbi.nlm.nih.gov/pubmed/18761003>
37. **Exposure to Cell Phone Radiation Up-Regulates Apoptosis Genes in Primary Cultures of Neurons and Astrocytes.** Zhao, T., et al. *Neuroscience Letters* 412:34–38. (2007). <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2713174/>
38. **Cell Death Induced by GSM 900-MHz and DCS 1800-MHz Mobile Telephony Radiation.** Panagopoulos, DJ., et al. *Mutation Research* 626(1-2):69–78. (2006). <https://www.ncbi.nlm.nih.gov/pubmed/17045516>
39. **Ultra High Frequency-Electromagnetic Field Irradiation During Pregnancy Leads to an Increase in Erythrocytes Micronuclei Incidence in Rat Offspring.** Ferreira, A., et al. *Life Sciences* 80(1):43-50. (2006). <https://www.ncbi.nlm.nih.gov/pubmed/16978664>
40. **Attention-Deficit Hyperactivity Disorder.** Biederman, J. & Faraone, S. V. *Lancet* 366(9506):237–248. (2005). <https://www.ncbi.nlm.nih.gov/pubmed/16023516>
41. **Attention-Deficit/Hyperactivity Disorder: An Overview of the Etiology and a Review of the Literature Relating to the Correlates and Lifecourse Outcomes for Men and Women.** Brassett-Harknett, A. & Butler, N. *Clinical Psychology Review* 27(2):188–210. (2005). <http://europepmc.org/abstract/med/16081194>

II. EFFECTS ON CHILDREN AND ADOLESCENTS

1. **Development of health-based exposure limits for radiofrequency radiation from wireless devices using a benchmark dose approach.** Uche, U., et al. *Environmental Health*, 20(84). (2021). <https://ehjournal.biomedcentral.com/articles/10.1186/s12940-021-00768-1>

2. **Electromagnetic Fields, Pulsed Radiofrequency Radiation, and Epigenetics: How Wireless Technologies May Affect Childhood Development.** Sage, C. & Burgio, E. *Child Development* 89(1):129-136. (2017). <https://www.ncbi.nlm.nih.gov/pubmed/28504324>
3. **Prospective Cohort Analysis of Cellphone Use and Emotional and Behavioural Difficulties in Children.** Sudan, M., et al. *Journal of Epidemiology and Community Health* 70(12):1207-1213. (2016). <https://www.ncbi.nlm.nih.gov/pubmed/27217533>
4. **Radiofrequency-electromagnetic Field Exposures in Kindergarten Children.** Bhatt, C., et al. *Journal of Exposure Science and Environmental Epidemiology*. 27(5):497-504. (2016). <https://www.nature.com/articles/jes201655.pdf>
5. **Why Children Absorb More Microwave Radiation than Adults: The Consequences.** Morgan, L., et al. *Journal of Microscopy and Ultrastructure* 2(4):196-204. (2014). <https://www.sciencedirect.com/science/article/pii/S2213879X14000583>
- f 6. **A Prospective Study of In-Utero Exposure to Magnetic Fields and the Risk of Childhood Obesity.** Li, D., et al. *Scientific Reports* 2(540). (2012). <https://www.nature.com/articles/srep00540>
7. **Exposure to Extremely Low-Frequency Magnetic Fields and the Risk of Childhood Cancer: Update of the Epidemiological evidence.** Schüz, J. *Progress in Biophysics and Molecular Biology* 107(3):339-42. (2011). <https://www.sciencedirect.com/science/article/pii/S0079610711001076>
8. **Cell Phone Use and Behavioural Problems in Young Children.** Divan, HA., et al. *Journal of Epidemiol Community Health* 66(6):524-9. (2010). <https://www.ncbi.nlm.nih.gov/pubmed/21138897>
9. **Exposure to Radio-Frequency Electromagnetic Fields and Behavioral Problems in Bavarian Children and Adolescents.** Thomas, S., et al. *European Journal of Epidemiology* 25(2):135-41. (2009). <https://link.springer.com/article/10.1007/s10654-009-9408-x>
10. **The Sensitivity of Children to Electromagnetic Fields.** Kheifets, L., et al. *Deventer Journal of Pediatrics* 116(2):303-313. (2005). <http://pediatrics.aappublications.org/content/116/2/e303>

III. BRAIN TUMORS

1. **Simulation of The Incidence of Malignant Brain Tumors in Birth Cohorts That Started Using Mobile Phones When They First Became Popular in Japan.** Sato, Y., et al. *Bioelectromagnetics* 40(3):143-149. (2019).
<https://www.ncbi.nlm.nih.gov/pubmed/30875091>
2. **National Toxicology Technical Report on Cell Phones and Cancer. Toxicology and Carcinogenesis Studies in Sprague Dawley (Hsd:Sprague Dawley SD) Rats Exposed to Whole-body Radio Frequency Radiation at a Frequency (900 Mhz) and Modulations (GSM and CDMA) Used by Cell Phones.** National Toxicology Program TR595:1-466. (2018). https://ntp.niehs.nih.gov/ntp/htdocs/lt_rpts/tr595_508.pdf?utm_source=direct&utm_medium=prod&utm_campaign=ntpgolinks&utm_term=tr595
Summary: <https://ntp.niehs.nih.gov/whatwestudy/topics/cellphones/index.html>
3. **Report of Final Results Regarding Brain and Heart Tumors in Sprague-Dawley Rats Exposed From Prenatal Life Until Natural Death to Mobile Phone Radiofrequency Field Representative of a 1.8 GHz GSM Base Station Environmental Emission.** Falcioni, L, et al. *Environmental Research* 165:496-503. (2018).
<https://www.ncbi.nlm.nih.gov/pubmed/29530389>
4. **Exposure to Cell Phone Radiofrequency Changes Corticotrophin Hormone Levels and Histology of The Brain and Adrenal Glands in Male Wistar Rat.** Shahabi, S., et al. *Iranian Journal of Basic Medical Sciences* 21:1269-1274. (2018).
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6312682/>
5. **Brain Tumours: Rise in Glioblastoma Multiforme Incidence in England 1995-2015 Suggests an Adverse Environmental or Lifestyle Factor.** Philips, A., et al. *Journal of Environmental and Public Health* 2018(7910754). (2018).
<https://www.hindawi.com/journals/jeph/2018/7910754/>
6. **The 2100 MHz Radiofrequency Radiation of a 3G-Mobile Phone and the DNA Oxidative Damage in Brain.** Sahin, D, et al. *Journal of Chemical Neuroanatomy* 75(Pt B):94-98. (2016). <http://www.sciencedirect.com/science/article/pii/S0891061816000041>
7. **Mobile Phone and Cordless Phone Use and the Risk for Glioma - Analysis of Pooled Case-Control Studies in Sweden 1997-2003 and 2007-2009.** Hardell, L. et al. *PathoPhysiology* 22(1):1-13. (2015). <http://www.ncbi.nlm.nih.gov/pubmed/25466607>
8. **Mobile Phone Radiation Causes Brain Tumors and Should Be Classified as a Probable Human Carcinogen.** Morgan, L., et al. *International Journal of Oncology* 46:1865-1871. (2015). <https://www.spandidos-publications.com/ijo/46/5/1865>

9. **Mobile Phone Use and Brain Tumours in the CERENAT Case-Control Study.** Coureau, G., et al. *Occupational & Environmental Medicine* 71(7):514-22 (2014).
<http://www.ncbi.nlm.nih.gov/pubmed/24816517>
10. **Pooled Analysis of Case-Control Studies on Acoustic Neuroma Diagnosed 1997-2003 and 2007-2009 and Use of Mobile and Cordless Phones.** Hardell, L., et al. *International Journal of Oncology* 43(4):1036-1044. (2013).
<http://www.ncbi.nlm.nih.gov/pubmed/23877578>
11. **Using the Hill Viewpoints from 1965 for Evaluating Strengths of Evidence of the Risk for Brain Tumors Associated with use of Mobile and Cordless Phones.** Hardell, L., et al. *Reviews on Environmental Health* 28(2-3):97-106. (2013).
<http://www.ncbi.nlm.nih.gov/pubmed/24192496>
12. **Use of Mobile Phones and Cordless Phones is Associated with Increased Risk for Glioma and Acoustic Neuroma.** Hardell, L., Carlberg, M., et al. *PathoPhysiology* 20(2):85-110. (2013). <http://www.ncbi.nlm.nih.gov/pubmed/23261330>
13. **Mobile Phones and Head Tumours: A Critical Analysis of Case-Control Epidemiological Studies.** Levis, A.G., et al. *Open Environmental Sciences* 6(1):1-12. (2012). <https://benthamopen.com/contents/pdf/TOENVIRJ/TOENVIRJ-6-1.pdf>
14. **On the Association Between Glioma, Wireless Phones, Heredity and Ionising Radiation.** Carlberg, M., et al. *PathoPhysiology* 19(4):243-252. (2012).
<https://www.ncbi.nlm.nih.gov/pubmed/22939605>
15. **Mobile Phones and Head Tumours. The Discrepancies in Cause-Effect Relationships in the Epidemiological Studies - How Do They Arise?** Levis, A.G., et al. *Environmental Health* 10:59. (2011). <http://www.ncbi.nlm.nih.gov/pubmed/21679472>
16. **Indications of Possible Brain Tumour Risk in Mobile-Phone Studies: Should We Be Concerned?** Cardis, E., et al. *Occupational & Environmental Medicine* 68:169-171. (2011).
<http://oem.bmj.com/content/early/2010/12/15/oem.2010.061358>
17. **Estimating the Risk of Brain Tumors from Cell Phone Use: Published Case-Control Studies.** Morgan, LL. *Pathophysiology* 16(2-3):137-147. (2009).
<http://www.ncbi.nlm.nih.gov/pubmed/19356911>
18. **Cell Phones and Brain Tumors: A Review Including the Long-Term Epidemiologic Data.** Khurana, V.G., et al. *Surgical Neurology* 72(3):205-14. (2009).
<http://www.ncbi.nlm.nih.gov/pubmed/19328536>

19. **Epidemiological Evidence for an Association Between Use of Wireless Phones and Tumor Diseases.** Hardell, L., et al. *PathoPhysiology* 16(2-3):113-122. (2009). <http://www.ncbi.nlm.nih.gov/pubmed/19268551>
20. **Mobile Phone, Cordless Phones and the Risk for Brain Tumours.** Hardell, L., et al. *International Journal of Oncology* 35(1):5-17 (2009). <http://www.ncbi.nlm.nih.gov/pubmed/19513546>
21. **Histopathological Examinations of Rat Brains After Long-Term Exposure to GSM-900 Mobile Phone Radiation.** Grafström, G., et al. *Brain Research Bulletin* 77(5):257-63. (2008). <http://www.ncbi.nlm.nih.gov/pubmed/18782606>
22. **Mobile Phone Use and the Risk of Acoustic Neuroma.** Lonn, S., et al. *Epidemiology* 15(6):653-659. (2004). <https://www.ncbi.nlm.nih.gov/pubmed/15475713>

IV. PAROTID GLAND TUMORS

1. **Influence of Handheld Mobiles on Parotid: A Cohort Study.** Ranjitha, G., et al. *Journal of Indian Academy of Oral Medicine & Radiology* 29:254-258. (2017). <http://www.jiaomr.in/article.asp?issn=0972-1363;year=2017;volume=29;issue=4;spage=254;epage=258;aulast=Ranjitha>
2. **Does Cell Phone Use Increase the Chances of Parotid Gland Tumor Development? A Systematic Review and Meta-Analysis.** De Siqueira, EC., et al. *Journal of Oral Pathology and Medicine* 46(7) 480-483. (2017). <https://www.ncbi.nlm.nih.gov/pubmed/27935126?dopt=Abstract>
3. **Correlation Between Cellular Phone Use and Epithelial Parotid Gland Malignancies.** Duan, Y., et al. *International Journal of Oral and Maxillofacial Surgery* 40(9):966-972. (2011). <http://www.ncbi.nlm.nih.gov/pubmed/21474287>
4. **Mobile Phones Use and Risk of Tumors: A Meta-Analysis.** Myung, SK., et al. *Journal of Clinical Oncology* 27(33):5565-72. (2009). <http://www.ncbi.nlm.nih.gov/pubmed/19826127>
5. **Epidemiological Evidence for an Association Between use of Wireless Phones and Tumor Diseases.** Hardell, L., et al. *PathoPhysiology* 16(2-3):113-122. (2009). <http://www.sciencedirect.com/science/article/pii/S0928468009000091>
6. **Cell Phone Use and Risk of Benign and Malignant Parotid Gland Tumors - A Nationwide Case-Control Study.** Sadetzki, S., et al. *American Journal of Epidemiology* 167(4):457-467. (2007). <http://aje.oxfordjournals.org/content/167/4/457.abstract>

V. OTHER MALIGNANCIES

1. **The Carcinogenic Potential of Non-Ionizing Radiations: The Cases of S-50 Hz MF and 1.8 GHz GSM Radiofrequency Radiation.** Soffritti, M., et al. *Basic & Clinical Pharmacology & Toxicology* 1125(Suppl.3):58-69. (2019).
<https://onlinelibrary.wiley.com/doi/epdf/10.1111/bcpt.13215>
2. **National Toxicology Technical Report on Cell Phones and Cancer. Toxicology and Carcinogenesis Studies in Sprague Dawley (Hsd:Sprague Dawley SD) Rats Exposed to Whole-body Radio Frequency Radiation at a Frequency (900 Mhz) and Modulations (GSM and CDMA) Used by Cell Phones.** National Toxicology Program TR595:1-466. (2018). https://ntp.niehs.nih.gov/ntp/htdocs/lt_rpts/tr595_508.pdf?utm_source=direct&utm_medium=prod&utm_campaign=ntpgolinks&utm_term=tr595
Summary: <https://ntp.niehs.nih.gov/whatwestudy/topics/cellphones/index.html>
3. **Tumor Promotion by Exposure to Radiofrequency Electromagnetic Fields Below Exposure Limits for Humans.** Lerchl, A., et al. *Biochemical and Biophysical Research Communications* 459(4):585-590. (2015).
<http://www.sciencedirect.com/science/article/pii/S0006291X15003988>
4. **Swedish Review Strengthen Grounds for Concluding that Radiation from Cellular and Cordless Phones is a Probable Human Carcinogen.** Davis, DL., et al. *Pathophysiology* 20(2):123-129. (2013). <http://www.ncbi.nlm.nih.gov/pubmed/23664410>
5. **Multifocal Breast Cancer in Young Women with Prolonged Contact Between Their Breasts and Their Cellular Phones.** West, J., et al. *Case Reports in Medicine* 2013(354682). (2013). <http://www.hindawi.com/journals/crim/2013/354682/>
6. **Case-Control study of the Use of Mobile and Cordless Phones and the Risk for Malignant Melanoma in the Head and Neck Region.** Hardell, L., et al. *Pathophysiology* 18(4):325-333 (2011).
<http://www.sciencedirect.com/science/article/pii/S0928468011000320>
7. **Epidemiological Evidence for an Association Between Use of Wireless Phones and Tumor Diseases.** Hardell, L., et al. *PathoPhysiology* 16(2-3):113-122. (2009).
<http://www.ncbi.nlm.nih.gov/pubmed/19268551>
8. **Study on Potential Effects of “902 MHz GSM-type Wireless Communication Signals” on DMBA-Induced Mammary Tumours in Sprague-Dawley Rats.** Hruby, R., et al. *Mutation Research* 649(1-2):34-44. (2008). <http://www.ncbi.nlm.nih.gov/pubmed/17981079>

VI. DNA DAMAGE AND GENE EXPRESSION CHANGES

1. **National Toxicology Technical Report on Cell Phones and Cancer. Toxicology and Carcinogenesis Studies in Sprague Dawley (Hsd:Sprague Dawley SD) Rats Exposed to Whole-body Radio Frequency Radiation at a Frequency (900 Mhz) and Modulations (GSM and CDMA) Used by Cell Phones.** National Toxicology Program TR595:1-466. (2018). https://ntp.niehs.nih.gov/ntp/htdocs/lt_rpts/tr595_508.pdf?utm_source=direct&utm_medium=prod&utm_campaign=ntpgolinks&utm_term=tr595
Summary: <https://ntp.niehs.nih.gov/whatwestudy/topics/cellphones/index.html>
2. **Impact of radiofrequency radiation on DNA damage and antioxidants in peripheral blood lymphocytes of humans residing in the vicinity of mobile phone base stations.** Zothansiana, M., et al. *Electromagnetic Biology and Medicine* 36(3):295-305. (2017). <https://pubmed.ncbi.nlm.nih.gov/28777669/>
3. **Microwaves from Mobile Phones Inhibit 53BP1 Focus Formation in Human Stem Cells More Strongly Than in Differentiated Cells: Possible Mechanistic Link to Cancer Risk.** Markova, E., et al. *Environmental Health Perspectives* 118(3):394-399. (2010). <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2854769/>
4. **Radiofrequency Radiation and Gene/Protein Expression: A Review.** McNamee, JP., et al. *Radiation Research* 172(3):265-287. (2009). <http://www.ncbi.nlm.nih.gov/pubmed/19708776>
5. **Evaluation of HSP70 Expression and DNA Damage in Cells of a Human Trophoblast Cell Line Exposed to 1.8GHz Amplitude-Modulated Radiofrequency Fields.** Valbonesi, P., et al. *Radiation Research* 169(3):270-279. (2008). <http://www.ncbi.nlm.nih.gov/pubmed/18302482>
6. **Gene and Protein Expression Following Exposure to Radiofrequency Fields from Mobile Phones.** Vanderstraeten, J., et al. *Environmental Health Perspectives* 116(9):1131-5. (2008). <https://www.ncbi.nlm.nih.gov/pubmed/18795152>
7. **Nonthermal Effects of RadioFrequency-Field Exposure on Calcium Dynamics in Stem Cell-derived Neuronal Cells: Elucidation of Calcium Pathways.** Rao, V.S., et al. *Radiation Research* 169(3):319-329. (2008). <https://www.ncbi.nlm.nih.gov/pubmed/18302487>
8. **Gene Expression Changes in the Skin of Rats Induced by Prolonged 35 GHz Millimeter-Wave Exposure.** Millenbaugh, NJ., et al. *Radiation Research* 169(3):288-300. (2008). <http://www.ncbi.nlm.nih.gov/pubmed/18302488>

9. **DNA Damage in Molt-4 T-lymphoblastoid Cells Exposed to Cellular Telephone Radiofrequency Fields in Vitro.** Philips, J., et al. *Bioelectrochemistry and Bioenergetics* 45(1):103-110. (1998).
<http://www.sciencedirect.com/science/article/pii/S0302459898000749>

VII. NEUROLOGICAL/COGNITIVE EFFECTS

1. **Early-Life Exposure to Pulsed LTE Radiofrequency Fields Causes Persistent Changes in Activity and Behavior in C57BL/6 J Mice.** Broom, K., et al. *Bio Electro Magnetics* 40(7):498-511. (2019). <https://onlinelibrary.wiley.com/doi/full/10.1002/bem.22217>
2. **Are Rises in Electro-Magnetic Field in The Human Environment, Interacting with Multiple Environmental Pollutions, The Tripping Point for Increases in Neurological Deaths in the Western World?** Pritchard, C., et al. *Medical Hypotheses* 127: 76-83. (2019).
<https://www.sciencedirect.com/science/article/pii/S0306987719300040?via%3Dihub>
3. **Effect of 1800-2100 MHz Electromagnetic Radiation on Learning-Memory and Hippocampal Morphology in Swiss Albino Mice.** Kishore, G., et al. *Journal of Clinical and Diagnostic Research* 12(2):14-17. (2019).
https://www.researchgate.net/publication/330729256_Effect_of_1800-2100_MHz_Electromagnetic_Radiation_on_Learning-Memory_and_Hippocampal_Morphology_in_Swiss_Albino_Mice
4. **Monitoring of BALB/C Strain Mice Health, Investigation of Behavior, Hematological Parameters Under the Effect of an Electromagnetic Field.** Zymantiene, J., et al. *Medycyna Weterynaryjna* 75(03):158-163. (2019).
https://www.researchgate.net/publication/330652562_Monitoring_of_BALBC_strain_mice_health_investigation_of_behavior_hematological_parameters_under_the_effect_of_an_electromagnetic_field
5. **2.45 GHz Microwave Radiation Impairs Learning, Memory, and Hippocampal Synaptic Plasticity in The Rat.** Karimi, N., et al. *Toxicology and Industrial Health* 34(12):873-883. (2018). <https://www.ncbi.nlm.nih.gov/pubmed/30345889>
6. **Mobile Phone distance From Head and Temperature Changes of Radio Frequency Waves on Brain Tissue.** Forouharmajd, F., et al. *International Journal of Preventative Medicine* 9(1):61. (2018). <https://www.ncbi.nlm.nih.gov/pubmed/30123435>
7. **A Prospective Cohort Study of Adolescents' Memory Performance and Individual Brain Dose of Microwave Radiation from Wireless Communication.** Foerster, M., et al. *Environmental Health Perspectives* 126(7). (2018). <https://ehp.niehs.nih.gov/ehp2427/#tab3>

8. **Electromagnetic Radiation 2450 MHz Exposure Causes Cognition Deficit with Mitochondrial Dysfunction and Activation of Intrinsic Pathway of Apoptosis in Rats.** Gupta, S.K., et al. *Journal of Biosciences* 43(2) 263-276. (2018).
<https://www.ias.ac.in/article/fulltext/jbsc/043/02/0263-0276>
9. **The Effect of Wi-Fi Electromagnetic Waves in Unimodal and Multimodal Object Recognition Tasks in Male Rats.** Hassanshahi, A., et al. *Neurological Sciences* 38(6):1069-1076. (2017). <https://www.ncbi.nlm.nih.gov/pubmed/28332042>
10. **Effects of Short and Long Term Electromagnetic Fields Exposure on the Human Hippocampus.** Deniz, O.G., et al. *Journal of Microscopy and Ultrastructure* 5(4):191-197. (2017). <https://www.sciencedirect.com/science/article/pii/S2213879X17300524>
11. **Effects of Long Term Exposure of 900-1800 MHz Radiation Emitted from 2G Mobile Phone on Mice Hippocampus – A Histomorphometric Study.** Mugunthan, N., et al. *Journal of Clinical and Diagnostic Research* 10(8):AF01-6. (2016).
<https://www.ncbi.nlm.nih.gov/pubmed/27656427?dopt=Abstract>
12. **Effect of Mobile Phone Radiation on Pentylentetrazole-Induced Seizure Threshold in Mice.** Kouchaki, E., et al. *Iranian Journal of Basic Medical Sciences* 19(7):800-3. (2016).
<https://www.ncbi.nlm.nih.gov/pubmed/27635206?dopt=Abstract>
13. **Effects of 3 Hz and 60Hz Extremely Low Frequency Electromagnetic Fields on Anxiety-Like Behaviors, Memory Retention of Passive Avoidance and ElectroPhysiological Properties of Male Rats.** Rostami, A., et al. *Journal of Lasers in Medical Science* 7(2):120-125. (2016). <http://www.ncbi.nlm.nih.gov/pubmed/27330708>
14. **Short-Term Memory in Mice is Affected by Mobile Phone Radiation.** Ntzouni, MP., et al. *PathoPhysiology* 18(3):193-199. (2011). <http://www.ncbi.nlm.nih.gov/pubmed/21112192>
15. **Use of Mobile Phones and Changes in Cognitive Function in Adolescents.** Thomas, S., et al. *Occupational Environmental Medicine* 67(12):861-866. (2010).
<http://www.ncbi.nlm.nih.gov/pubmed/20798018>
16. **Increased Blood-Brain Barrier Permeability in Mammalian Brain 7 Days After Exposure to the Radiation from a GSM-900 Mobile Phone.** Nittby, H., et al. *PathoPhysiology* 16(2-3):103-12. (2009). <http://www.ncbi.nlm.nih.gov/pubmed/19345073>
17. **Effects of GSM 1800 MHz on Dendritic Development of Cultured Hippocampal Neurons.** Ning, W., et al. *Acta Pharmacologica Sinica* 28(12):1873-1880. (2007).
<http://www.ncbi.nlm.nih.gov/pubmed/18031599>

18. **Neurological Effects of Radiofrequency Electromagnetic Radiation.** Lai, H. *Advances in Electromagnetic Fields in Living Systems* 1:27-80. (1994).
http://link.springer.com/chapter/10.1007%2F978-1-4615-2542-4_2#page-1

VIII. CARDIOVASCULAR EFFECTS

1. **Exposure to cell phones reduces heart rate variability in both normal-weight and obese normotensive medical students.** Alassiri, M., et al. *Explore (NY)*. 16(4):264-270. (2020).
<https://www.ncbi.nlm.nih.gov/pubmed/32249199>
2. **Assessment of electromagnetic fields, vibration and sound exposure effects from multiple transceiver mobile phones on oxidative stress levels in serum, brain and heart tissue.** Usman, J.D., et al. *Scientific African*. 7(e00271). (2020).
<https://www.sciencedirect.com/science/article/pii/S2468227620300090>
3. **Aluminium foil dampened the adverse effect of 2100 MHz mobile phone-induced radiation on the blood parameters and myocardium in rats.** Kalanjati, V.P., et al. *Environmental Science and Pollution Research*. 26(12):11686-11689. (2019).
<https://www.ncbi.nlm.nih.gov/pubmed/30806932>
4. **National Toxicology Technical Report on Cell Phones and Cancer.Toxicology and Carcinogenesis Studies in Sprague Dawley (Hsd:Sprague Dawley SD) Rats Exposed to Whole-body Radio Frequency Radiation at a Frequency (900 Mhz) and Modulations (GSM and CDMA) Used by Cell Phones.** *National Toxicology Program* TR595:1-466. (2018).
https://ntp.niehs.nih.gov/ntp/htdocs/lt_rpts/tr595_508.pdf?utm_source=direct&utm_medium=prod&utm_campaign=ntpgolinks&utm_term=tr595
Summary: <https://ntp.niehs.nih.gov/whatwestudy/topics/cellphones/index.html>
5. **Wi-Fi Is an Important Threat to Human Health.** Pall, M. *Environmental Research*. 164:405-416. (2018). <https://pubmed.ncbi.nlm.nih.gov/29573716/>
6. **Report of final results regarding brain and heart tumors in Sprague-Dawley rats exposed from prenatal life until natural death to mobile phone radiofrequency field representative of a 1.8 GHz GSM base station environmental emission.** Falcioni, L., et al. *Environmental Research*. 165:496-503. (2018).
<https://www.sciencedirect.com/science/article/abs/pii/S0013935118300367>
7. **Cardiovascular disease: Time to identify emerging environmental risk factors.** Bandara, P., et al. *European Journal of Preventative Cardiology*. 24(17):1819-1823. (2017).
<https://journals.sagepub.com/doi/10.1177/2047487317734898>
8. **The effects of the duration of mobile phone use on heart rate variability parameters in healthy subjects.** Ekici, B., et al. *The Anatolian Journal of Cardiology*. 16(11):833-838. (2016). <https://www.ncbi.nlm.nih.gov/pubmed/27109242>

9. **Effects of acute exposure to WIFI signals (2.45 GHz) on heart variability and blood pressure in Albinos rabbit.** Sali, L., et al. *Environmental Toxicology and Pharmacology*. 40(2):600-605. (2015).
<http://www.sciencedirect.com/science/article/pii/S1382668915300594>
10. **Electromagnetic fields promote severe and unique vascular calcification in an animal model of ectopic calcification.** Shuvy, M., et al. *Experimental and Toxicologic Pathology*. 66(7):345-350. (2014). <https://pubmed.ncbi.nlm.nih.gov/24882371/>
11. **The effects of prenatal exposure to a 900-MHz electromagnetic field on the 21-day-old male rat heart.** Türedi, S. et al. *Electromagnetic Biology and Medicine*. 34(4):390-397. (2014). <https://www.ncbi.nlm.nih.gov/pubmed/25166431>
12. **Electromagnetic fields act via activation of voltage-gated calcium channels to produce beneficial or adverse effects.** Pall, M.L. *Journal of Cellular and Molecular Medicine*. 17(8):958–965. (2013). <https://www.ncbi.nlm.nih.gov/pubmed/23802593>
13. **Electromagnetic fields produced by incubators influence heart rate variability in newborns.** Bellieni, C.V., et al. *Archives of Disease in Childhood – Fetal and Neonatal Edition*. 93(4):F298-F301. (2008). <https://www.ncbi.nlm.nih.gov/pubmed/18450804>
14. **Radiofrequency/microwave radiation biological effects and Safety standards: A review.** Bolen, S.M. *Griffiss Air Force Base, New York: United States Air Force Materiel Command*. 1-32. (1994). https://electromagnetichealth.org/wp-content/uploads/2015/01/RF_effects_USAF.pdf
15. **Biological Effects of Radio Frequency Radiation in Eurasian Communist Countries.** Adams, R.L., et al. *U.S. Medical Intelligence and Information Agency*. 1-35. (1975).
<https://mdsafetech.files.wordpress.com/2019/12/army-intelligence-research-on-biological-effects-of-radio-frequency-radiation-in-eurasian-communist-countries-1976..pdf>

IX. MALE FERTILITY

1. **Long-Term Exposure to 4G Smartphone Radiofrequency Electromagnetic Radiation Diminished Male Reproductive Portential by Directly Disrupting Spck3-MMP2-BTB Axis in the Testes of Adult Rats.** Yu, G., et al. *Science of The Total Environment* 698(133860). (2020).
<https://www.sciencedirect.com/science/article/pii/S0048969719338082?via%3Dihub>
2. **Radiations and Male Fertility.** Kesari, K., et al. *Reproductive Biology and Endocrinology* 16(118). (2018). <https://rbej.biomedcentral.com/articles/10.1186/s12958-018-0431-1>

3. **The Effect of 2.45 GHz Non-Ionizing Radiation on the Structure and Ultrastructure of The Testis in Juvenile Rats.** Simaiova, V., et al. *Histology and Histopathology* 34(4):18049. (2018).
https://www.researchgate.net/publication/327941558_The_effect_of_245_GHz_non-ionizing_radiation_on_the_structure_and_ultrastructure_of_the_testis_in_juvenile_rats
4. **Modulatory Effect of 900 MHz Radiation on Biochemical and Reproductive Parameters in Rats.** Narayanan, SN., et al. *Bratislava Medical Journal* 119(9):581-587. (2018). <https://www.ncbi.nlm.nih.gov/pubmed/30226070>
5. **Aloe Arborescens Juice Prevents EMF-Induced Oxidative Stress and Thus Protects from Pathophysiology in the Male Reproductive System In Vitro.** Solek, P., et al. *Environmental Research* 166:141-149. (2018).
<https://www.sciencedirect.com/science/article/pii/S0013935118301063?via=ihub>
6. **Radiofrequency Radiation (900 MHz)-Induced DNA Damage and Cell Cycle Arrest in Testicular Germ Cells in Swiss Albino Mice.** Pandey, N., et al. *Toxicology and Industrial Health* 33(4) 373-384. (2017). <https://www.ncbi.nlm.nih.gov/pubmed/27738269>
7. **The Effects of Radiofrequency Electromagnetic Radiation on Sperm Function.** Houston, BJ., et al. *Reproduction* 152(6):R263-R276. (2016).
<https://pubmed.ncbi.nlm.nih.gov/27601711/>
8. **Male Fertility and its Association with Occupational and Mobile Phone Tower Hazards: An Analytical Study.** Al-Quzwini, O., et al. *Middle East Fertility Society Journal* 21(4):236-240. (2016).
<https://www.sciencedirect.com/science/article/pii/S1110569016300127>
9. **Sperm DNA Damage – The Effect of Stress and Everyday Life Factors.** Radwan, M., et al. *International Journal of Impotence Research* 28(4):148-154. (2016).
<https://www.ncbi.nlm.nih.gov/pubmed/27076112>
10. **Electromagnetic Radiation at 900 MHz Induces Sperm Apoptosis through bcl-2, bax and caspase-3 Signaling Pathways in Rats.** Liu, Q., et al. *Journal of Reproductive Health* 12:65. (2015). <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4523914/>
11. **Habits of Cell Phone usage and Sperm Quality - Does It Warrant Attention?** Zilberlicht, A., et al. *Reproductive BioMedicine Online* 31(3):421-426. (2015).
<http://www.ncbi.nlm.nih.gov/pubmed/26206279>

12. **In Vitro Effect of Cell Phone Radiation on Motility, DNA Fragmentation and Clusterin Gene Expression in Human Sperm.** Zalata, A., et al. *International Journal of Fertility and Sterility* 9(1):129-136. (2015). <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4410031/>
13. **Extremely Low frequency Magnetic Fields Induce Spermatogenic Germ Cell Apoptosis: Possible Mechanism.** Lee, S., et al. *BioMed Research International* 2014(567183). (2014). <https://www.hindawi.com/journals/bmri/2014/567183/>
14. **Effect of mobile telephones on sperm quality: A systematic review and meta-analysis.** Adams, J., et al. *Environment International* 70:106-112. (2014). <https://www.sciencedirect.com/science/article/pii/S0160412014001354>
15. **Effect of Electromagnetic Field Exposure on the Reproductive System.** Gye, M., et al. *Journal of Clinical and Experimental Reproductive Medicine* 39(1):1-19. (2012). <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3341445/>
16. **Effects of the Exposure of Mobile Phones on Male Reproduction: A Review of the Literature.** La Vignera, S., et al. *Journal of Andrology* 33(3):350-356. (2012). <https://www.ncbi.nlm.nih.gov/pubmed/21799142>
17. **Use of Laptop Computers Connected to Internet Through Wi-Fi Decreases Human Sperm Motility and Increases Sperm DNA Fragmentation.** Avendano, C., et al. *Fertility and Sterility* 97(1):39-45. (2012). [https://www.fertstert.org/article/S0015-0282\(11\)02678-1/fulltext](https://www.fertstert.org/article/S0015-0282(11)02678-1/fulltext)
18. **Exposure to Magnetic fields and the Risk of Poor Sperm Quality.** Li, D.K., et al. *Journal of Reproductive Toxicology* 29(1):86-92. (2010). <http://www.ncbi.nlm.nih.gov/pubmed/19910156>
19. **Mobile Phone Radiation Induces Reactive Oxygen Species Production and DNA Damage in Human Spermatozoa In Vitro.** De Luliis, G., et al. *PLoS ONE* 4(7). (2009). <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0006446>
20. **Radio Frequency Electromagnetic Radiation (Rf-EMR) from GSM Mobile Phones Induces Oxidative Stress and Reduces Sperm Motility in Rats.** Mailankot, M., et al. *Clinics (San Paulo)* 64(6):561-5. (2009). <http://www.ncbi.nlm.nih.gov/pubmed/19578660>
21. **Cell Phones: Modern Man's Nemesis?** Makker, K., et al. *Reproductive BioMedicine Online* 18(1):148-157. (2009). <http://www.ncbi.nlm.nih.gov/pubmed/19146782>

22. **Indicative SAR Levels Due to an Active Mobile Phone in a Front Trouser Pocket in Proximity to Common Metallic Objects.** Whittow, WG., et al. *IEEE Xplore* 149-152 (2008). <http://ieeexplore.ieee.org/xpl/articleDetails.jsp?reload=true&arnumber=4516888>
23. **Effect of Cell Phone Usage on Semen Analysis in Men Attending Infertility Clinic: An Observational Study.** Agarwal, A., et al. *Fertility and Sterility* 89(1):124-128. (2008). <http://www.ncbi.nlm.nih.gov/pubmed/17482179>
24. **Cell Phones and Male Infertility: Dissecting the Relationship.** Deepinder, F., et al. *Reproductive BioMedicine Online* 15(3):266-270. (2007). <http://www.ncbi.nlm.nih.gov/pubmed/17854521>
25. **Evaluation of the Effect of Using Mobile Phones on Male Fertility.** Wdowiak, A., et al. *Annals of Agricultural and Medicine* 14(1):169-172. (2007). <http://www.ncbi.nlm.nih.gov/pubmed/17655195>

X. ELECTROMAGNETIC SENSITIVITY

1. **Becoming Electro-Hypersensitive: A Replication Study.** Dieudonne, M. *Bioelectromagnetic* 40:188-200. (2019). <https://www.ncbi.nlm.nih.gov/pubmed/30920673>
2. **Functional Brain MRI in Patients Complaining of Electrohypersensitivity After Long Term Exposure to Electromagnetic Fields.** Heuser, G. et al. *Reviews on Environmental Health* 32(3):291-299. (2017). <https://www.ncbi.nlm.nih.gov/pubmed/28678737>
3. **“Hot Nano Spots” as an Interpretation of So-Called Non-Thermal Biological Mobile Phone Effects.** Pftzner, H. *Journal of Electromagnetic Analysis and Applications* 8(3):62-69. (2016). <http://www.scirp.org/journal/PaperInformation.aspx?PaperID=65212>
4. **Analysis of the Genotoxic Effects of Mobile Phone Radiation Using Buccal Micronucleus Assay: A Comparative Evaluation.** Banerjee, S., et al. *Journal of Clinical and Diagnostic Research* 10(3):ZC82-ZC85. (2016). <https://www.ncbi.nlm.nih.gov/pubmed/27135009>
5. **Tinnitus and Cell Phones: The Role of Electromagnetic Radiofrequency Radiation.** Medeiros, L., et al. *Brazilian Journal of Otorhinolaryngology* 82(1):97-104. (2016). <http://www.sciencedirect.com/science/article/pii/S1808869415001639>

6. **Microwave Frequency Electromagnetic Fields (EMFs) Produce Widespread Neuropsychiatric Effects Including Depression.** Pall, M. *Journal of Chemical Neuroanatomy*. 7(Part B):43-51. (2016).
<https://www.sciencedirect.com/science/article/pii/S0891061815000599?via%3Dihub>
7. **Subjective Symptoms Related to GSM Radiation from Mobile Phone Base Stations: a Cross-Sectional Study.** Gomez-Perretta, C., et al. *BMJ Open* 3(12). (2013).
<http://bmjopen.bmj.com/content/3/12/e003836.full>
8. **Green Communication- A Stipulation to Reduce Electromagnetic Hypersensitivity from Cellular Phones.** Kumar, N., et al. *Procedia Technology* 4:682-686. (2012).
<http://www.sciencedirect.com/science/article/pii/S2212017312003891>
9. **Electromagnetic Hypersensitivity: Fact or Fiction?** Genius, S. et al. *Science of the Total Environment* 414(1):103-112. (2012).
<http://www.sciencedirect.com/science/article/pii/S0048969711012733>
10. **Neurobehavioral Effects Among Inhabitants Around Mobile Phone Base Stations.** Abdel-Rassoul, G., et al. *NeuroToxicology* 28(2):434-440. (2007).
<http://www.sciencedirect.com/science/article/pii/S0161813X06001835>
11. **Electrohypersensitivity: State-Of-The-Art of A Functional Impairment.** Johansson, O. *Electromagnetic Biology and Medicine* 25(4): 245-258. (2006).
<https://www.ncbi.nlm.nih.gov/pubmed/17178584>
12. **Electromagnetic Hypersensitivity: Biological Effects of Dirty Electricity With Emphasis on Diabetes and Multiple Sclerosis.** Havas, M. *Electromagnetic Biology and Medicine* 25(4): 259-268. (2006). <https://www.ncbi.nlm.nih.gov/pubmed/17178585>
13. **Establishing the Health Risks of Exposure to Radiofrequency Fields Requires Multidisciplinary Research.** Hietanen, M. *Scandinavian Journal of Work, the Environment, and Health* 32(3):169-170. (2006).
http://www.sjweh.fi/show_abstract.php?abstract_id=994
14. **Hypersensitivity of Human Subjects to Environmental Electric and Magnetic Field Exposure: A Review of the Literature.** Levallois, P. *Environmental Health Perspectives* 110(4):613-8. (2002). <https://ehp.niehs.nih.gov/doi/pdf/10.1289/ehp.02110s4613>
15. **Electric Hypersensitivity and Neurophysiological Effects of Cellular Phones – Facts of Needless Anxiety.** Harma, M. *Scandinavian Journal of Work, the Environment and Health* 26(2):85-86. (2000). http://www.sjweh.fi/show_abstract.php?abstract_id=515

16. **Radiofrequency (RF) Sickness in the Lilienfeld Study: An Effect of Modulated Microwaves?** Liakouris, A. *Archives of Environmental Health: An International Journal*. 53(3):236-238 (1998).
<https://www.tandfonline.com/doi/abs/10.1080/00039899809605701?journalCode=vzeh20>

XI. IMPLANTED MEDICAL DEVICES

1. **Ad Hoc Electromagnetic Compatibility Testing of Non-Implantable Medical Devices and Radio Frequency Identification.** Seidman S., et al. *Biomedical Engineering Online* 12:71. (2013). <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3716957/>
2. **Electromagnetic Interference of Pacemakers.** Lakshmanadoss, U., et al. *Intech* 229-252. (2011). <http://cdn.intechopen.com/pdfs-wm/13783.pdf>
3. **Interference Between Mobile Phones and Pacemakers: A Look Inside.** Censi, F., et al. *Annali Dell'Istituto Superiore di Sanità* 43(3):254-259. (2007).
<http://www.ncbi.nlm.nih.gov/pubmed/17938456>
4. **Electromagnetic Interference on Pacemakers.** Erdogan, O. *Indian Pacing and Electrophysiology Journal* 2(3):74-78. (2002).
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1564060/>
5. **Electromagnetic Interference in Patients with Implanted Cardioverter-Defibrillators and Implantable Loop Recorders.** Sousa, M., et al. *Indian Pacing and Electrophysiology Journal* 2(3):79-84. (2002). <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1564059/>
6. **Radiofrequency Interference with Medical Devices. A Technical Information Statement.** *IEEE Engineering in Medicine and Biology Magazine* 17(3):111-4. (1998).
<http://www.ncbi.nlm.nih.gov/pubmed/9604711>
7. **Cellular Telephones and Pacemakers: Urgent Call or Wrong Number?** Ellenbogen, KA., et al. *Journal of the American College of Cardiology* 27(6):1478-9. (1996).
<http://www.ncbi.nlm.nih.gov/pubmed/8626961>

XII. 5G EFFECTS

1. **Millimeter (MM) wave and microwave frequency radiation produce deeply penetrating effects: the biology and the physics.** Pall, M. *Reviews on Environmental Health*. 10.1515/reveh-2020-0165. (2021) <https://pubmed.ncbi.nlm.nih.gov/34043892/>

2. **Model of Steady-state Temperature Rise in Multilayer Tissues Due to Narrow-beam Millimeter-wave Radiofrequency Field Exposure.** Gajda, Gregory B., et al. *Health Physics* 117(3):254-266. (2019). <https://insights.ovid.com/crossref?an=00004032-201909000-00004>
3. **Untargeted Metabolomics Unveil Alterations of Biomembranes Permeability in HumanHaCaT Keratinocytes Upon 60 HGz Millimeter-Wave Exposure.** Pogam, Pierre., et al. *Scientific Reports* 9(9343).(2019). <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6597695/>
4. **Ocular Response to Millimeter Wave Exposure Under Different Levels of Humidity.** Kojima, M., et al. *Journal of Infrared Milli Terahz Waves* 40:574–584. (2019). <https://link.springer.com/article/10.1007/s10762-019-00586-0>
5. **Millimeter Wave Radiation Activates Leech Nociceptors via TRPV1-Like Receptor Sensitization.** Romanenko, S., et al. *Biophysical Journal* 116(12):2331-2345. (2019). <https://www.biorxiv.org/content/biorxiv/early/2018/11/28/480665.full.pdf>
6. **Systematic Derivation of Safety Limits for Time-Varying 5G Radiofrequency Exposure Based on Analytical Models and Thermal Dose.** Neufeld, E., et al. *Health Physics Society* 115(6):705-711. (2018). <https://www.ncbi.nlm.nih.gov/pubmed/30247338>
7. **Towards 5G Communication Systems: Are There Health Implications?** Ciaula, AD. *International Journal of Hygiene and Environmental Health* 367-375. (2018). <https://www.sciencedirect.com/science/article/pii/S1438463917308143>
8. **5G Wireless Telecommunications Expansion: Public Health and Environmental Implications.** Russell, C.L. *Environmental Research* 165:484-495. (2018). <https://www.sciencedirect.com/science/article/pii/S0013935118300161>
9. **The Human Skin As A Sub-THz Receiver – Does 5G Pose a Danger To It or Not?** Betzalel, N., et al. *Environmental Research* 163:208-216 (2018). <https://www.sciencedirect.com/science/article/pii/S0013935118300331?via%3Dihub>
10. **The Modeling of the Absorbance of Sun-THz Radiation by Human Skin.** Betzalel, N., et al. *IEEE Transactions on Terahertz Science and Technology* 7(5):521-528. (2017). <https://ieeexplore.ieee.org/document/8016593/>
11. **Human Exposure to RF Fields in 5G Downlink.** Nasim, I. et al. *Georgia Southern University* (2017). <https://arxiv.org/pdf/1711.03683.pdf>

12. **The Human body and Millimeter-Wave Wireless Communication Systems: Interactions and Implications.** Wu, T., et al. *IEEE International Conference on Communications* (2015). <https://ieeexplore.ieee.org/document/7248688>
13. **State of Knowledge on Biological Effects at 40-60 GHz.** Drean, Y., et al. *Comptes Rendus Physique* 14(5):402-411. (2013).
<https://www.sciencedirect.com/science/article/pii/S1631070513000480>
14. **Effects of millimeter waves radiation on cell membrane-A brief review.** Ramundo-Orlando, Alfonsina. *Journal of Infrared, Millimeter, and Terahertz Waves* 31(12):1400-1411 (2010).
https://www.researchgate.net/publication/220043219_Review_Article_Effects_of_millimeter_waves_radiation_on_cell_membrane
15. **Human Skin as Arrays of Helical Antennas in Millimeter and Submillimeter Wave Range.** Feldman, Y., et al. *The American Physical Society* 100(12):128102. (2008).
<https://www.ncbi.nlm.nih.gov/pubmed/18517913>

XIII. WILDLIFE AND PLANTS

WILDLIFE

1. **Increased aggression and reduced aversive learning in honey bees exposed to extremely low frequency electromagnetic fields.** Shepherd, S., et al. *PLoS ONE* 14 (10):e0223614 (2019). <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0223614>
2. **Exposure of Insects to Radio-Frequency Electromagnetic Fields from 2 to 120 GHz.** Theilens, A., et al. *Scientific Reports*. 8(3924):1-10. (2018).
<https://www.nature.com/articles/s41598-018-22271-3.pdf>
3. **Anthropogenic radiofrequency electromagnetic fields as an emerging threat to wildlife orientation.** Balmori, A. *Science of The Total Environment* 518-519: 58-60 (2015).
<https://www.sciencedirect.com/science/article/abs/pii/S0048969715002296>
4. **Magnetoreception in birds: the effect of radio-frequency fields.** Wiltschko, R., et al. *Journey of the Royal Society Interface*. 12(103). (2015).
<https://royalsocietypublishing.org/doi/pdf/10.1098/rsif.2014.1103>
5. **Electrosmog and species conservation.** Balmori, A. *Science of the Total Environment* 496: 314-316. (2014). <https://pubmed.ncbi.nlm.nih.gov/25089692/>

6. **Anthropogenic electromagnetic noise disrupts magnetic compass orientation in a migratory bird.** Engels, S., et al. *Nature* 509:353-356. (2014).
<https://pubmed.ncbi.nlm.nih.gov/24805233/>
7. **Drosophila oogenesis as a bio-marker responding to EMF sources.** Margaritis, L, H., et al. *Electromagnetic Biology and Medicine* 33(3):165-189. (2014).
<https://pubmed.ncbi.nlm.nih.gov/23915130/>
8. **A review of the ecological effects of radiofrequency electromagnetic fields (RF-EMF).** Cucurachi, C., et al. *Environment International* 51:116-140. (2013).
<https://www.sciencedirect.com/science/article/pii/S0160412012002334>
9. **Ants can be used as bio-indicators to reveal biological effects of electromagnetic waves from some wireless apparatus.** Cammaerts, MC., et al. *Electromagnetic Biology and Medicine* 33(4):282-288. (2013). <https://pubmed.ncbi.nlm.nih.gov/23977878/>
10. **Exposure to cell phone radiations produces biochemical changes in worker honey bees.** Kumar, N., et al. *Toxicology International* 18(1):70-72. (2011).
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3052591/>
11. **Mobile phone-induced honeybee worker piping.** Favre, D. et al. *Apidologie*. 42:270-279. (2011). <https://link.springer.com/content/pdf/10.1007/s13592-011-0016-x.pdf>
12. **Mobile phone mast effects on common frog (*Rana temporaria*) tadpoles: The City Turned inot a Laboratory.** Balmori, A. *Electromagnetic Biology and Medicine* 29(1-12):31-35. (2010). <https://www.tandfonline.com/doi/abs/10.3109/15368371003685363>
13. **Changes in honeybee behaviour and biology under the influence of cellphone radiations.** Sharma, V. P., et al. *Current Science* 98(10):1376–1378. (2010).
http://www.stralingsarmvlaanderen.org/resources/Reports/Ved-Parkash-Sharma_a49823b5aa.pdf
14. **Briefing Paper on the Need for Research into the Cumulative Impacts of Communication Towers on Migratory Birds and Other Wildlife in the United States.** Division of Migratory Bird Management (DMBM), U.S. Fish & Wildlife Service (2009).
<https://electromagnetichealth.org/pdf/CommTowerResearchNeedsPublicBriefing-2-409.pdf>
15. **Electromagnetic pollution from phone masts. Effects on wildlife.** Balmori, A. *Pathophysiology* 16(2-3):191-199. (2009).
<https://www.sciencedirect.com/science/article/abs/pii/S0928468009000030?via%3Dihub>

16. **A possible effect of electromagnetic radiation from mobile phone base stations on the number of breeding house sparrows (*Passer domesticus*)**. Everaert, J., et al. *Electromagnetic Biology and Medicine*. 26(1):63–72. (2007). <https://pubmed.ncbi.nlm.nih.gov/17454083/>
17. **Can Electromagnetic Exposure Cause a Change in Behaviour? Studying Possible Non-Thermal Influences on Honey Bees – An Approach within the Framework of Educational Informatics**. Harst, W., et al. *Acta Ststemica - IIAS International Journal*. 6(1):1-6. (2006). http://www.next-up.org/pdf/ICRW_Kuhn_Landau_study.pdf
18. **Possible Effects of Electromagnetic Fields from Phone Masts on a Population of White Stork (*Ciconia ciconia*)**. Balmori, A. *Electromagnetic Biology and Medicine* 24(2):109-119 (2005). <https://www.tandfonline.com/doi/abs/10.1080/15368370500205472>

PLANTS

1. **Lessons learned from the application of machine learning to studies on plant response to radio-frequency**. Halgamuge MN, et al. *Environmental Research* 178(108634). (2019). <https://www.sciencedirect.com/science/article/abs/pii/S0013935119304311>
2. **Exposure to 2100 MHz electromagnetic field radiations induces reactive oxygen species generation in *Allium cepa* roots**. Shikha Chandel, et al. *Journal of Microscopy and Ultrastructure* 5(4):225-229. (2017). <https://www.sciencedirect.com/science/article/pii/S2213879X17300809>
3. **Weak radiofrequency radiation exposure from mobile phone radiation on plants**. Halgamuge, M.N. *Electromagnetic Biology and Medicine* 36(2):213-235. (2017). <https://pubmed.ncbi.nlm.nih.gov/27650031/>
4. **Exposure to 915 MHz radiation induces micronuclei in *Vicia faba* root tips**. Gustavino, B., et al. *Mutagenesis* 31(2):187-92. (2016). <https://pubmed.ncbi.nlm.nih.gov/26476436/>
5. **Electromagnetic Fields Act Similarly in Plants as in Animals: Probable Activation of Calcium Channels via Their Voltage Sensor**. Pall, M. *Current Chemical Biology* 10(1): 74-82. (2016). <https://www.eurekaselect.com/141390>
6. **Radiofrequency Radiation Injures Trees Around Mobile Phone Base Stations**. Waldmann-Selsam, C., et al. *Science of The Total Environment*. 572(1):554-569. (2016). <https://www.sciencedirect.com/science/article/abs/pii/S0048969716317375?via%3Dihub>
7. **Reduced growth of soybean seedlings after exposure to weak microwave radiation from GSM 900 mobile phone and base station**. Halgamuge, MN., et al. *Bio Electro Magnetism* 36(2):87-95. (2015). <https://onlinelibrary.wiley.com/doi/abs/10.1002/BEM.21890>

8. **Impacts of radio-frequency electromagnetic field (RF-EMF) from cell phone towers and wireless devices on biosystem and ecosystem? A review.** Sivani, S., et al. *Biology and Medicine* 4(4):202-216. (2012).
https://www.biolmedonline.com/Articles/Vol4_4_2012/Vol4_4_202-216_BM-8.pdf
9. **Adverse Influence of Radio Frequency Background on Trembling Aspen Seedlings.** Haggerty, K. *International Journal of Forestry Research* 2010:836278. (2010).
<https://www.hindawi.com/journals/ijfr/2010/836278/>
10. **Microwave irradiation affects gene expression in plants.** Vian, A., et al. *Plant Signaling and Behavior*. 1(2):67–70. (2006).
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2633881/pdf/psb0102_0067.pdf

XIV. Reports and Articles

1. **Non-ionizing radiation as possible carcinogen.** Gupta, S., et al. *International Journal of Environmental Health Research* 1-25. (2020).
<https://www.tandfonline.com/doi/full/10.1080/09603123.2020.1806212>
2. **Risks to Health and Well-Being From Radio-Frequency Radiation Emitted by Cell Phones and Other Wireless Devices.** Miller, A., et al. *Frontiers in Public Health* 7(223). (2019). <https://www.frontiersin.org/articles/10.3389/fpubh.2019.00223/full>
3. **Computational Simulations of The Penetration of 0.30 THz Radiation into the Human Ear.** Vilaagosh, Z., et al. *Biomedical Optics Express* 10(3). (2019).
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6420278/>
4. **Radiofrequency Electromagnetic Field Exposure and Risk Perception: A Pilot Experimental Study.** Zeleke, B., et al. *Environmental Research* 170:493-499. (2019).
<https://www.sciencedirect.com/science/article/pii/S001393511830255X>
5. **Commentary on The Utility of The National Toxicology Program Study on Cell Phone Radiofrequency Radiation Data for Assessing Human Health Risks Despite Unfounded Criticisms Aimed at Minimizing the Findings of Adverse Health Effects.** Melnick, R. *Environmental Research* 168:1-6. (2019).
<https://www.sciencedirect.com/science/article/pii/S0013935118304973?via%3Dihub>
6. **Pathological Findings Observed in the Kidneys of Postnatal Male Rats Exposed to the 2100 MHz Electromagnetic Field.** Bedir, R., et al. *Archives of Medical Research* 49(7):432-440. (2018). <https://www.ncbi.nlm.nih.gov/pubmed/30600117>

7. **Genotoxic and Carcinogenic Effects of Non-Ionizing Electromagnetic Fields.** Kocaman, A., et al. *Environmental Research* 163:71-79. (2018).
<https://www.sciencedirect.com/science/article/pii/S0013935118300343?via%3Dihub>
8. **Non-Ionizing EMF Hazard in the 21st Century.** Koh, W.J., et al. *IEEE* (2018).
<https://ieeexplore.ieee.org/document/8393832/>
9. **Thermal and Non-Thermal Health Effects of Low Intensity Non-Ionizing Radiation: An International Perspective.** Belpomme, D., et al. *Environmental Pollution* 242(A):643-658. (2018).
<https://www.sciencedirect.com/science/article/pii/S0269749118310157?via=ihub>
10. **Comparison of Radiofrequency Electromagnetic Field Exposure Levels in Different Everyday Microenvironments in an International Context.** Sagar, S., et al. *Environmental International* 114:297-306. (2018).
<https://www.ncbi.nlm.nih.gov/pubmed/29529581>
11. **Mobile-Phone Radiation-Induced Perturbation of gene-Expression Profiling, Redox Equilibrium and Sporadic-Apoptosis Control in the Ovary of Drosophila Melanogaster.** Manta, A., et al. *FLY* 11(2):75-95. (2017).
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5406167/>
12. **World Health Organization, Radiofrequency Radiation and Health – A Hard Nut to Crack (Review).** Hardell, L. *International Journal of Oncology* 51:405-413 (2017).
<https://www.spandidos-publications.com/ijo/51/2/405>
13. **Radiation from Wireless Technology Elevates Blood Glucose and Body Temperature in 40-Year-Old Type 1 Diabetic Male.** Kleiber, C. *Electromagnetic Biology and Medicine* 36(3):259-264 (2017). <https://www.ncbi.nlm.nih.gov/pubmed/28524704>
14. **Effects of Exposure to 2100MHz GSM-like Radiofrequency Electromagnetic Field on Auditory System of Rats.** Celiker, M., et al. *Brazilian Journal of Otorhinolaryngology* 83(6):691-696. (2017). <https://www.ncbi.nlm.nih.gov/pubmed/27865708?dopt=Abstract>
15. **Tree Damage Caused By Mobile Phone Base Stations An Observation Guide.** Breuing, H. (2017). https://kompetenzinitiative.com/wp-content/uploads/2019/08/2017_Observation_Guide_ENG_FINAL_RED.pdf
16. **An Investigation of the Effect of Extremely Low Frequency Pulsed Electromagnetic Fields on Human Electrocardiograms (ECGs).** Fang, Q., et al. *International Journal of Environmental Research and Public Health* 13(11). (2016).
<https://www.ncbi.nlm.nih.gov/pubmed/27886102>

17. **Evaluation of the Protective Role of Vitamin C on the Metabolic and Enzymatic Activities of the Liver in the Male Rats After Exposure to 2.45 GHz of Wi-Fi Routers.** Shekoochi-Shooli, F., et al. *Journal of Biomedical Physics and Engineering* 6(3):157-164. (2016). <https://www.ncbi.nlm.nih.gov/pubmed/27853723?dopt=Abstract>
18. **Exposure of ELF-EMF and RF-EMF Increase the Rate of Glucose Transport and TCA Cycle in Budding Yeast.** Lin, K., et al. *Frontiers in Microbiology* 7(1378). (2016). <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5005349/>
19. **Report detailing the exodus of species from the Mt. Nardi area of the Nightcap National Park World Heritage Area during a 15-year period (2000-2015).** Broomhall, M. *Report for the United Nations Educational Scientific and Cultural Organization (UNESCO)*. (2016) <https://ehtrust.org/wp-content/uploads/Mt-Nardi-Wildlife-Report-to-UNESCO-FINAL.pdf>
20. **Awareness Campaign Against Cell Phone Radiation Hazard: Case Study Oman.** Osmen, W. et al. *Procedia - Social and Behavioral Sciences* 205(9):381-385. (2015). <http://www.sciencedirect.com/science/article/pii/S1877042815050351>
21. **Electromagnetic Energy Radiated from Mobile Phone Alters Electrocardiographic Records of Patients with Ischemic Heart Disease.** Alhusseiny, AH., et al. *Annals of Medical and Health Science Research* 2(2):146-151. (2012). <https://www.semanticscholar.org/paper/Electromagnetic-Energy-Radiated-from-Mobile-Phone-Alhusseiny-Al-Nimer/30272ec2956c9000f6598f739579c1464f2891aa>
22. **Effects of Radiofrequency Radiation on Human Ferritin: An *in vitro* Enzymun Assay.** Fattahi-asl, J., et al. *Journal of Medical Signals and Sensors* 2(4):235-240. (2012). <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3662108/>
23. **The potential dangers of electromagnetic fields and their effect on the environment.** *Council of Europe Parliamentary Assembly Resolution 1815* (2011). <http://assembly.coe.int/nw/xml/XRef/Xref-XML2HTML-en.asp?fileid=17994&>
24. **Public Health Implications of Wireless Technologies.** Sage, C., et al. *PathoPhysiology* 16(2-3):233-46. (2009). <https://www.ncbi.nlm.nih.gov/pubmed/19285839>
25. **Bees, Birds and Mankind: Destroying Nature by ‘Electrosmog’.** Warnke, U. *Competence Initiative for the Protection of Humanity, Environment and Democracy* (2009). <https://www.bemri.org/publications/wildlife-and-plants/1-birds-bees-and-mankind/file.html>

26. **Apoptosis is Induced by Radiofrequency Fields through the Caspase-Independent Mitochondrial Pathway in Cortical Neurons.** Joubert, V., et al. *Radiation Research* 169(1):38-45. (2008). <https://www.ncbi.nlm.nih.gov/pubmed/18159956>
27. **Source of Funding and Results of Studies of Health Effects of Mobile Phone Use: Systematic Review of Experimental Studies.** Huss, A., et al. *Environmental Health Perspectives* 115(1):1-4. (2007). <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1797826/>
28. **Epidemiology of Health Effects of Radiofrequency Exposure.** Ahlbom, A., et al. *Environmental Health Perspectives* 112(17):1741-1753. (2004). <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1253668/>
29. **The Possible Role of Radiofrequency Radiation in the Development of Uveal Melanoma.** Stang, A., et al. *Journal of Epidemiology* 12(1):7-12. (2001). <https://www.ncbi.nlm.nih.gov/pubmed/11138823>
30. **Biological Effects of Amplitude-Modulated Radiofrequency Radiation.** Juutilainen, J., et al. *Scandinavian Journal of Work, the Environment and Health* 24(2):245-254 (1998). <https://www.ncbi.nlm.nih.gov/pubmed/9754855>

The documents contained in this digest are the property of the copyright owners and are reprinted for educational purposes only.

Compilation prepared by Grassroots Environmental Education, Inc., 184 Main Street, Port Washington, New York 11050