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Do EMF and Wireless Devices Endanger Children's Health?

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One of the many goals for wrapping the planet in a pulsating dome of 5G electromagnetic frequencies is to increase the human community's connectivity with each other. We are invited to imagine the spectacular wonder of a single integral system for communication, financial efficiency, international banking and transportation, and a large variety of technological tools at our fingertips to ease life's struggles. There is also a darker specter to monitor every movement of the world's growing population. Consequently, wireless electromagnetic frequency radiation (EMF) and microwave exposure are becoming increasingly more omnipresent and will continue to permeate every aspect of our common daily lives without any escape.

Yet the warnings about the health risks and effects from EMF exposure, especially for vulnerable populations such as children, have been well documented for many decades and go unheeded. Aside from a casual nod by those who are mandated to regulate EMF levels and monitor its adverse risks, the scientific evidence for a crucial cause of alarm continues to mount, and this is especially true for protecting children from unnecessary EMF, which is now indisputable. Federal agency capture by the telecom industry and the developers of wireless, microwave and other EMF producing technologies have thwarted every effort to properly regulate this technology.

Children are exposed to EMF from various wireless devices, such as smartphones, tablets, and Wi-Fi routers. Although these devices generally comply with FCC guidelines, there are serious concerns about the cumulative effects of exposure, particularly for children who use wireless devices extensively. Studies show that children's exposure to EMF from wireless devices far exceeds recommended safety limits, especially when devices are held close to the body for prolonged periods.

By examining available research studies conducted by prominent scientists and institutions

to better understand the crisis facing children who are increasingly being exposed to EMF can guide parents and communities to take necessary precautions to protect our children.

Perhaps the most important study investigating the impact of EMF emissions from electronic devices on adolescent social and brain development is the multi-institutional Adolescent Brain Cognitive Development Study, which enrolled 10,000 children and followed them for a decade. Those who spent the most hours per day on cell phones, computers and other wireless items had the highest rate of rapid thinning of the cortex, which is associated with premature aging.

Cancer Risk

A dozen years ago, the International Agency for Research on Cancer (IARC) classified electromagnetic fields as "possibly carcinogenic to humans." Research conducted by prominent scientists, such as Lennart Hardell and Michael Carlberg in Sweden, has identified links between long-term exposure to electromagnetic fields and an increased risk of childhood leukemia. These studies analyzed data from children exposed to various sources of electromagnetic radiation, including power lines and wireless devices. Since then other studies have confirmed that children living in the proximity of overhead high-voltage power lines had a higher risk of developing leukemia, further supporting EMF's potential carcinogenic effects. This is not only true for thermal radiation, but also for non-thermal low intensity non-ionizing radiation now believed to be contributing to the rising incidence of brain cancers, notably glioblastomas, in children and adolescents across developed nations.

Government regulators fail to address this danger. The Environmental Health Trust (EHT) notes that government regulations for wireless cell phone use were evaluated upon the anatomical basis of a 220-pound man's head. Children's heads are notably smaller, their skulls are thinner, and therefore children "can absorb up to ten times the radiation in the bone marrow of their skulls than adults." A University of Utah analysis reported that EMF exposure increases by a compounding rate of 10-15 percent for every millimeter closer to a mobile phone's antenna. EHT criticizes the FCC cell phone radiation standards for ignoring these "unique vulnerabilities" in children's anatomy as well as pregnant women. Younger brains will also proportionally absorb more radiation into the eye and the brain's grey matter.

Another carcinogenic risk is electronic radiation's disruption of stem cell activity. Throughout the course of their development, children have more active stem cells than adults. Stem cells are far more sensitive to microwave radiation than are differentiated cells. This makes children more susceptible to DNA double strand breaks contributing carcinogenic mutations.

Neurological and Cognitive Effects

EMF's deleterious effects on the nervous system are well documented. Despite oxygen's crucial role in biological reactions, oxygen can also contribute to toxic by-products known as reactive oxygen species (ROS), which damage proteins, lipids and DNA. However the body's antioxidant defense system keeps radical oxygen under control. A Turkish review of the medical literature shows that several studies report that EMF exposure results in oxidative stress in different tissues, cellular DNA and will increase free radical concentrations.

Early experimental studies conducted by Nora Volkow and her colleagues showed that exposure to cell phone radiation can alter brain activity in regions closest to the antenna.

These studies utilized brain-imaging techniques to measure changes in brain metabolism and neuronal activity after exposure to electromagnetic fields. Consequently quantifying abnormal changes was very precise. The clinical significance of Volkow's findings raised concerns about the potential neurological effects of long-term exposure to electromagnetic radiation, which have since been validated in multiple further studies.

Separate studies by the University of Southern California and UCLA suggest an association between prenatal exposure due to maternal mothers' cell phone radiation and neurodevelopmental disorders in their children afterwards. These studies highlight the critical importance of considering the potential risks of electromagnetic radiation during the crucial stages of child development. A Yale University mouse study found that pregnant mice when exposed to cell phone signals give birth to animals with hyperactivity and impaired memory.

Genetic Damage

There is a large body of animal research confirming EMF's adverse effects on genetic expression and DNA integrity. However, more clinical trials on humans need to be conducted to bring the crisis to greater public attention. EMF's long term effects on the male and female reproductive systems of pre-pubescent children needs to be investigated more thoroughly. Given the rapid rise of gender dysphoria beginning in earlier ages, it is incumbent to better understand EMF's impact on child development now that wireless devices are being used daily. Interruption of the reproductive system's metabolomics from mobile phone EMF exposure has a broad range of adverse effects. These include decreases in sperm motility, protein synthesis disorders, abnormal nitric oxide levels and antioxidant disruption in germ cells. Research also indicates that EMF exposure affects calcium ion channels, potentially disrupting intracellular calcium signaling, which plays a crucial role in cellular processes

Sleep Disturbances

Sleep is crucial for the proper physical and cognitive development of children. However, exposure to electromagnetic fields from wireless devices may disrupt sleep patterns in children. A 2010 study found that exposure to radiofrequency EMF from mobile phone base stations was associated with sleep disturbances. Similarly, another study reported an association between exposure to electromagnetic fields from wireless devices in the home and sleep disturbances in adolescents.

Education and Awareness

Public activism needs to pressure child health associations and government agencies to revise regulations regarding EMF exposure limits. This includes establishing specific guidelines for non-ionizing radiation, considering cumulative exposure effects, and incorporating research findings on potential long-term health risks associated with EMF.

Given the increasing data being gathered as research continues to identify EMF's effects on human biology, the precautionary principle, critically for children, should be applied. Once the technology is developed to dramatically lessen radiation exposure, it is essential to limit childhood exposure and especially in schools and bedrooms where children spend a substantial amount of time during every 24-hour cycle.

Organizations like the American Academy of Pediatrics recommend limiting children's exposure to wireless devices. Although the Academy emphasizes the importance of educating parents, teachers, and healthcare professionals about EMF's risks, no notable funding has been spent to make these health concerns a national emergency. Of course, schools and parents can adopt strategies such as wired internet connections, reducing screen time, and providing distance from wireless devices to minimize children's EMF exposure, however, this requires a national educational campaign.

Manufacturers are making efforts to develop low-radiation devices, such as cell phones with reduced Specific Absorption Rate (SAR) values. Unfortunately, there has not been sufficient regulatory pressure on telecom corporations to make major advancements. Other research has focused on exploring electromagnetic shielding to design techniques to reduce exposure risks without compromising technological functionalities. Again, innovation of electronic devices continues to trump public health.

When we reflect upon our politicians' and institutions' repeated claims that they care about the health and well-being of children, we need to peer behind the words to expose the double-speak. Today, the most aggressive voices want to persuade us that the government is a more responsible parent than children's own biological kin. Only recently are parents waking up to push back against this collective social conditioning. However, it required over two years of passive obedience for parents to realize they were sheepishly following unjustified government demands to close schools, quarantine children, and mandate mask-wearing and social distancing. When will parents realize they maybe innocently contributing to their kids' delayed physical, mental and emotional development by giving them free reign on their mobile phones, laptops, tablets and other EMF-emitting devices? This is not an issue based upon class and prestige. Rich or poor, politically left or right, no child is excused from EMF risks. Since the regulatory officials at the EPA and FCC are fully compromised by the private telecom and wireless industries, parents must assume the responsibility to monitor and control their children's exposure to EMF radiation.

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