CHE Collaborative for Health & Environment

Webinar Highlights

Health Hazards of Wireless Technologies

Wireless technologies, including cell phones, wireless internet, and Bluetooth devices, have become ubiquitous in our lives. Most adults in the US own a cell phone, and cell phone use is widespread among children and adolescents. New cell antenna sites are being deployed widely. Wireless technologies and equipment designs also change rapidly.

In this webinar, **Dr. Joel Moskowitz** provided a brief overview of selected recent studies on health hazards of these wireless technologies. He discussed a meta-analysis of case-control studies of cell phone use and tumor risk, as well as the state of the evidence on brain cancers, thyroid cancers, and other health hazards. This webinar was designed to provide a brief introduction to a subset of the recent scientific evidence, with a focus on cancer.

Featured Speaker: Dr. Joel Moskowitz, Director of the Center for Family and Community Health, School of Public Health, UC Berkeley, speaking September 25, 2024.

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The Problem

Wireless technologies, such as those used by cell phones, use radiofrequency radiation (RFR) to send signals. Despite their ubiquitous use, the safety of the kind of low-energy RFR that these devices use has not been established. In fact, the International Agency for Research on Cancer (IARC) has classified radiofrequency electromagnetic fields as "possibly carcinogenic to humans" (IARC Group 2B).

A study by the National Toxicology Program (NTP) completed in 2018 found that exposure to high levels of RFR was associated with the following:

- Clear evidence of tumors in the hearts of male rats
- Some evidence of tumors in the brains of male rats

- Some evidence of tumors in the adrenal glands of male rats

For female rats and male and female mice, the results were unclear. A follow-up NTP study found that exposure to RFR is associated with DNA damage in both mice and rats. The NTP studies did not find that the results could be directly applied to humans. However, the findings do call into question the idea that RFR does not pose any health risks.

Other studies presented by Dr. Moskowitz found the following:

- Significant evidence of oxidative stress from low-intensity RFR.
- Increased tumor risk from heavy, long-term cellphone use, including increased risk of two types of brain tumors.
- Various health risks associated with cell phone use, including reproductive health effects.

The exposure limits for RFR set by the Federal Communications Commission are designed to protect people from short-term heating risks. They are not designed to protect people from health effects of longer-term exposures below the levels that heat tissue.

Recommendations

New, lower exposure limits are needed to make wireless devices safer. These limits should be based on the biological effects (such as documented changes in DNA biochemistry) of RFR. More resources are needed for this research to determine what types and levels of wireless radiation exposure will minimize health hazards. Dr. Moskowitz stressed that until research establishes those safe levels, governments should impose a moratorium on technologies that increase our wireless radiation exposure, such as 5G.

Dr. Moskowitz explained that manufacturers of wireless devices have an opportunity to prioritize safety at the design phase. For example, software-based solutions can reduce RFR emissions. Hardware changes to antenna designs could also reduce people's exposures.

"It's time for the telecom industry to compete on product safety."

In the absence of protective regulatory standards, Dr. Moskowitz shared his tips for personal safety:

- Minimize your use of cell phones and cordless phones; use a landline whenever possible.

- Keep your phone away from your head and body. Store your phone in a purse or backpack rather than your pocket. Use a wired headset or speakerphone for calls. Even a small increase in distance can substantially reduce your exposure.
- Because cell phones are programmed to increase radiation when reception is poor, use your phone only when the signal is strong. Avoid using it in an elevator or in a vehicle as metal structures interfere with the signal.
- Turn off wireless devices at bedtime, including your Wi-Fi router.

To Find Out More

- Watch the September 25, 2024 webinar: Health Hazards of Wireless Technologies: What do we know now?
- Read the presentation slides: Health Hazards of Wireless Technologies: What do we know now?
- Visit the speaker's website for more information: Electromagnetic Radiation Safety
- Read more on the safety tips: Tips to Reduce Your Wireless Radiation Exposure
- Read the NTP's RFR studies fact sheet: Cellphone Radio Frequency Radiation Studies
- Read what the CDC says about the health concerns: Facts About Cell Phones and Your Health

About the Speakers

Joel M. Moskowitz, PhD is the Director of the Center for Family and Community Health, School of Public Health, UC Berkeley. Dr. Moskowitz has conducted research on disease prevention programs and policies for more than 40 years, most recently focusing on adverse health effects of cell phone and wireless radiation. In 2009 he served as the senior author on a hallmark paper reviewing research on mobile phone use and increased brain tumor risk published in the Journal of Clinical Oncology. He has disseminated research related to wireless technology, public health, and policy since 2009. He is a member of the International Commission on the Biological Effects of Electromagnetic Fields (ICBE-EMF) and an advisor to the International EMF Scientist Appeal signed by more than 250 scientists who published peer-reviewed research on EMF and biology or health. His Electromagnetic Radiation Safety website is a valuable resource for scientists, journalists, and the public.