What You Need to Know About Wireless Radiation and Your Baby

The BabySafe Project

INTRODUCTION

The beautiful and awe-inspiring process by which a few cells develop into a new life is truly miraculous. As if following some invisible instructions, the intricate and complex steps for the creation of a new life unfold, forming delicate organs and vital systems and making billions of important connections and patterns in the brain alone.

Your body is the first home for this new life, and pregnancy triggers some instructions for you as well. Your body provides a protected and warm space for your baby to grow, sharing important nutrients and preparing you to nourish your baby beginning immediately after birth.

Protecting your baby from any possible harm is a strong and natural instinct. Every stage of your baby's development will be affected by the choices you make and the environments in which you live. And those choices you make are at the same time becoming more difficult and more important.

Today, scientists and medical professionals around the world are working to understand more about how a developing human life is affected by environmental exposures in the food we eat, the air we breathe, the water we drink and the surroundings in which we live and work. Identifying and avoiding all of them can seem overwhelming, but knowing the risks and the steps you can take to reduce your exposure is something you can do.

While there are many things yet to be discovered about the important relationship between your developing baby and your own environmental exposures, we do know that your body can provide only a certain degree of protection. Another thing we know is that the impact can depend on the amount and timing of the exposure.

One focus of current research is wireless radiation, also referred to as microwave radiation or radio frequency radiation (RFR). Wireless radiation is emitted by the myriad of wireless devices we encounter every day. It was once thought to be relatively harmless. Decades ago, when exposure thresholds were established, the thermal or heating effects on human tissue were the main concern.

However, we now know that wireless radiation can cause non-thermal biological effects as well, including damage to cells and DNA, even at low levels. The International Agency for Research on Cancer (IARC) of the World Health Organization (WHO) recently classified wireless radiation as possibly carcinogenic to humans, and numerous animal studies have shown neurological effects, including behavioral disorders, that may lead to long-term health consequences. All of this suggests that taking certain precautions around wireless radiation is appropriate for our most vulnerable populations, including pregnant women.

"It is so simple to move your cell phone away from your abdomen when you're pregnant. Why not do it? There's essentially no downside to being cautious and protecting your baby."

- Dr. Hugh Taylor, Yale University

Generally speaking, *proximity* is the most important factor in determining the amount of wireless radiation to which you and your baby are exposed. Radiation levels fall off dramatically as you distance yourself from the source.

Reducing Your Exposure to Wireless Radiation

• Avoid carrying your cell phone on your body (e.g. don't carry it in a pocket or bra).

• Avoid placing your cell phone, wireless laptop or tablet on your abdomen. Don't talk or text while holding a phone against your body.

• Talk on speaker setting or with an "air tube" headset.

• Avoid using your cell phone in cars, trains and elevators.

• Avoid using cordless phones (which also expose you to wireless radiation), especially where you sleep. Corded phones do not emit RFR.

• Streaming videos and playing games results in higher levels of RFR exposure. Download and then view or play with the device in "airplane" mode. Download your email and then disconnect from WiFi, allowing you to read and respond without being exposed.

• Whenever possible, connect wired cables to a router or modem and turn off the WiFi feature on the router, modem and your personal device(s).

• Unplug your home WiFi router when not in use (e.g. at bedtime).

• Avoid prolonged or direct exposure to WiFi routers at home, school or work. If your job requires you to use a computer, position yourself so that you are not sitting close to the router and not between the router and your computer.

• If your home or apartment or close neighbor has a wireless utility meter (i.e. a "smart" meter), sleep in a room as far away from it as possible.

MORE ABOUT WIRELESS RADIATION

Radio frequency waves have been used for more than a hundred years to carry signals from transmitting towers to distant receivers. This technology has informed and entertained millions of people around the world.

However, the technology offered today by the wireless industry puts powerful transmitters as well as receivers much closer to users of all ages than ever before. This two-way communication, and the increased radiation needed to support it, is reason for concern. Indeed, manufacturers of wireless devices warn consumers to keep their phones, tablets, baby monitors or other devices away from their bodies.

Consumer demand for connectivity everywhere has resulted in the installation of many more powerful local wireless transmitters and receivers, and now hundreds of thousands of rooftop, pole-mounted and tower transmitters (antennas) are placed in close proximity to private homes, apartments, schools, office buildings, retail and recreation areas. "Free WiFi" is commonly advertised to attract customers at bars, restaurants, hotels and coffee shops. Wireless routers in public spaces are very powerful because they are intended to power many laptops or tablets simultaneously.

This ubiquitous and ever-growing wireless world that we live in means that wireless radiation is all around us. But you can still make some personal choices that can reduce your exposure. As mentioned previously, keeping a safe distance from transmitters or antennas and keeping your personal wireless devices away from your body is relatively easy to do. The amount of time you spend using wireless devices is also important. Remember that exposure adds up over time.

We hope that you will take the time to learn more about wireless radiation by visiting our website, www.BabySafeProject.org.

"Most pregnant women understand that they should stay away from cigarette smoke, avoid alcohol and be careful about eating potentially contaminated foods of any kind. The weight of evidence clearly supports the need to protect pregnant women from wireless radiation exposures as well."

- Dr. Devra Davis, University of California at Berkeley

MORE ABOUT THE SCIENCE

A recent study (Aldad, et al 2012) conducted at Yale University found that pregnant laboratory mice exposed to ordinary cell phone radiation produced offspring that were more hyperactive and had poorer memories compared to a control group that was not exposed.

Dr. Hugh Taylor, Chair of the Department of Obstetrics, Gynecology and Reproductive Sciences at Yale University School of Medicine and his team of researchers concluded that cell phone radiation had damaged neurons in the prefrontal cortex of the brain.

The work of the Yale researchers followed a steady progression of scientific studies that demonstrated health and behavioral effects from wireless radiation. Twenty years ago, a review of the scientific literature on radiofrequency/microwave radiation conducted by the U. S. Air Force Materiel Command (Bolen 1994) concluded that "behavior may be the most sensitive biological component to RF/Microwave radiation." Scientists at the University of Washington demonstrated DNA breaks in brain cells of rats resulting from exposure to microwave radiation (Lai, et al 1995).

Over the next decade, numerous studies were conducted regarding the safety of RF radiation with varying results, and controversy remained about the relevance of animal studies to humans.

Of particular importance was the work of researchers at the University of Kentucky where they were able to show how exposure to wireless radiation can damage or even destroy brain cells (Zhao, et al 2007). Researchers in Samsun, Turkey published findings that rats prenatally exposed to cell phone radiation developed impaired learning and also showed damage to those parts of the brain involved in memory and learning (Inkinci, et al 2013). In yet another study, rats prenatally exposed to wireless radiation also had damaged spinal cords (Odaci, et al 2013).

Regarding human impacts of wireless radiation, UCLA researchers (Divan, et al 2008) studied 13,000 mothers and children and found that prenatal exposure to cell phones was

associated with a higher risk for behavioral problems and hyperactivity in children.

Scientists continue to conduct research on the human impact of wireless radiation exposure. While we wait for the scientific process to provide us with a deeper understanding of this issue, and for government agencies to adopt appropriate exposure thresholds, a precautionary approach to exposures, especially during pregnancy, seems warranted.

For a listing of scientific studies regarding wireless radiation and its biological effects, please visit our web site BabySafeProject.org.

Government agencies, professional societies and public health organizations around the world calling for further research on wireless radiation include:

United States Environmental Protection Agency (EPA)
American Academy of Environmental Medicine (AAEM)
National Cancer Institute (NCI)
American Academy of Pediatrics (AAP)
American Cancer Society (ACS)
National Institute of Environmental Health Sciences (NIEHS)
International Agency for Research on Cancer (IARC)
International Commission for Electromagnetic Safety (ICES)
European Parliament and European Environment Agency (EEA)

"Current FCC standards do not account for the unique vulnerability and use patterns specific to pregnant women and children. It is essential that any new standards for cell phones and other wireless devices be based on protecting the youngest and most vulnerable population to ensure they are safeguarded throughout their lifetimes."

- American Academy of Pediatrics 2013

Joint Statement on Pregnancy and Wireless Radiation

We join together as physicians, scientists and educators to express our concerns about the risks that wireless radiation poses to pregnancy and to urge pregnant women to limit their exposures.

We recognize that the exquisite systems that direct the development of human life are vulnerable to environmental insults, and that even minute exposures during critical windows of development may have serious and life-long consequences.

We know that the scientific process demands a thorough and exhaustive examination of the possible impact of wireless radiation on health; however, we believe substantial evidence of risk, rather than absolute proof of harm, must be the trigger for action to protect public health.

We call on the research community to conduct more studies to identify the mechanisms by which a fetus could be affected by wireless radiation. We call on our elected leaders to support such research and to advance policies and regulations that limit exposures for pregnant women. We call on industry to implement and explore technologies and designs that will reduce radiation exposures until such research is carried out.

We affirm our role as health and science professionals to inform the public about the potential dangers associated with early-life exposures to wireless radiation, and invite all professionals engaged in obstetric, pediatric, and environmental health advocacy to join us in our quest to ensure the safety and health of future generations.

For a current list of medical doctors, researchers and health advocates who have signed the Joint Statement, please visit BabySafeProject.org

For more information about pregnancy and wireless radiation and to obtain additional copies of this brochure please visit

BabySafeProject.org

#KnowYourExposure

The BabySafe Project is a joint initiative of
Grassroots Environmental Education
and
Environmental Health Trust

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