

Sounding the Alarm About Wireless Radiation and 5G

by the [Children's Health Defense Team](#)

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Science on the health risks of wireless radiation has been [accumulating for decades](#). Heedless of the dangers, government and the telecommunications (“telecom”) industry continue to propagate wireless technologies and infrastructure, helped along by [captive regulatory agencies](#) and successful efforts—including legislative—to silence public debate about health effects.

At the same time, media campaigns and apps designed to addict the public—and especially children—have been effective in generating consumer enthusiasm. As a result, the wireless [transformation](#) has been hugely profitable. Wireless devices now outnumber Americans, and a majority of the

population [prefers mobile phones](#) to “other popular products and activities” such as chocolate and dating. Since the fourth generation of wireless/cellular technology (4G) rolled out in 2010, there has been a [73-fold increase](#) in mobile data use.

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With the buildout of 5G infrastructure, the tide of public opinion may belatedly be turning. While telecom and satellite companies proceed with [“aggressive” and “unlawful”](#) plans to [“densify”](#) existing 4G networks and establish a “bedrock” for 5G networks, communities around the world are starting to raise questions. Among those sounding the alarm about 5G’s unprecedented saturation of the planet with wireless radiation are those who recognize that existing 2G, 3G and 4G telecommunications networks already are far from benign.

Safe technology advocate and anti-5G activist [Dafna Tachover](#) an attorney and MBA who has a technology background from her service as a telecommunications and computer officer in the Israeli Defense Forces—knows whereof she speaks. Like many other individuals, Dafna developed debilitating microwave sickness from wireless technology in 2009, even before 4G. Dafna is passionate about protecting children and is [joining forces](#) with Children’s Health Defense to direct CHD’s Stop 5G & Wireless Harms Project.

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Blanketing the Planet

In the U.S. alone, telecom companies intend to have over [800,000](#) 5G base stations (deceptively called “small cells”) in place by 2026, layered on top of more than 320,000 cell sites already in operation (as of 2018). In [dense urban](#)

[areas](#), some of the new infrastructure will make use of the extremely high-frequency millimeter wave portion of the microwave frequencies spectrum, not previously commercialized. In addition, a projected [50,000 satellites](#) will provide 5G [from space](#). Proponents intend this [unprecedented](#) space-based and ground-based infrastructure to support—within a few short years—an estimated [one trillion](#) transmitting objects as part of the Internet of Things (IoT).

A few courageous members of Congress have pointed out that there is [zero evidence](#) that the headlong rush to deploy small cells on every street corner is safe—and there is considerable scientific and human evidence to the contrary. Decades ago, studies on [WWII radar workers](#) documented health impairments associated with wireless radiation, giving rise to the term [microwave sickness](#). Following “prolonged exposure to low-intensity microwave radiation,” radar workers reported [symptoms](#) such as “headaches, anxiety, sleep disturbances, fatigue, and difficulty in concentrating and . . . changes in the cardiovascular and central nervous systems.” (In the current era, some refer to this condition as [electrosensitivity](#).)

A literature review dating back to 1971 identified over 2,300 documents describing [17 different categories](#) of biological and health effects linked to manmade radio-frequency and microwave radiation—with some based on levels of radiation exposure well below the alleged safety threshold. Today, there are [thousands of peer-reviewed studies](#) reporting damage to human and animal health and the environment.

Microwave Sickness

Raised in Israel, Dafna Tachover was an “early adopter” and self-described “gadget person” (“Some women like shoes; I liked gadgets”). In the early 1990s, Dafna’s service with the

Israeli military involved managing the computer center of the military's operations center and headquarters, which furnished her with a technical understanding of wireless and wired infrastructure. Ever in the technological vanguard, Dafna was, to the best of her knowledge, the second person in the Israeli military to have a laptop.

In 2009, having moved to the U.S., Dafna began experiencing "weird symptoms" after purchasing a new laptop. The symptoms were concerning enough that she swapped out the laptop five times in three weeks—but each one produced more problems, including tingling, brain fog and heart palpitations. Upon researching her symptoms, Dafna learned about microwave sickness and discovered that she was far from alone in experiencing it. Within six months, Dafna's health picture had deteriorated to such an extent that she could no longer be in the vicinity of any cellular or wireless device or cellular reception. Only after spending three years in a remote cabin in the New York Catskills was she able to rejoin the world, armed with a strong determination to raise awareness and advocate for safer technologies, particularly on behalf of children.

Dafna's involvement with 5G started on July 14, 2016 at the Federal Communications Commission's (FCC's) offices, when the FCC announced 5G. That same week, she launched her efforts to stop 5G, including lobbying in Congress. In the years since, she has engaged at the federal, state and municipal levels while also working to educate citizens and support communities opposed to 5G around the country. Dafna says, "After a few months of lobbying in Washington, DC, I realized the extent of the telecom industry's power and recognized that we must create a strong and large grassroots movement to have a chance of succeeding." She adds, "Children's Health Defense has already done a remarkable job of activating the grassroots—hopefully together we can grow the movement opposed to 5G and be proactive in stopping the 5G insanity."

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Children at Risk

Prior to her involvement with 5G in 2016, Dafna's advocacy focused on the issue of Wi-Fi in schools due to the unprecedented amount of exposure to wireless radiation and devices in the school environment. Dafna's first step as an activist was to submit a Supreme Court case against the government in Israel to ban Wi-Fi in Israeli schools and use wired Internet networks instead. As a result of the case, Israel's government became the first to adopt some limitations on the use of Wi-Fi in schools.

Dafna notes that children are exquisitely [vulnerable](#) to the effects of microwave radiation, with thinner skulls that are less able to block radiation, smaller brains (which allow radiation to get to more parts of the brain) and still-developing nervous systems. Children's cells also divide [twice as fast](#) as adults', increasing the chances of mutations associated with cancer. In addition, radiation disrupts the [blood-brain barrier](#), allowing toxins (such as components of vaccines) to get into the brain.

Cancer rates in young people have steadily [increased since 2001](#). Among 15-39 year-olds—reflecting the places where young people hold or carry their cell phones—the [most commonly occurring cancers](#) are cancers of the breast, thyroid, brain and testes, and [colorectal cancer](#) is one of the leading causes of cancer deaths in young adults. Swedish studies indicate that initiation of mobile phone use before age 20 significantly raises children's risk of developing [malignant brain tumors](#).

In 2018, the U.S. government's National Toxicology Program (NTP) reported findings from its [\\$25 million study](#) of cell

phone radiation, citing evidence for an association with previously rare cardiac tumors, brain cancers and adrenal cancers—as well as birth defects and precancerous tissue damage. Shortly thereafter, the Italy-based Ramazzini Institute published a [study](#) showing cancer-causing effects associated with cell towers that were “consistent with and reinforce the results of the NTP study.” While the NTP study examined radiation exposure levels comparable to the levels emitted by cell phones, the effects identified in the Ramazzini study were detectable at levels up to 6,000 times lower. In [late 2019](#), the NTP published additional results showing that cell phone radiation can break DNA, confirming studies from as long ago as [1995](#) showing that DNA breaks result not just from ionizing radiation (such as X-rays) but also from non-ionizing microwave radiation in the 2.45 GHz frequency used for Wi-Fi.

Dafna asserts that much of what gets labeled as “ADHD” (attention deficit hyperactivity disorder) in children is actually microwave sickness, which she views as a “spectrum” condition. These assertions are bolstered by [research](#) as well as reports by parents and doctors of ADHD or autism symptoms lessening or disappearing as soon as a family disconnects their Wi-Fi and other wireless devices. A pediatrician told Dafna that after one set of desperate parents turned off the Wi-Fi just at night, their nonverbal autistic son started to speak within two weeks.

Wireless radiation exposure is also linked to numerous neuropsychiatric symptoms that are at epidemic levels in young people, including anxiety and depression.

In conversations with children about what it is like to be in a school Wi-Fi environment, seven-year-olds have told Dafna that they alternate between feeling exhausted and hyper—likening themselves to an uncontrollable “remote control car.” A nine-year-old said that when he is in a place with Wi-Fi, his heart feels like it is about to explode like a “volcano”; another seven-year-old reported feeling as if “ants

are walking on her head.” In addition to these sensations, [common symptoms](#) of wireless radiation toxicity experienced by children include nosebleeds, headaches, noise sensitivity, nausea, exhaustion and cognitive problems such as poor recall and difficulty concentrating. Wireless radiation exposure is also linked to numerous [neuropsychiatric symptoms](#) that are at epidemic levels in young people, including anxiety and [depression](#).

In addition to concerns about childhood cancers, Dafna notes that children’s exposure to wireless radiation through technologies such as Wi-Fi and cell phones has serious implications for their future fertility. [Male infertility](#) accounts for an estimated 40% to 50% of total infertility. A 2009 U.S. study that linked cell phone radiation to oxidative stress in semen concluded that “keeping the cell phone in a trouser pocket in talk mode may . . . [impair male fertility](#).”

An Israeli study conducted with 106 men referred for semen analysis, [published in 2015](#), found that men who used their cell phones for more than one hour per day and who talked during device charging had significantly higher rates of abnormal semen concentration, as did men who held their phones less than 20 inches from their groin. Larger studies reveal that sperm counts [have fallen by more than 50%](#) in many wealthy nations over the past few decades, and especially in the past decade.

Safer technologies exist—and it is time to pressure government and industry to use them.

Reducing Exposure

Although 5G and other forms of wireless radiation can seem like problems too overwhelming to solve, Dafna notes that there is much that parents can do to reduce their own and their children’s exposure in the home environment. Eliminating exposures during sleep (when the body repairs itself) is

particularly critical. Measures parents can take include:

- Disabling all wireless devices at night (or even better, using wired connections during the daytime instead of Wi-Fi)
- Getting rid of cordless phones (which are equivalent to having a cell tower in the home)
- Getting rid of baby monitors (which are microwave transmitters) and avoiding “smart” baby diapers
- Opting out of “smart” meters
- Learning how to take readings of RF radiation in the home using a simple test meter
- Hiring a building biologist (or other EMF mitigation specialists) to lessen or resolve problems in the home
- Reducing cell phone use and using it with an Ethernet connection when at home

The Power Grab

Reflecting on her 5G efforts since 2016, Dafna states that “It has been a long three and a half years’ effort, with a big learning curve.” Sifting through the 5G jargon and promotion, Dafna believes, at bottom, that 5G represents a “power grab for our public rights-of-way” designed to give the telecom industry unlimited access to those rights-of-way and enabling it to put antennas “anywhere and everywhere.” Most of the new antennas being installed are 4G technology—but with the 5G buildout, there will be many more, and closer together. This, in turn, will facilitate more central control as well as an IoT-generated [financial windfall](#) that is already making industries salivate. However, a growing segment of the public is learning not to fall for the hype. Safer technologies exist—and it is time to pressure government and industry to use them.