

Let's Protect Our Children

The rapid proliferation of wireless devices in classrooms has brought increasing scrutiny of potential health effects of near-constant exposure to radiofrequency (RF) radiation, particularly for children. This concern stems from multiple factors:

- All wireless devices emit RF radiation.
- Multiple devices increase radiation exposure.
- Wireless devices are not tested in current use patterns.
- Children are uniquely vulnerable to RF radiation.
- FCC exposure guidelines are outdated and inadequate.

A large and growing body of published, peer-reviewed, independent studies demonstrate that chronic exposure to RF radiation can lead to non-thermal biological changes, even at levels well below current government standards. These changes can, in turn, initiate significant health problems that may not be evident for years. The American Academy of Pediatrics has stated, "*Current FCC standards do not account for the unique vulnerability and use patterns specific to pregnant women and children.*"

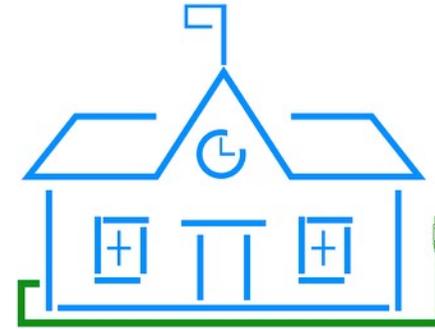
Scientists and medical professionals don't yet have the tools to predict how RF radiation will affect an individual child. *Which child will suffer acute neurological symptoms or develop cancer decades later? Which child will experience reproductive problems later in life?*

All of these outcomes have been associated with exposure to RF radiation. The question is, *how much risk are we willing to take with the children in our care, and is that decision ours to make?*

The TechSafeSchools project is designed to bring the latest science and important legal and technical information to school officials, IT personnel and consultants, teachers and parents. For more information about this issue including scientific studies, legal analysis, mitigation techniques and the safe and cost-effective solutions that are available, please visit our website, **TechSafeSchools.org**.

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Questions and Answers About Wireless Radiation in Schools

Q. Is radiofrequency (RF) radiation from cell phones, tablets, laptops and Wi-Fi routers safe for children?

A. No. Recent peer-reviewed studies have confirmed that exposure to RF radiation can increase the incidence of cancer, neurological disorders and oxidative stress that can lead to changes in DNA. Children are at higher risk from RF radiation because of their thinner skulls, their rapidly changing physiology and their vulnerable developing nervous systems. Children also have many more years to live and thus to develop health problems from longer lifetime exposures to RF radiation.

Q. Our IT consultant assures us that all of our equipment meets current FCC human exposure guidelines. Why should we be concerned?

A. The current FCC human exposure guidelines were developed by engineers back in the 1980s, and adopted by the FCC in 1996. The guidelines are based exclusively on thermal (or tissue heating) effects on a full-sized adult male mannequin. Non-thermal biological effects (e.g., neurological impacts, cancer or DNA changes) are not considered.

Since then, hundreds of peer-reviewed studies have shown serious biological changes at non-thermal levels well below those guidelines. Nevertheless, the wireless industry has lobbied hard to keep them in place. In short, FCC guidelines are completely inadequate to protect our children, and compliance with those guidelines should not be considered proof of safety.

Q. Why are wireless radiation levels higher in schools than elsewhere?

A. Many modern classrooms are equipped with “Enterprise Mesh” wireless networks. These powerful commercial systems are factory-set for maximum performance, and typically emit much higher levels of power than are required for student use.

In addition, students working with wireless devices in groups are exposed not only to the radiation from *their* device, but also from those devices being used by others around them. In a “mesh” system, each device becomes a relay transmitter, sending and receiving signals not only for the user, but for other users nearby. This can improve the functionality of the network, but it also increases the amount of radiation some children are receiving.

Q. Are there safer technology solutions?

A. Yes. Hardwired internet connections eliminate the risk of radiation exposure while having the added benefit of being more secure and up to 100 times faster than wireless. While hardwired networks are best, wireless systems can be adjusted to reduce transmit power and beacon interval rate from routers and access points. These adjustments can easily be made by school IT professionals from the controller or software. Schools can also limit the operational time of wireless networks.

Q. Is it difficult to install hardwired systems?

A. No. Most schools already have Ethernet cable installed in or near classrooms. (All wireless systems rely on a hardwired infrastructure to carry signals back and forth to the internet.) Amortized over time, wired systems are actually cheaper than wireless. They are also future-proof, whereas wireless systems may need to be replaced or upgraded as technology changes. Unfortunately, many schools have decided – or been convinced – to use wireless for convenience, without realizing the potential downstream costs, or more importantly, the risks to students and staff.

Q. If our school is already heavily invested in wireless technology, what can we do?

A. First, stop all purchases or upgrades of wireless technology. Cancel agreements for any cell towers or antennas on school property. Ask your IT personnel to reduce the transmit power of routers and Wireless Access Points to the lowest possible setting while still maintaining functionality, and reduce the frequency of the beacon signal. Hardwire all fixed devices in classrooms.

Q. Has wireless radiation been linked to serious health issues?

A. Yes. A ten-year study by the National Toxicology Program of the National Institutes of Health was designed to determine whether non-ionizing radiation could cause cancer. In 2018, an independent expert panel reviewing the study found “clear evidence” of increased cancer among the lab animals tested – the same lab animals we use to test drugs. A concurrent study by the Ramazzini Institute in Italy (partially funded by the U.S. government) documented similar cancer risk from distant cell towers.

These studies confirm what thousands of other independent, peer-reviewed studies have found over the past fifty years: chronic exposure to wireless radiation causes biological harm. Children and pregnant women are particularly vulnerable to its effects.

Q. What about teachers and staff members?

A. Some teachers who have been negatively impacted by exposure to wireless radiation have received accommodations under the ADA to eliminate wireless access points from their classrooms. Teachers unions across the country are now considering wireless radiation to be an occupational hazard, and are recommending wired technology for schools.

Recent lab studies at Yale University and elsewhere have shown that wireless radiation can interfere with normal brain development in fetuses. For that reason, women who are or may become pregnant are strongly urged to avoid excess exposure to wireless radiation.