

WIRELESS IN SCHOOLS

PARLIAMENTARY ASSEMBLY COUNCIL OF EUROPE RESOLUTION 1815

- Calls on governments to “take all reasonable measures” to reduce exposure to EMFs “particularly the exposure to children and young people who seem to be most at risk ... particularly in schools and classrooms, give preference to wired Internet connections, and strictly regulate the use of mobile phones by school children.”
- Numerous European cities have passed resolutions to implement Resolution 1815. In Spain for example: Barakaldo, Erreterria, Espartinas, Hospitalet, Jerez de la Frontera, San Sebastián, Vitoria, Villa de Plentzia, Cornellá de Llobregat, Torrox, Mula, Villa de Buenavista del Norte, Poio, Arganda del Rey, Cenizate, Juntas generales de Guipúzcoa, Villava.



UNITED STATES

- New Hampshire and Maryland State Commissions recommend wired (not Wi-Fi) networks in schools.
- Oregon law requires investigation into health effects of wireless in schools.
- Several PTA and teacher union actions to decrease exposure.

ISRAEL

- Wi-Fi banned in preschool and kindergarten.
- Wi-Fi restricted in elementary classes.
- Government recommends children reduce cell phone radiation.
- Personal use of cell phones during school is banned.

BELGIUM

- Wi-Fi banned in preschool/daycare in Ghent, Belgium.
- Ban on sale of cell phones for young children.

CYPRUS

- Wi-Fi banned in kindergarten.
- Directive to remove Wi-Fi from elementary classes.

FRANCE

- Wi-Fi banned in kindergartens.
- Teachers have hardwired computers.
- Wi-Fi network is turned OFF as the default setting.
- Cell phones banned in elementary/middle schools and playgrounds.
- Nationwide campaign educating on how to reduce exposure.

SPAIN

- Hospitalet City deactivated Wi-Fi in nursery schools.
- Basque Ombudsman recommends measures to reduce RFR levels in schools.

RUSSIA

- Recommends wired instead of wireless for schools and warns against cell phones for children.

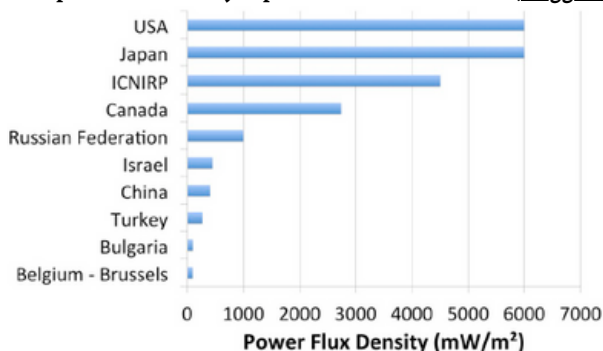
FRENCH POLYNESIA

- Wi-Fi deactivated in kindergartens.
- Wi-Fi OFF is default setting in schools.
- Nationwide educational campaign.

Countries with radio frequency radiation (RFR) wireless exposure limits more stringent than ICNIRP/FCC.

Schools are often considered "sensitive areas" with stricter RFR limits.

RFR power flux density exposure limits at 900 MHz (Clegg 2020)

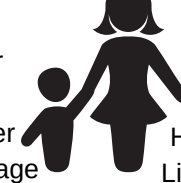


China
Russia
Belgium
Israel
Chile
Belarus
Bulgaria
Serbia
Slovenia
Italy
Montenegro
Switzerland
Greece
India
Liechtenstein
Tajikistan
Kazakhstan
Uzbekistan
Kyrgyzstan

Wi-Fi, cell towers and wireless devices expose students to RFR.

Published research links RFR to:

Brain cancer
Breast cancer
DNA damage
Thyroid cancer
Memory damage
Sperm damage
Brain damage
Tumor promotion
Impaired growth



Headaches
Diabetes
Hyperactivity
Liver damage
Oxidative stress
Behavior problems
Synergistic effects
Altered brain activity

CELL TOWERS & WIRELESS

BC CONFEDERATION OF PARENT ADVISORY COUNCILS

- Two resolutions. One calls on each Board of Education to have one public school at each education level that is free of Wi-Fi, cordless phones, and cell phones.
- The second calls on the Boards of Education to "cease to install Wi-Fi and other wireless networks in schools where other networking technology is feasible."

CALIFORNIA PTA

- Resolution on Electromagnetic Fields
- PTA can "educate and inform its districts, councils and units about the potential hazards of EMFs and encourage school districts and schools to develop risk reduction policies and continue to disseminate information on the subject."

PALO ALTO, CA PTA

- Fact sheet on "Safe Use of Technology," which is distributed to all the schools in the Palo Alto Unified School District.

PACIFIC GROVE, CA PTAs

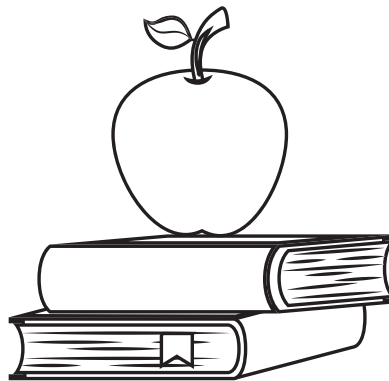
- Forest Grove Elementary Pacific Grove Middle School and Pacific Grove High School PTAs sent a letter to City Council opposing a high school cell tower.

FLETCHER HILLS, CA PTA

- Resolution encouraging schools to use cable lines Internet connections and to avoid wireless networks on campus.

PARENT ASSOCIATION OF PRESCHOOL CHILDREN (REYKJAVIK, ICELAND)

- Hosted conference with presentations by international experts on children's health.
- The Reykjavik Appeal was passed after the conference, calling for wired networks in schools.



PHOENICIA ELEMENTARY, NY PTA

- Sent a letter to the Onteora School District calling for the Wi-Fi to be turned off.

NEELSVILLE MIDDLE SCHOOL, MD PTA

- Voted to oppose proposed cell tower.
- Hosted parent information session with both the cell tower company and Environmental Health Trust.

NEW YORK STATE PTA

- Resolution on Cell Towers supporting:
 1. laws that regulate tower placement near schools
 2. research into the long-term effects of RFR
 3. education for parents and school officials regarding cell towers and health.

CASTLE HILL HIGH SCHOOL (AUSTRALIA) P&C COMMITTEE

- Funded ethernet plugs to reduce wireless exposure in classroom.
- Developed "Mobile Phone Safety Tips & Cyberbullying Information," which includes how to reduce cell phone and wireless radiation

MONTGOMERY COUNTY, MD PTA

- Safe Tech PTA Committee shares online and print resources on reducing RFR exposure and on digital safety issues such as privacy.
- Meets monthly with school IT department.

HILLSMERE ELEMENTARY SCHOOL, MD PTA

- Sent letters to the school board in opposition to cell towers near the school.

BRIARLAKE ELEMENTARY, GA

- Voted to oppose cell tower after board approved towers on schools.

CELL TOWERS NEAR SCHOOLS

SCHOOL CELL TOWER SETBACKS

Many communities have policies, ordinances or zoning that ensures cellular antennas are restricted to a specific minimum distance from schools. Hempstead, New York requires a special use permit for cell towers near schools.

Examples of cell tower/school setbacks:

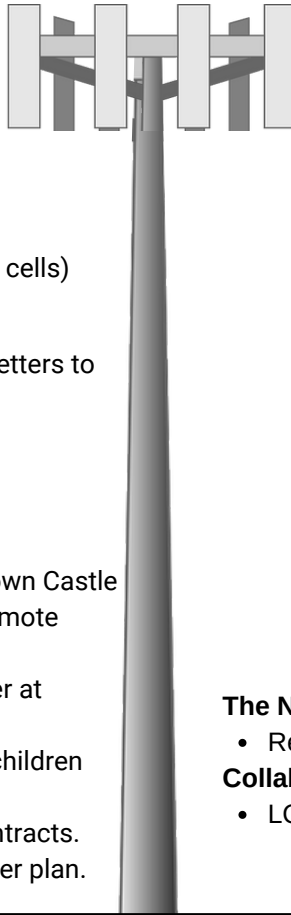
- **Palo Alto, California:** 1,500 feet
- **Los Altos, California:** 500 feet (small cells)
- **Walnut City, California:** 1,500 feet
- **Bar Harbor, Maine:** 1,500 feet
- **Sallisaw, Oklahoma:** 1,500 feet
- **Stockbridge, Massachusetts:** 1,500 feet
- **San Diego County California** 1,000 feet (small cells)

The Greenbelt Maryland City Council

- Voted to oppose school cell towers and sent letters to the school board and County Executive.

CELL TOWERS REMOVED FROM SCHOOL GROUNDS

- **Milpitas California:** School Board asked Crown Castle and T-Mobile to relocate the cell tower to remote location.
- **Ripon California:** Sprint moved the cell tower at Weston Elementary after students and staff developed cancer and parents argued that children should not be guinea pigs.
- **Alameda California** cancelled cell tower contracts.
- **Dekalb County Georgia** dropped school tower plan.



SCHOOL BOARDS

- **Palo Alto Unified School District Cell Tower** Resolution No. 2018-19.19 supports the City 1,500 setback and opposes cell tower "on or in close proximity to schools to ensure individuals, especially children, are protected from the potential negative effects associated with radiation exposure"
- **The Los Angeles California School District** has resolutions opposing cell towers on school property and also has a "cautionary level" for radiofrequency radiation 10,000 times lower than FCC regulations.
- **West Linn-Wilsonville Oregon School Board** prohibits cell towers on school property.
- **The Vancouver School Board** passed a resolution prohibiting construction of cellular antennas within 1,000 feet of school property.
- **Montgomery County Maryland Schools** policy does not allow cell towers on elementary schools.
- **Prince George's County Maryland** School Board decided not to renew a cell tower construction master leasing agreement that had allowed over 60 schools to be marketed as cell tower sites.

The New Hampshire 5G Commission Report

- Recommends a setback of 1640 feet for schools.

Collaborative For High Performance Schools

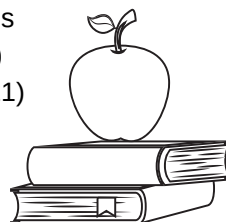
- LOW EMF Criteria- no cell towers on school property.

THE EPA SCHOOL SITING GUIDELINES

Lists exposure to electromagnetic fields and the fall distance as "potential hazards" from cell towers. The EPA guidelines recommend schools "identify and evaluate cell towers within ~200 feet of prospective school locations."

PUBLISHED RESEARCH

- 500 Meter buffer recommended for schools (Pearce 2019)
- A moratorium on 5G pending safety research (Frank 2020)
- A precautionary approach is better suited to State obligations under international human rights law (Roda and Perry 2014)
- Increased cancer deaths near cell antennas (Rodrigues 2021)
- Studies find: DNA Damage(Zothansiana 2017), Diabetes (Meo 2015), Cognitive effects (Meo 2018), sleep problems and headaches (Abdel-Rassoul 2007, Levitt & Lai 2010, Shahbazi-Gahrouei 2013)



THE AMERICAN ACADEMY OF PEDIATRICS says:

"An Egyptian study confirmed concerns that living nearby mobile phone base stations increased the risk for developing:

- Headaches
- Memory problems
- Dizziness
- Depression
- Sleep problems

"In large studies, an association has been observed between symptoms and exposure to these fields in the everyday environment."

WI-FI IN SCHOOLS

UNITED EDUCATORS OF SAN FRANCISCO

- Resolution on Safer Technology calls for the California cell phone advisory on how to reduce cell phone exposure to be disseminated to students and staff.
- Webinars on reducing RF exposure.

CANADIAN TEACHERS FEDERATION

- Briefing document "Wi-Fi in School" recommends limiting Wi-Fi.

UNITED TEACHERS OF LOS ANGELES

- 2013 Resolution "UTLA will advocate for technological solutions that maintain technology upgrades while not increasing employees exposure to electromagnetic radiation."

UNITED FEDERATION OF TEACHERS

- Website shares Dr. Moskowitz's "Reducing Exposure to Wireless" brochure and The BabySafe Project "What You Need to Know About Wireless Radiation and Your Baby."

ELEMENTARY TEACHERS FEDERATION OF ONTARIO

- Call for Wi-Fi moratorium until health studies done (Limestone).

BC TEACHERS FEDERATION

- Resolution supporting members suffering from electromagnetic hypersensitivity by ensuring that their medical needs are accommodated in the workplace.



NEW JERSEY EDUCATIONAL ASSOCIATION

- Recommendations in "Minimize health risks from electronic devices" detail how to reduce physical health risks from devices including wireless radiation.

ONTARIO ENGLISH CATHOLIC TEACHERS ASSOCIATION

- Position Statement recommends wired networks as Wi-Fi "may present a potential health and safety risk or hazard in the workplace."

GREATER VICTORIA TEACHERS ASSOCIATION

- Recommends minimal or non-use of Wi-Fi.

NEW YORK STATE UNITED TEACHERS

- Resolution "Hazards of Wireless Radiation Emission" and "Best Practices" recommend wired ethernet connections.
- Webinar "Risks of wireless technologies and protecting children and staff in schools."

AMERICAN FEDERATION OF TEACHERS

- National Conference presentation about wireless radiation posted online.

NATIONAL EDUCATIONAL ASSOCIATION

"All educational facilities must have healthy indoor air quality, be smoke-free, be safe from environmental and chemical hazards, and be safe from hazardous electromagnetic fields."

"Students and/or their parents/guardians, education employees, and the public should be notified of actual and potential hazards."
-NEA 2013-2014, C-19



NEW JERSEY EDUCATIONAL ASSOCIATION

- Put devices on desks, not laps.
- Hard wire all devices that connect to the internet.
- Hard wire all fixed devices such as printers, projectors and boards.
- Use hard-wired phones instead of cell or cordless phones.
- Put devices in airplane mode, which suspends EMF transmission in the device, disabling Bluetooth, GPS, phone calls, and WiFi.

EUROPE

- Resolutions to halt 5G in numerous European cities including Trafford, UK, Lille, France, Ormidia, Cyprus, Councils in Ireland and more.

SWITZERLAND

- Parliament refused to weaken radio frequency radiation (RFR) limits after 5G Report.

FRANCE

- 60 mayors/officials petition to halt 5G.
- Federal health agency investigating 5G
- 5G antenna RFR measured.

CANADA

- City of Toronto "Prudent Avoidance Policy" for Cell Towers.

BULGARIA

- Mezdra and Balchik have banned 5G.

NETHERLANDS

- Health Council recommends against 26 GHz for 5G due to lack of safety data.

ITALY

- 600 municipalities have passed resolution to halt 5G.

ISRAEL

- Cell tower setback 100m from schools/ homes.

RUSSIA

- No cell towers near schools.

UNITED STATES

- Resolutions to halt 5G passed in Hawaii County HI, Farragut TN, Keene NH & Easton CT.
- Numerous cities restrict cell antennas near homes including: Los Altos, Petaluma, Mill Valley, Malibu and San Diego County CA, Bedford NH and more.
- New Hampshire 5G Commission's 15 Recommendations include increasing transparency, reduce public exposure, research health effects and protect wildlife and trees.
- Oregon investigating health effects of wireless.
- Los Angeles CA Public Schools: RFR Limit 10,000x less than FCC.
- Palo Alto, Los Angeles LA Schools Greenbelt MD, Bar Harbor ME; No school cell towers



CYPRUS

- Cyprus National Committee on Environment and Child Health 5G Position Paper calls for 5G free zones.

AUSTRALIA

- New South Wales Dept. of Education policy objects to towers on/near schools.

LITHUANIA

- Cell antennas prohibited on kindergartens and hospitals.

CHILE

- Cell antennas prohibited in "sensitive areas" -kindergartens, hospitals and nursing homes.

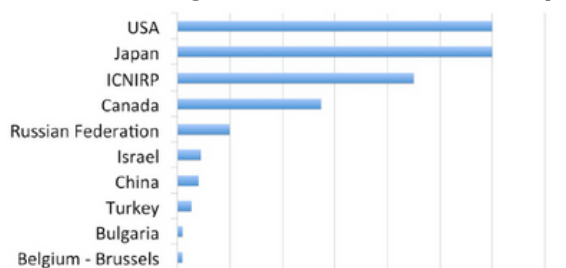
INDIA

- RFR limit tightened to 1/10 of CNIRP limits after Inter-Ministerial Report on impacts to wildlife.
- Mumbai, Zilla Parishad & Karnataka: Cell towers prohibited/removed near schools, colleges, orphanages and old age homes.
- Brihanmumbai Municipal: Cell towers banned at parks and playgrounds.
- State of Rajasthan: Supreme Court of India upheld removal of "hazardous to life" cell towers from vicinity of schools, hospitals/playgrounds.

BANGLADESH

- No cell towers on homes, schools, colleges, playing fields, populated areas and heritage areas.

Numerous Countries Have Cell Tower Network RFR Exposure Limits & Far More Stringent Than ICNIRP/FCC (USA):



Power Flux Density (mW/m²)
RFR power flux density exposure limits at 900 MHz (Clegg 2020)

China	Belarus	Turkey
Russia	Serbia	Greece
Italy	Slovenia	India
India	Montenegro	Liechtenstein
Israel	Bulgaria	Tajikistan
Chile		Kazakhstan
Switzerland		Uzbekistan
Brussels, Belgium		Kyrgyzstan

These Governments Measure & Publish RFR Levels Online

France	Switzerland
Spain	Bulgaria
Austria	Tunisia
Greece	Malta
Turkey	Bhutan
India	Brazil
Israel	Bahrain
Gibraltar	Monaco
Brussels Belgium	French Polynesia



LEGAL & LIABILITY ISSUES

When a new cell tower or wireless network is proposed, the first question to ask is: "Do you have insurance for damages from long-term exposure to the radiofrequency radiation (RFR)?" Usually the answer is "No."

Uninsurable Risk

- Insurers rank wireless, cell tower, and 5G RFR non-ionizing electromagnetic radiation as a "high" risk, comparing the issue to lead and asbestos.
- Most insurance plans have "electromagnetic field exclusions" and do not insure for long-term RFR damages.
- Wireless RFR and non-ionizing electromagnetic radiation are defined as a type of "pollution" by wireless companies themselves.
- US mobile operators have been unable to get insurance to cover liabilities related to damages from long-term RFR exposure.
- Wireless companies warn their shareholders of RFR risk but do not warn users of their products, nor do the companies warn the people exposed to emissions from the companies' infrastructure.

Portland Oregon Public School Insurance

"Exclusions: This insurance does not apply to: Bodily injury, personal injury, advertising injury, or property damage arising directly or indirectly out of, resulting from, caused or contributed to by electromagnetic radiation, provided that such loss, cost or expense results from or is contributed to by the hazardous properties of electromagnetic radiation."

Crown Castle

"We cannot guarantee that claims relating to radio frequency emissions will not arise in the future or that the results of such studies will not be adverse to us...If a connection between radio frequency emissions and possible negative health effects were established, our operations, costs, or revenues may be materially and adversely affected. We currently do not maintain any significant insurance with respect to these matters."

Swiss Re Institute (2019)

5G mobile networks classified as a "high," "off-the-leash" risk, stating, "Existing concerns regarding potential negative health effects from electromagnetic fields (EMF) are only likely to increase. An uptick in liability claims could be a potential long-term consequence" and "[a]s the biological effects of EMF in general and 5G in particular are still being debated, potential claims for health impairments may come with a long latency."

Verizon 10-K

"our wireless business also faces personal injury and wrongful death lawsuits relating to alleged health effects of wireless phones or radio frequency transmitters. We may incur significant expenses in defending these lawsuits. In addition, we may be required to pay significant awards or settlements."

Verizon Total Mobile Protection Plan (pg 10)

"Pollution" is defined as "any solid, liquid, gaseous, or thermal irritant or contaminant including smoke, vapor, soot, fumes, acid, alkalis, chemicals, artificially produced electric fields, magnetic field, electromagnetic field, sound waves, microwaves, and all artificially produced ionizing or nonionizing radiation and/or waste."

"Electromagnetic field exclusions" are clear and common in most insurance companies. It is applied as a market standard. This exclusion serves to exclude cover for illnesses caused by long-term EMF (non-ionizing radiation) exposure."

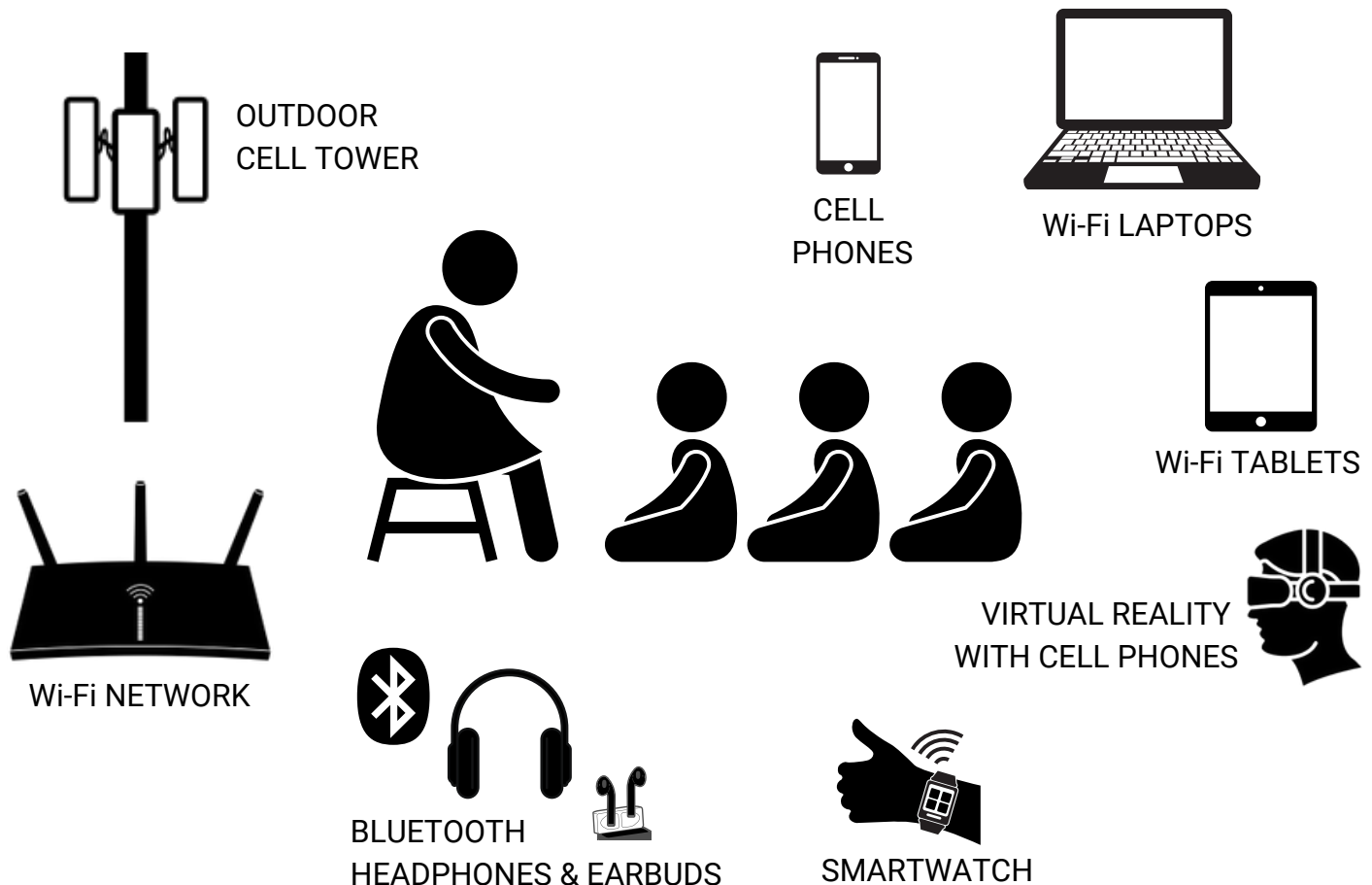
**-Complete Markets
"Electromagnetic Fields
Liability Insurance"**

"Electro-magnetic signals emitted by mobile devices and base stations may be found to pose health risks, with potential impacts including: changes to national legislation, a reduction in mobile phone usage or litigation."

**-Vodafone 2017 Report
ranks EMF as a "Principal
Risk with "High" impact.**

WIRELESS IN SCHOOLS

Wireless radio frequency radiation (RFR) is an invisible environmental exposure in classrooms.



WIRELESS RFR IS ABSORBED INTO THE HUMAN BODY

- Each wireless device has one or more antennas transmitting RFR at different frequencies.
- A "frequency" is the number of RFR waves that pass a specific point per second of time, every second.
- One Hertz (Hz) is one wave per second.



Fact: One smartphones will often have at least 5 active RFR antennas.

Wi-Fi 2.45 GHz = 2,450,000,000 waves per second

Wi-Fi 5 GHz = 5,000,000,000 waves per second

Bluetooth often uses 2.45 GHz

Cell Phone Network frequencies generally start at 600 MHz = 600,000,000 waves per second. The range extends to the much higher frequencies of LTE and 5G. **LTE** often uses 700 MHz to 2,100 MHz

5G Devices will include frequencies above 24 GHz, meaning 24,000,000,000+ waves per second.

SAFE TECHNOLOGY

Choose corded, wired, LOW-EMF technology to mitigate RFR risk.



A CORDED PHONE

For every classroom and dorm

CELL PHONE POLICY

Cell phones powered OFF in classes, hallways, and playgrounds

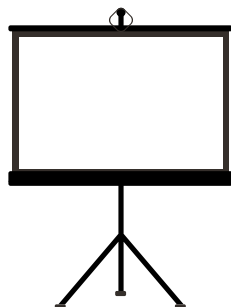
AIRPLANE MODE

Educate students & staff on how devices should be set to Airplane mode with Wi-Fi, Bluetooth, and other antennas set to OFF.



CLASS TECH

Hard wire all fixed devices such as printers, projectors, and boards.



ETHERNET

Plugs in all rooms



LAPTOPS

Connect with ethernet cords not Wi-Fi & always on airplane mode. Pre-download programs instead of cloud based



TABLETS

Connect with ethernet not Wi-Fi & always on airplane mode. Pre-download programs instead of cloud based

PERIPHERALS

Corded headphones, corded keyboard & corded mouse



CELL TOWER POLICY

No cell towers on or near schools.

TECHNOLOGY BEST PRACTICES

"If you plan to watch a movie on your device, first download it, then switch to airplane mode while you watch in order to avoid unnecessary radiation exposure."

– American Academy of Pediatrics

Recommendations by expert groups include:

- Collaborative for High Performance Schools Low EMF Criteria
- Children's Environmental Health & Protection Council
- New Jersey Educational Association
- New Hampshire 5G Commission
- Best Practices For Screens and Radiation
- EHT's Checklist for Schools



COMMUNITY EDUCATION

- Wall posters in each classroom about how to reduce cell phone and other wireless radiation.
- Educational curriculum about safer tech for students.
- Regular digital safety education and movie screenings for staff and families.

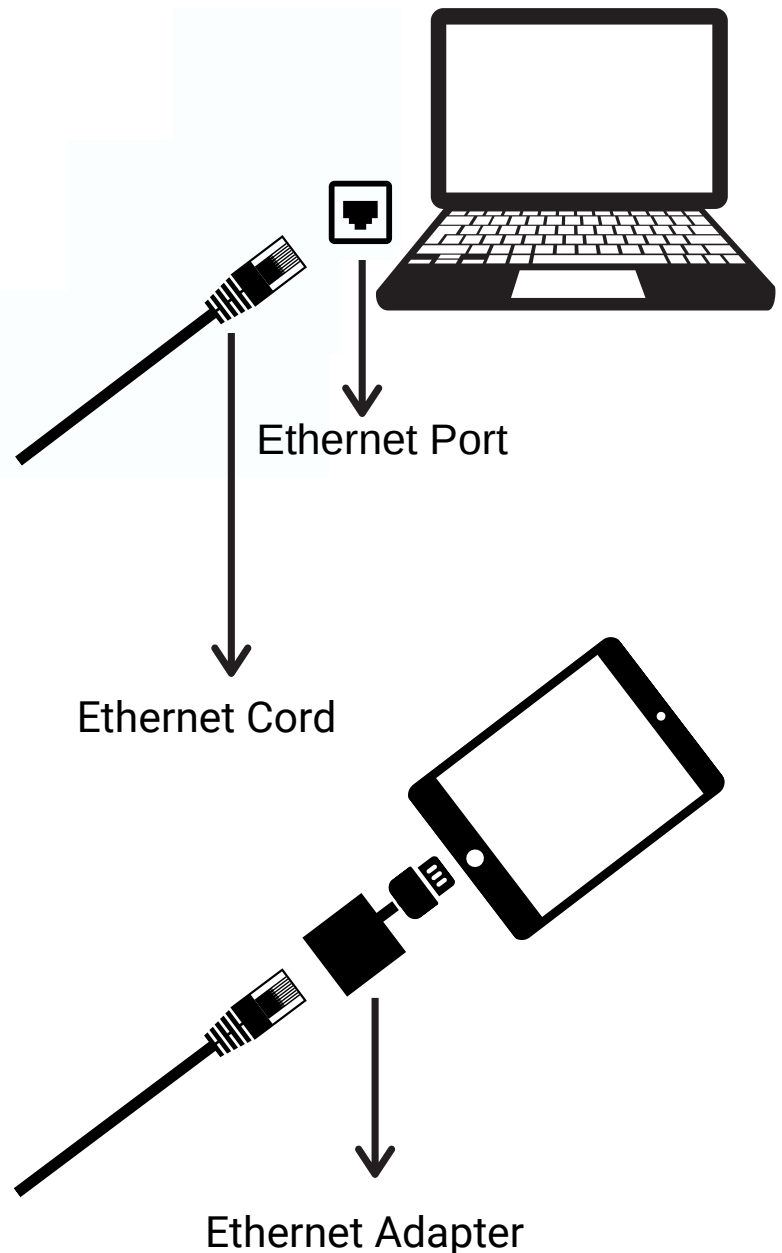
Best practices are hyperlinked. More at ehtrust.org.

HOW TO ETHERNET CONNECT

- 1 Plug ethernet cord into ethernet port in computer or laptop or tablet.
- 2 If there is no ethernet port in your laptop or tablet, simply use an ethernet adapter that plugs into the USB or lightning port.
- 3 Go to settings. Set all wireless antennas to OFF. Ensure that Wi-Fi, Bluetooth, and any other antennas such as Location, Hotspot, and Cellular are also OFF.

Tip:

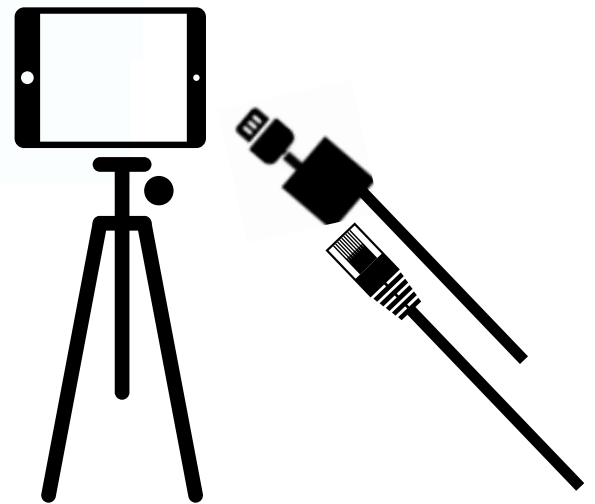
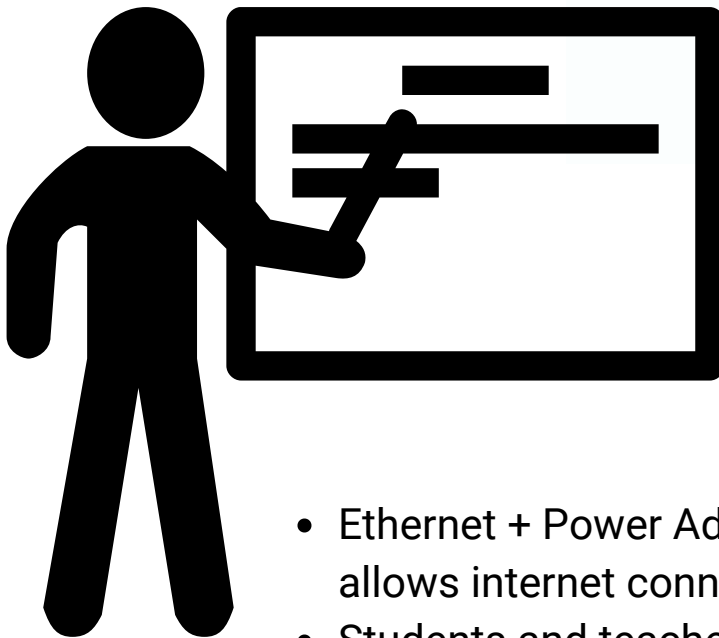
Most cell phones can also be connected this way with special adapters.



HYBRID CLASSROOM

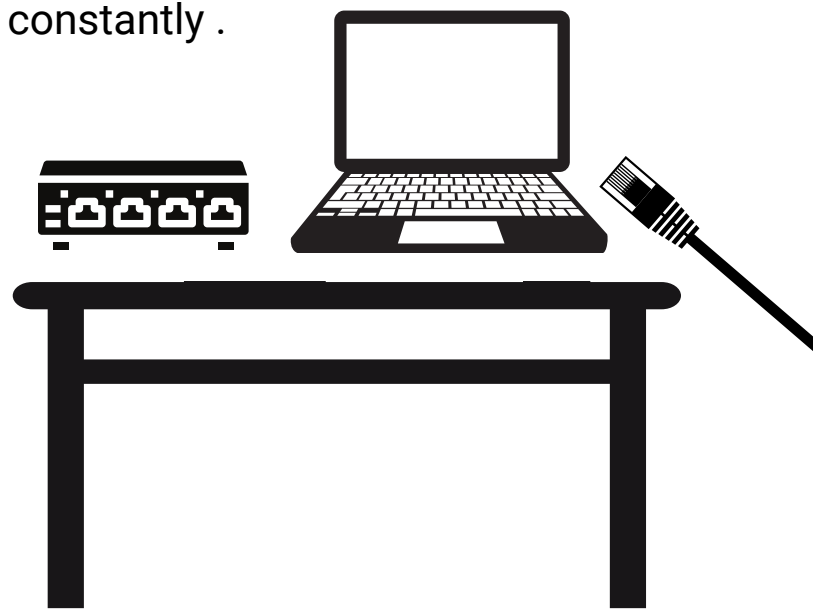
This set-up works for classrooms where the teacher is livestreaming to students at home and students in the classroom only use ethernet sporadically, such as art class where they log in to get an image.

Tablet with ethernet adapter for streaming video. All cords either taped or along wall following electric cord run.



- Ethernet + Power Adapter with Lightning Connector allows internet connections while charging.
- Students and teachers must be educated to set the Wi-Fi and Bluetooth OFF on the tablet, otherwise their antennas transmit constantly .

- Set up computer workstation on desk for students.
- Set up an ethernet switch so students can connect as needed.
- Each student can have their own ethernet and adapter stored in their laptop case.



WIRELESS RADIATION

MYTH There is no scientific evidence that wireless is harmful. Non-ionizing radiation is safe.

FACT Hundreds of peer-reviewed published studies in both humans and animals have linked wireless radiofrequency exposure and magnetic field non-ionizing electromagnetic (EMF) radiation to harmful biological effects. Here are just a few examples:

Brain

Memory damage
Altered brain activity
Headaches
Cognitive impairment
Behavior

Reproduction

Sperm damage
Damage to ovaries
Erectile dysfunction
Infertility

Health

Diabetes
Liver damage
ADHD symptoms
Oxidative stress

RFR EMF Exposure During Pregnancy

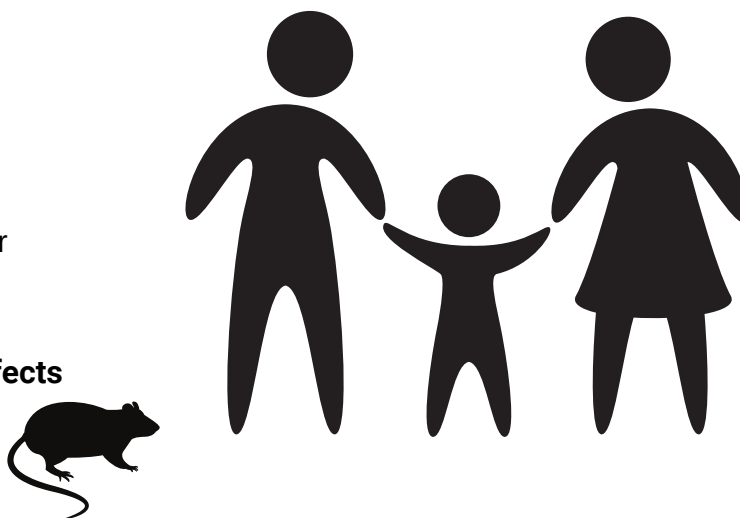
Hyperactivity
Speech problems
Behavior problems
Emotional problems
Hearing loss
Decreased brain cells

Tumors

Brain cancer
Thyroid cancer
Breast cancer
Decreased survival
Salivary gland tumor
Tumor promotion

Other Biological Effects

Synergistic effects
DNA damage
Sleep EEG
Blood-brain barrier damage



Magnetic field EMF

Leukemia
Brain tumors
Infertility

During Pregnancy

Miscarriage
Fetal growth
Asthma
Obesity
ADHD

CHILDREN ARE MORE VULNERABLE

- Children's developing brains are more impacted by neurotoxic exposures.
- Children absorb proportionately more RFR deeper into their brains compared to adults, because they have thinner skulls, smaller heads, and higher conductivity brain tissue than adults.
- Children have more active stem cells in their bodies and stem cells are found to be more affected by microwaves.
- The protective myelin sheath is not developed until the mid-twenties.

WHY THIS SCIENCE MATTERS

- Children will have a lifetime of non-stop daily exposure.
- Research shows people who first used wireless phones before the age of 20 have higher brain cancer risks.
- Wireless triggers oxidative stress in the body. Oxidative stress is connected to cancer, diabetes, neurodegenerative diseases, and other diseases.

WI-FI RADIATION

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Cabré-Riera A. (2021), **Association between estimated whole-brain radiofrequency electromagnetic fields dose and cognitive function in preadolescents and adolescents**, International Journal of Hygiene and Environmental Health

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