

# Wi-Fi in Schools: Do you know the Whole Story?

## Is Wi-Fi safe?

- NO research has proven Wi-Fi safe. No scientific study anywhere in the world states a safe radiation exposure level for children. (p.19 [http://www.emfanalysis.com/uploads/1/0/7/8/10781272/wi-fi\\_6\\_affidavit\\_from\\_microwave\\_radiation\\_expert.pdf](http://www.emfanalysis.com/uploads/1/0/7/8/10781272/wi-fi_6_affidavit_from_microwave_radiation_expert.pdf))
- No government agencies monitor Wi-Fi routers or other wireless devices once installed. (See <http://www.c4st.org/RSCREPORT-SC6>).
- Since 2011, Wi-Fi and all radiofrequency radiation have been classified as a 2B possible carcinogen by the World Health Organization's International Association for Research on Cancer (IARC). Lead and DDT are also included on this list. ([http://www.iarc.fr/en/media-centre/pr/2011/pdfs/pr208\\_E.pdf](http://www.iarc.fr/en/media-centre/pr/2011/pdfs/pr208_E.pdf)).
- In 2013, Dr. Arthur B. Miller, University of Toronto, stated that Wi-Fi and other wireless radiation would be classified a probable human carcinogen (Category 2A) if evaluated today. Dr. Miller sat on IARC's committee when the 2B classification decision was made. (<http://www.citizensforsafetechnology.org/Dr-Anthony-Miller-to-Toronto-Council-re-RF-Exposure,66,3622>)

## Is Wi-Fi in Schools the same as Wi-Fi at home?

- It is safer for your child not to be exposed to any Wi-Fi but Wi-Fi routers in schools are "industrial" strength. ([www.youtube.com/magdahavas](http://www.youtube.com/magdahavas)). Wi-Fi in a classroom is more powerful than having a cell phone tower 300 metres away: (p.19 [http://www.emfanalysis.com/uploads/1/0/7/8/10781272/wi-fi\\_6\\_affidavit\\_from\\_microwave\\_radiation\\_expert.pdf](http://www.emfanalysis.com/uploads/1/0/7/8/10781272/wi-fi_6_affidavit_from_microwave_radiation_expert.pdf))
- Wi-Fi systems in Simcoe County, Ontario, were measured as exceeding Canada's safety limits (Safety Code 6) ([http://www.safeschool.ca/Unsafe\\_Levels\\_at\\_School.html](http://www.safeschool.ca/Unsafe_Levels_at_School.html)).
- Schools operate hundreds of computers simultaneously. Each computer, iPad, iPod, smartphone, and laptop connected to the wireless transmitter opens a new exposure stream.
- Children are exposed 6-8 hours a day, 5 days a week to unprecedented levels of radiation.
- Other factors may contribute to levels that exceed Canada's safety limits: Radiofrequency energy from the human body (it has conductors with their own bio-electromagnetics); interactions between routers and laptops, hot spots from metal objects or appliances inside children (such as braces, retainers or surgical pins); and building structures (closed classrooms with brick walls and few windows). Canada's safety limits do not consider these factors.

## Do school boards have a choice? If there are concerns about Wi-Fi safety, what can school boards do?

- School boards have the power to choose wired internet. School Boards can also choose to limit exposure levels below Safety Code 6 – Canada's guideline. (The City of Toronto has exposure limits for wireless antennas 100 times below Safety Code 6).

## What kind of health effects are we talking about?

- Potential biological effects from long-term exposure to Wi-Fi and other wireless sources include leukemia; brain tumours; breast cancer and other cancers; effects on the nervous system; melatonin; the development of Alzheimer's; DNA damage; and reproductive impairment. (<http://www.bioinitiative.org/report/wp-content/uploads/pdfs/BioInitiativeReport2012.pdf>). Scientific evidence is not yet conclusive but why are we risking our children's health when we have wired alternatives?
- Wi-Fi in schools discriminates against children and teachers with electrohypersensitivity (EHS). EHS is recognized as a disability by the Canadian Human Rights Commission. Symptoms may include headaches, migraines,

insomnia, heart palpitations and pain, panic attacks, dizziness, nausea, digestive problems, poor blood sugar regulation, memory loss, concentration problems, fatigue, depression, asthma like symptoms, head and eye pain.

### **Aren't Canada's exposure limits among the safest in the world?**

- Exposure limits in China, Russia and India are 100 times more stringent than Canada's Safety Code 6 (<http://www.c4st.org/RSCREPORT-SC6>) and there are tighter restrictions on emissions in Switzerland, Italy, Belgium, Bulgaria, and Luxemburg (<http://www.c4st.org/TorontoPA>).
- Safety Code 6 has not been updated since 1979. It takes into account thermal effects on tissue after 6 minutes of exposure from non-ionizing radiation, not biological effects (<http://www.c4st.org/safety-code-6>). Limits are based on science tested in the 1980's on a 220lb mannequin. Children are not considered.
- Children are especially sensitive – their nervous systems are fragile, their brain tissues more conductive and their skeletons easily penetrated by microwaves (<http://aaemonline.org/docs/WiredSchools.pdf>). A child's immune system takes 18 years to develop. It takes 22 years to develop the body's 122 layers of protein which insulate the electrically generated signals used by the nervous system to control muscles and organs (See p.19-20 [http://www.emfanalysis.com/uploads/1/0/7/8/10781272/wi-fi\\_6\\_affidavit\\_from\\_microwave\\_radiation\\_expert.pdf](http://www.emfanalysis.com/uploads/1/0/7/8/10781272/wi-fi_6_affidavit_from_microwave_radiation_expert.pdf)).
- Children's body resonance (1 – 4 GHz), due to their height, falls within the frequency ranges of wireless communications devices like Wi-Fi and can result in higher absorption according to the International Commission on Non-Ionizing Radiation Protection (ICNIRP) (<http://www.icnirp.org/documents/StatementEMF.pdf>).
- The House of Commons Standing Committee on Health stated "... let Canadians know that the safety of (wireless) technology is not guaranteed, but only theoretical at this point, particularly in the case of children." (p.23 [http://www.c4st.org/images/documents/scientific\\_studies/HESARReportfinal.pdf](http://www.c4st.org/images/documents/scientific_studies/HESARReportfinal.pdf)).

### **What is the position of Canadian teachers on Wi-Fi?**

- In 2013, the Canadian Teachers' Federation stated that educational needs could be met while limiting exposure to Wi-Fi. They recommended that Safety Code 6 limits be based on thermal and biological effects, and the inclusion of a recommendation for prudent use of Wi-Fi (e.g. limit consistent exposure in schools by turning off access points when not in use).
- In 2013, the Elementary Teachers Federation of Ontario recommended that all Wi-Fi transmitters be labeled as part of a hazard control program.
- The Ontario English Catholic Teacher's Association wants all computers in the classroom to be hardwired.
- In 2013, the BC Teachers' Federation adopted a Wi-Fi resolution to protect teachers' health: <http://www.citizensforsafetechnology.org/RESOLUTION-PASSED-AT-BCTF-Annual-General-Meeting,2,3018>. The Federation also recognized Wi-Fi as a possible cancer risk: <http://www.safeinschool.org/2013/03/electrohypersensitivity-ehs-recognized.html>
- In 2013, the Greater Victoria Teachers' Association recommended a precautionary approach on Wi-Fi: <http://gvta.net/index.php/health-safety/2013-02-20-23-22-17>

### **Is returning to wired connections even feasible?**

- Most schools still have wired capability (<http://www.ctf-fce.ca/Research-Library/BriefToExpertpanel.pdf>).
- Wi-Fi is not only a health risk; it may also be a liability: Damage from radio frequency radiation is excluded from many insurance policies: Schools and school boards could be found liable for EHS and long-term health effects.

**We support the safe use of technology in schools - hard wired internet access. Find out more on Facebook - Ottawa Wired Schools - or email [ottawawiredschools@gmail.com](mailto:ottawawiredschools@gmail.com). See also our 5 page list of "Wi-Fi Warnings: Schools and Organizations in Canada and around the Globe".**