

## **Public Health Risk of Wi Fi Extremely Low**

By Dr. Rosana Pellizzari

The recent decision of the Kawartha Pine Ridge Public School Board to install Wi Fi in all its schools has raised concern among some community members about the public health impact of radio frequencies (RF). To facilitate this dialogue, I would like to share the latest scientific evidence and provide some context for the health protection standards that are currently in place.

Wi Fi uses RF to carry its signal in the same way as radio and television broadcast facilities, radar, mobile phones and their base stations. RF is described as “non ionizing radiation”. This means these waves do not have sufficient energy to ionize, that is, to remove electrons from atoms or molecules to create a charge ion. They do not break chemical bonds and therefore, are different in terms of the ability to cause biological effects, compared to forms of ionizing radiation, such as x rays.

The effects of external exposure to RF on the human body and its cells depend mainly on the frequency and magnitude, or strength. The strength of radio frequency fields is greatest at its source, and diminishes quickly with distance. Research into the biological and health effects of electromagnetic fields, including RF, has been underway for more than 30 years and on Wi Fi specifically since 2007. It is interesting to note that according to the World Health Organization (WHO), radio and television broadcast stations have been in operation for the past 50 or more years without any adverse health consequences.

There is no consistent evidence to date that exposure to RF signals from Wi Fi and wireless local area networks (WLANs) adversely affect the health of the general population, either in the short or long term. The signals from Wi Fi are very low power, typically 0.1 watt (one tenth of a watt) in both computer and the router and are well within internationally accepted standards of  $9 \text{ watts/m}^2$ . In 2009, the World Health Organization reported that RF exposures from base stations and wireless technologies in publicly accessible areas (including schools and hospitals) are normally thousands of times below international standards.

Similarly, in a 2007 technical report by Toronto Public Health on RF, it stated that bystander exposure to RF from WLAN installations and devices is in the range of a thousand times or more below the International Commission on Non Ionizing Radiation Protection (ICNIRP) guidelines. That report said the only situation where exposure might be higher, and comparable to using a cell phone, is if a laptop is placed in the lap rather than on a desk.

The ICNIRP is considered the global standard upon which most countries base their public exposure limits, including Health Canada. The limits it places already incorporate a 50 fold safety factor to prevent health effects resulting from RF exposure that causes tissue heating or thermal impacts. Thus, a precautionary principle is already incorporated into the ICNIRP limits.

This scientific evidence combined with the extremely conservative exposure limits presents a compelling case that the public health risk of RF is very minimal and should reassure parents concerned about the presence of Wi Fi in their children’s classroom.

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Letter to the Editor

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In response to the recent letter expressing concerns about the safety of WiFi in schools, I would like to reassure parents and students with the latest findings of the Ontario Agency of Health Protection and Promotion (OAHPP). OAHPP conducted an extensive review of current scientific research into the health effects of WiFi radio frequencies (RF) and concluded that:

“RF exposures to the public, including school children, from Wi-Fi are far lower than occur with cellphone use and to date there is no plausible evidence that would indicate current public exposures to Wi-Fi are causing adverse effects on health.”

This peer-reviewed report, released September 16, 2010, noted there is inconsistency and in some cases conflict between the results of individual studies which make it possible to select the results of individual research studies in support of a variety of opinions. This is what makes this issue so divisive because one can easily find individual studies that support either side of the WiFi safety argument.

The report pointed out that because of this inconsistency, decisions based on individual studies are not reliable. Instead, the OAHPP stated “up-to-date reviews of literature which follow a weight of evidence approach are far more useful for informing debate and sound policymaking than reliance on individual studies.”

The OAHPP is an arm’s length government agency that prepared this report in response to public concerns about WiFi. I encourage local residents to read the report for themselves to obtain the most current analysis on the subject at [www.oahpp.ca/about/whatsnew/201009\\_2.html](http://www.oahpp.ca/about/whatsnew/201009_2.html).

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