



Home > Environmental & Workplace Health > Radiation > Consumer Radiation > Wi-Fi Equipment

Environmental and Workplace Health

Frequently Asked Questions About Wi-Fi

On this page:

[What does Health Canada say about the potential health risks from Wi-Fi?](#)

[Should parents be concerned about Wi-Fi in schools?](#)

[Should parents take any precautions to limit their children's exposure to Wi-Fi?](#)

[How do Health Canada's exposure guidelines compare to those of other countries?](#)

[How often does Health Canada revise its guidelines?](#)

[What about studies that show biological effects at RF energy levels below Health Canada's exposure limits? Did Health Canada consider those studies when developing its exposure limits?](#)

[Is it true that there are no studies of long term effects of Wi-Fi radiation on children?](#)

[What scientific studies support Health Canada's RF energy exposure limits?](#)

What does Health Canada say about the potential health risks from Wi-Fi?

Based on scientific evidence, Health Canada has determined that low-level exposure to radiofrequency (RF) energy from Wi-Fi equipment is not dangerous to the public. This conclusion is consistent with the findings of other international bodies and regulators.

Should parents be concerned about Wi-Fi in schools?

No. RF energy levels from Wi-Fi equipment in all areas accessible to the general public, including school settings, are required to meet Health Canada's exposure guidelines. The limits specified in the guidelines are based on an ongoing review of thousands of published scientific studies on the health impacts of RF energy. Levels of RF energy emitted from Wi-Fi equipment are typically well below these exposure limits. As long as exposure is below these established limits, *there is no convincing scientific evidence that emissions from this equipment are dangerous to schoolchildren or to Canadians in general.*

Health Canada continues to conduct ongoing scientific review, and will take immediate action to revise its guidelines should new convincing scientific evidence arise.

Should parents take any precautions to limit their children's exposure to Wi-Fi?

Health Canada's position is that no precautionary measures are needed. Wi-Fi exposure levels are typically well below Canadian and international exposure limits, and there is no convincing evidence that they are a health hazard.

How do Health Canada's exposure guidelines compare to those of other countries?

Health Canada's exposure guidelines are comparable to those in the U.S. and most of Europe. These guidelines are set far below the lowest exposure level at which potential harmful effects to humans have been demonstrated. The approach used by Health Canada in setting these

guidelines is consistent with the recommendations of the World Health Organization Framework for Developing Health-Based Electromagnetic Frequency (EMF) Standards.

How often does Health Canada revise its guidelines?

Health Canada updates its exposure guidelines every 5 to 10 years. However, between these updates, our scientists continually monitor the scientific literature and conduct research on the potential biological effects of RF energy. If future scientific evidence demonstrated that exposure to RF energy at levels below the current limits were harmful, the Government of Canada would take appropriate action to protect the health of Canadians.

What about studies that show biological effects at RF energy levels below Health Canada's exposure limits? Did Health Canada consider those studies when developing its exposure limits?

Wi-Fi signals are similar to emissions from cell phones, digital TVs and other digital wireless technologies. Studies that look at signals from other wireless technologies are useful for shedding light on the possibility of health effects from Wi-Fi. At the frequencies used by Wi-Fi systems, extensive, long-term studies with biological organisms have been carried out; in particular, long-term animal studies. These studies showed no effects at exposure levels within international exposure limits.

There are a small number of epidemiology studies that have shown brain cancer rates may be elevated in long-term/heavy cell phone users. Other epidemiology studies on cell phone users, laboratory studies and animal cancer studies have not supported this association.

In 2011, the International Agency for Research on Cancer (IARC) classified RF energy as "possibly carcinogenic to humans". The IARC classification of RF energy reflects the fact that some limited evidence exists that RF energy might be a risk factor for cancer.

However, the vast majority of scientific research to date does not support a link between RF energy exposure and human cancers. At present, the evidence of a possible link between RF energy exposure and cancer risk is far from conclusive and more research is needed to clarify this "possible" link. Health Canada is in agreement with both the World Health Organization and IARC that additional research in this area is warranted.

Is it true that there are no studies of long-term effects of Wi-Fi radiation on children?

It is true that there are no completed studies of the long term effects of Wi-Fi radiation specifically on children. However, there is an abundance of studies that have used frequencies and signal patterns similar to Wi-Fi. These studies are useful for shedding light on the possibility of health effects from Wi-Fi. Some of the findings are directly related to children, while other information can be extrapolated to predict potential health impacts on children. Health Canada recognizes the need for long-term studies related to children and wireless devices, and will continue to monitor scientific literature on this subject. An international multi-centre epidemiological study called MOBI-KIDS is currently underway looking into the effects of use of communications devices and environmental factors and brain cancer in young people. Research for this study will take place over 5 years and is similar to the INTERPHONE study, which gathered information in adults.

Based upon extensive peer-reviewed scientific evidence, Health Canada has determined that exposure to low-level RF energy, such as that from Wi-Fi equipment, is not dangerous to children. There is no conclusive evidence of any long-term or cumulative health risks from exposure to low-intensity RF energy. These conclusions are consistent with the findings of other international bodies and regulators, including the World Health Organization, the International Commission on Non-Ionizing Radiation Protection, the Institute of Electrical and Electronics Engineers and the U.K. Health Protection Agency.

What scientific studies support Health Canada's RF energy exposure limits?

Health Canada exposure limits for RF energy are based on an ongoing review of thousands of studies from around the world published in scientific journals. Some of these studies can be found on the Health Canada website, and at the [World Health Organization](#) website.

When establishing recommendations for exposure limits the weight of evidence from the bulk of scientific literature is considered.

The term "weight of evidence" means that a number of factors other than just the number of studies finding or not finding an effect are taken into account. The most important of these factors are the quality of the work performed, and whether the effect, if found, is reproducible by other researchers.

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