

14 November 2013

Deb Struthers
Director Learning with Digital Technologies
Ministry of Education
P O Box 1666
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Dear Deb

Safety of WiFi in schools

I am writing to confirm that in the Ministry of Health's view exposures to radiofrequency fields from WiFi equipment in schools does not pose a health risk to staff or students in the areas where it is used.

Measurements in New Zealand and overseas show that exposures to radiofrequency (RF) fields from WiFi equipment are extremely low, amounting to tiny fractions of the limit allowed for the public in the New Zealand RF field exposure Standard. There are three main reasons for the low exposures:

- the low power of the WiFi transmitter;
- the rapid decrease in signal strength with increasing distance from the transmitter;
- the fact that no signal is transmitted when no data is being transferred (except for brief "beacon" signals from the WiFi access point or router).

Although no special precautions are needed when using WiFi equipment (beyond any recommended by the equipment manufacturer), if parents or staff do have concerns and wish to reduce their exposures, they can take simple steps to do so:

- place the wireless access point or router up on a high shelf or away from where people might sit and work;
- when working with a WiFi-enabled device, place it on a table rather than directly on the lap.

I am aware that various concerns about WiFi are raised from time to time, and hope that they are addressed in the material attached to this letter. While heightened concern for children's health is natural, Health officials consider that, so far as exposures to non-ionising radiation are concerned, the greatest health benefit for children comes from controlling exposures to UV radiation from the sun. The Ministry will continue to keep up to date information on WiFi available on its website¹.

Yours sincerely



Dr Fran McGrath
Acting Director of Public Health

¹ www.health.govt.nz/your-health/healthy-living/environmental-health/household-items-and-electronics/wifi-networks

Attachment: Additional Information on Radiofrequency Fields

International Agency for Research on Cancer (IARC) classification of RF fields: In 2011 IARC classified RF fields as a “possible” (Class 2B) carcinogen. This classification does not mean that a risk has been established, but that there is data suggesting the possibility of a risk.

To put this into context, other agents classified as “possible” carcinogens include coffee, pickled vegetables and low frequency magnetic fields. Other categories in the IARC classification scheme are Class 1 – carcinogenic (x-rays, diesel exhaust, alcoholic beverages, solar radiation), Class 2A – probably carcinogenic (eg PCBs, fumes from hot frying), Class 3 – not classifiable (eg tea, paracetamol) and Class 4 – probably not carcinogenic (only one agent in this category).

The classification seems to have been driven mostly by studies on cellphone users, especially the Interphone Study released in 2010. While this study did find an increased risk of certain brain tumours amongst the highest users of cellphones, the researchers cautioned that biases and errors in the data meant that no conclusions could be drawn on whether there is a real cause and effect relationship.

While some people may nevertheless find this classification worrying, it is important to remember that exposures from WiFi equipment are thousands of times lower than from cellphones, so there is little or no relevance of this classification to the use of WiFi in schools.

Council of Europe report on electromagnetic fields: This 2011 report and the explanatory memorandum does not include any new scientific findings, and the conclusions and recommendations are based on an extremely limited selection of the available data. A lot research has been published in this area, as well as many good summary reviews by national and international health bodies². None of these reviews is mentioned by the Council of Europe report, and none has suggested that exposure limits of the type recommended in New Zealand are inadequate. The Council of Europe recommendation to take reasonable measures to reduce exposures can be readily achieved by taking the steps such as:

- placing the wireless access point or router up on a high shelf or away from where people might sit and work;
- when working with a WiFi-enabled device, placing it on a table rather than directly on the lap.

Age of the New Zealand RF field exposure Standard: The New Zealand Standard was published in 1999, but the organisation on whose exposure Guidelines it was based (International Commission on Non-Ionising Radiation Protection, a scientific body recognised by the World Health Organization for its expertise in this area) reaffirmed their validity in 2009. Reviews by national and international health bodies of relevant health research carried out since then have not suggested any need to change those Guidelines. Nor has recent research provided persuasive evidence that children need additional protection factors beyond those already included in the Standard.

WiFi in European schools: There are sometimes suggestions that schools in some European countries have been required to remove WiFi. The Ministry has made enquiries and is unaware of any European government which has required this.

² See, for example, reviews listed at www.health.govt.nz/our-work/radiation-safety/non-ionising-radiation/research-non-ionising-radiation