

Wi-Fi in Canadian Schools: A Health and Safety Issue

Peer-reviewed scientific studies (50) documenting potentially harmful biological effects of Wi-Fi frequency (2.4-2.45 GHz) at or below Health Canada's Safety Code 6¹ guidelines and recommendations for precautionary measures

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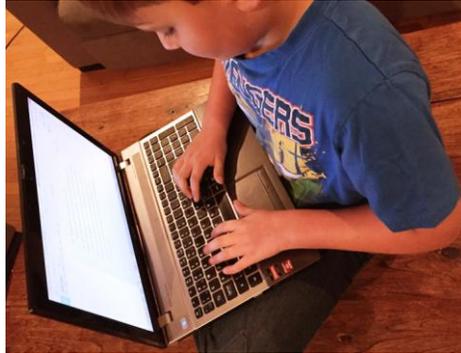


Photo: Canadians for Safe Technology

ABSTRACT

Potentially harmful health consequences of exposure to non-ionizing radiation from Wi-Fi devices being installed widely in Canadian schools is a growing concern for parents, students, school personnel and those responsible for health and safety in the school environment. Most non-federal Canadian bodies e.g. school boards, defer to Safety Code 6 guidelines for safe Wi-Fi exposure. Safety Code 6 is established by Health Canada, and sets the levels (limits) for "safe" human exposure in the radiofrequency/microwave range for "all individuals working at, or visiting federally regulated sites." Safety Code 6 has been called into question, with federal legislators recommending a full review of the scientific literature, public risk reduction and education. Health Canada has never revealed its entire reference list or its "weight of evidence" analysis to justify determination of Safety Code 6 guidelines.

The objective of this work is to identify original research studies in the peer-reviewed scientific literature, which show potentially harmful biological effects of Wi-Fi frequency radiation at levels that are at or below Safety Code 6 guidelines, and to compare that list with the reference list in Health Canada's **Safety Code 6 (2015) Rationale** document. The Rationale document stands as Health Canada's evidence that the updated Safety Code 6 protects the health of all Canadians. Also compared to the identified list, is the list of 16 studies that Health Canada released to a news reporter in October 2010 when Wi-Fi was first deployed in schools and parents reported that their children were becoming ill from newly installed Wi-Fi in their school.

The search identified 50 studies published between 1990 and the end of September 2015. Studies were conducted on human subjects, laboratory animals (including two on insects), and tissue and cell cultures. Fifteen (15) found effects on brain chemistry and oxidative stress. Eleven (11) documented DNA (genetic) damage. Adverse effects were reported on behaviour and learning in ten (10) studies. Also affected were the immune and cardiovascular systems. Nine (9) studies found abnormalities in sperm and testes. None of these are listed in the Rationale document or in the "16 studies" list.

The 50 studies compiled here provide only a portion of the scientific evidence that exposure to Wi-Fi should be considered a high priority health and safety issue, requiring immediate implementation of effective precautionary measures. It is especially important to protect young children, pregnant women and men who want to conceive healthy children. Precautionary measures in schools can be taken immediately by eliminating exposure wherever possible and otherwise implementing a policy to achieve exposures **As Low As Reasonably Achievable (ALARA)**. Until Safety Code 6 is adequately revised, Canadian school boards can and should take the initiative to use the most protective guidelines available globally.

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