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Wireless concerns

Parents blame children's health problems on schools' Wi-Fi technology

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Federal guidelines for the use of wireless technology are outdated and should be more in line with emerging research, experts say.

And some Simcoe County parents, who say their kids have experienced adverse health effects as a result of wireless Internet (Wi-Fi) in their schools, agree.

Rodney Palmer, who has two children, four and nine years old, at Mountain View Elementar

y School in Collingwood, recently made a presentation to the Simcoe County District School Board.

He informed the board that some students were experiencing headaches, dizziness, distorted vision and other symptoms that otherwise weren't usually a problem with the children.

Palmer's four-year-old daughter would get a rash on her leg -- something that would happen only at school, he said.

"It's really the long-term effects that I'm worried about. Introducing a four-year-old to microwave radiation for six hours a day when it's not being used is profoundly unnecessary," he said, noting the majority of the school's eight transmitters were left on when they were not needed.

The long-term effects are what worry researchers, too.

The longer people are exposed to electromagnetic fields (EMFs), the more sensitive they become to them, and the symptoms become more severe, said Magda Havas, an associate professor at Trent University who has been conducting electromagnetic research for 20 years.

She cited a study out of the University of Stockholm in Sweden, where human cells were exposed to radiation at frequencies of both 915 and 1,900 megahertz (MHz). The ability of a cell to heal itself was shown to be impaired when exposed to either frequency.

Havas was involved with a 2008 blind study in Colorado that tested the effects of EMFs on 25 adults. Researchers used cordless phones with a frequency of 2.4 gigahertz (GHz), which is used in schools, Havas noted. When the phones were turned on, six people's hearts "started behaving erratically," she said, adding their heart activity normalized after the phones were shut off.

What's alarming to Havas is that 2.4 GHz is a microwave frequency.

"What we're using for Wi-Fi in schools is basically a weaker microwave," she said. "With a microwave oven, you close the door and the microwaves are contained within the oven, whereas, with our schools, the microwaves are released into the environment. The school becomes the microwave."

COMMON TECHNOLOGY

Wireless Internet has become more common in the board's schools over the past two years. All schools have it at some level, and the goal is to extend that availability to portables.

It's safe by Health Canada's standards, and it's all in the name of equity, said superintendent of education John Dance, who is responsible for IT.

When the board was getting feedback while crafting its IT strategic plan in 2007 and 2008, greater access to the

Internet was identified as a need. Allowing access from portables is a step toward equitabili

ty in that sense, Dance said.

Also, "it's the 21st-century technology."

"That's where all the technology is right now," he said of wireless.

Another benefit of Wi-Fi, he said, is increased security for the board's network.

The only Wi-Fi-related concerns seem to be coming from Mountain View Elementary School, Dance said, and any decision to turn off transmitters would be made by trustees.

"It would be unusual for us to make a unilateral decision when the board hasn't had a chance to discuss it," he said.

Trustees will get that chance.

Palmer's deputation to the board has been sent to the facility standing committee.

"The issue has been deferred. It has not been dismissed," Dance said.

When it comes to safety standards, the board refers to Health Canada guidelines.

"My understanding is what we have in schools are thousands of times lower than the limit for exposure," Dance said. "All we can do is go back on what our authorities are. They say that it is safe."

The president of Lakehead University feels Canadian and world health authorities won't be saying that forever.

"At some point in time, the evidence will become overwhelming and people will say, 'Why weren't we protected?'"

Fred Gilbert said. "At the end of the day, school boards could have some inherent liability."

Gilbert, a biologist, implemented a presidential policy -- which later became a general policy after it was embraced by the university's vice-presidents -- at Lakehead regarding Wi-Fi and cellular antennae.

The purpose was "to limit wireless connectivity based on the 'precautionary principle' as there are numerous scientific studies that demonstrate a basis for concern that continuous or frequent long-term exposure to the non-ionizing radiation of electromagnetic fields could have adverse health effects."

"There was a building mass of information saying, 'Let's stand back a bit. Let's take stock of this,'" Gilbert said.

LAKEHEAD'S POLICY

The policy applies to Lakehead's Thunder Bay and Orillia campuses. There are a couple of spots at the Thunder Bay campus where Wi-Fi is available, and that was in response to demand from students.

Essentially, the precautionary principle advises against waiting on scientifically conclusive evidence -- a major grey area with Wi-Fi -- "where there are threats of serious or irreversible damage."

For a body like a school board to refer back to Health Canada and World Health Organization guidelines is "fair," Gilbert said,

"but you have to take a look at past history, even around those authorities," he said, noting safety standards change as biological effects become more greatly understood.

Both Gilbert and Havas say it takes too long for the policy to catch up with the science, with Havas saying it happened with concerns about asbestos, cigarettes and pesticides.

"It takes a generation," Gilbert said. "You have a generation that is effectively a guinea pig for what's going on."

Havas agreed, and said it's especially important to go by the precautionary principle in this case, as the health effects are often not surfacing until after years of exposure.

"There's so much evidence out there that these are harmful, but the authorities are not paying attention," she said.

Lakehead doesn't have Wi-Fi at its temporary campus in Orillia, though it's likely the condos above, in the same building, do. The permanent campus, when it opens in the fall, "will be wired and there will not be a need for wireless," Gilbert said.

Lakehead instead uses a fibre-optic system.

MORE INFO NEEDED

Orillia trustee Debra Edwards admitted she doesn't "know the implications" of Wi-Fi in the schools.

"We're not technicians knowledgeable about the dangers to exposure. We need to find out," she said.

If there are transmitters being operated unnecessarily

at any schools, "that doesn't make any sense," she said.

"We need to ensure that, beyond any doubt, we're not exposing our children to any dangerous levels of radiation," she said.

"We can't just look the other way."

Rebecca Ness, whose eight-year-old son attends Admiral Collingwood school, recently plugged back in after going wireless.

"My house was so wired," she said. "Then I started seeing effects on my son."

She said he experienced distorted vision and hearing problems.

She made the switch a couple of weeks ago and said the problems "totally disappeared" in 24 hours.

"Even though the symptoms are gone, I worry about it in our schools," Ness said. "The inconvenience of getting sick outweighs the inconvenience of having to plug your computer in."

NO CONCERNS

In an email, Health Canada stated: "Health Canada has no scientific reason to consider the use of wireless communications devices, such as cellphones, BlackBerrys, wireless laptop computers and their supporting infrastructure, dangerous to the health of the Canadian public."

Further, it stated it updates its exposure guidelines every five to 10 years.

"If future scientific evidence demonstrated that exposure to RF (radio frequency) energy levels below the current limits were harmful, the Government of Canada would take immediate action to protect the health of Canadians."

The Ministry of Education was asked a list of questions, includi

ng whether it had concerns about the safety of Wi-Fi in schools, whether it had received complaints or concerns about it, and whether it encouraged school boards to implement wireless technology.

In an email, a ministry spokesperson stated: "The ministry's position is that if anyone has health and safety related concerns we recommend they raise these concerns with their local board."

The Simcoe Muskoka catholic District School Board uses Wi-Fi in all its schools and its board office. Communications director Diane Legg said in an email that the board is not aware of any complaints.

"On the contrary, we are frequently asked why we don't have more Wi-Fi in our schools," she said.

The board also refers to Health Canada guidelines and says it is "certainly aware of the debate" and is "monitoring the situation."

ntaylor@orilliapacket.com

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