

Wi-Fi as a Health Hazard

Rob Beschizza – Wired News - Dec, 12, 2006

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Electromagnetic field sensitivity is an empirical chimera.

Riding in on peer-reviewed research, but flunking every major test, the idea that wireless technology amounts to a modern health threat presents a conundrum to proponents and skeptics alike. With Wi-Fi networks blanketing homes, schools and even whole cities, they've become the latest flash point in a struggle that's arced from power lines to microwaves, cell phones and even computers, spanning decades of debate.

To sufferers of EMF sensitivity, however, such academic battles are exasperating. To them, it's as if their symptoms, and even their sanity, are under attack.

"A professor called it Compulsive Risk Assessment Psychosis, otherwise known as CRAP," said Rod Read of ElectroSensitivity-UK, a registered charity in Britain. "He says everyone is deluded. It insults and abuses people who are sick. I thought that went out with the Victorian era."

British author Kate Figes recently described a sensation akin to being "prodded all over your body by 1,000 fingers" when in the presence of a Wi-Fi signal. When Michael Bevington fell ill, he blamed a network recently installed at the prestigious school where he'd worked for 28 years: "Over the weekend, away from the classroom, I felt completely normal."

Plans for a Wi-Fi network at an Illinois school were scuppered after parents filed a lawsuit. The president of Canada's Lakehead University banned Wi-Fi on campus, likening it to second-hand smoke. In March, Toronto's public health department questioned plans to install a citywide network.

"It's the whole insidious and invisible exploitation of the EM spectrum," said Read, who estimates between 1 percent and 3 percent of the population may be susceptible. "To the sensitive, it's like being shouted at all the time."

Sufferers report headaches, nausea, stomach upsets, tinnitus, brain fog and short-term memory among the symptoms, Read said. Skeptics, however, suspect that blaming EMF sensitivity for their ills amounts to an easy answer to almost any medical problem.

"There is no known mechanism by which EMF from any source -- power lines, cell phones or Wi-Fi networks -- can cause health problems of any kind," said Michael Shermer, publisher of *Skeptic* magazine. "In fact, there is nothing that even needs explaining."

While some groups focus on nonspecific symptoms, others claim links to more severe conditions such as cancer.

"We're in it for a long fight," said Cindy Sage of Sage EMF Design, a California environmental consulting firm that profiles locations for their EMF characteristics. "Around the world, we've seen the affected giving up hope. But they're burning down cell towers in Israel, dismantling them in Ireland, taking it to a civil disobedience level when they can't get their governments to respond."

Scientists recognize the dangers of high-frequency ionizing radiation, such as gamma rays unleashed by nuclear fallout. [Non-ionizing radiation](#), however, such as Wi-Fi signals, cellular networks, television broadcasts and visible light, cannot break down atomic bonds and has long been considered safe.

"The fields that are induced by Wi-Fi transmissions are well below those that could cause problems to humans,"

said Chris Guy, head of The University of Reading's School of Systems Engineering. "The maximum power that is allowed to be transmitted by any Wi-Fi unit is one-tenth of a watt."

EMF sensitivity advocates, however, believe studies reveal that even these low-frequency, low-power fields can cause subtle damage to human tissue, citing evidence of cell death, faster-growing tumors and DNA damage.

Sage, who published a 30-page critique of San Francisco's decision to pursue a citywide wireless network, said the proven effects on biological systems caused by EMF do not diminish with signal strength.

"The trend is looking like there is no lower limit," Sage said.

Graham Philips of Powerwatch, which seeks to highlight the alleged dangers of EMF, said no peer-reviewed research demonstrates dangers specific to Wi-Fi. That said, he claimed that the vast majority of studies into EMF indicate a negative health impact, and that a precautionary approach should be adopted.

"What isn't yet agreed upon is whether or not it is attributable to the electrical devices being accused of being the problem," he said, "or whether it is psychological."

The precautionary principle is misapplied here, skeptics say, pointing out that whatever evidence exists for biological effects, it does not amount to proof of biological harm.

"We don't even need to study Wi-Fi networks in terms of health concerns, because there are no health concerns that need explaining," Shermer said. "All we have are anecdotes, and anecdotes do not make a science."

Epidemiological studies consistently fail to uncover negative health effects. On Wednesday, a Danish study, tracking a cohort of 420,000 over 20 years, reported no increase in cancer among cell-phone users. **(Note: see 10 pages critic from Dr G. Carlo !)**

It's as if death forgot to return their calls.

"What do you do with uncertain science, where there is evidence but not proof?" Sage asked. "We don't have the kind of science process that would provide conclusive evidence."

"There is no such thing as truly conclusive evidence," Philips said, "and nothing can really be done to provide any."

To others, the lack of such evidence, after years of attempts to find it, sends a clear signal. "It was codswallop then, and it's codswallop now," Shermer said.

And yet the lines of the battle seem fluid. Most mainstream scientists may consider EMF sensitivity unlikely, but more studies are under way. Some governments are taking a cautious tack, reviewing exposure limits and recommending that youngsters, at least, avoid habitual use of cell phones. And on the other side, the virtues of wireless technology are not lost on its critics.

"We don't see us doing away with mobile phones or Wi-Fi," Read said. "We suspect there are frequencies that don't have any effect on people at all.... That's the research that really has to be done."

"It's a problem we've created with science, and we can uncreate it with science."