

HARVARD MEDICAL SCHOOL

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TO: Los Angeles Unified School District
FROM: Martha R Herbert, PhD, MD
RE: Wireless vs. Wired in Classrooms
DATE: February 8, 2013

I am a pediatric neurologist and neuroscientist on the faculty of Harvard Medical School and on staff at the Massachusetts General Hospital. I am Board Certified in Neurology with Special Competency in Child Neurology, and Subspecialty Certification in Neurodevelopmental Disorders.

I have an extensive history of research and clinical practice in neurodevelopmental disorders, particularly autism spectrum disorders. I have published papers in brain imaging research, in physiological abnormalities in autism spectrum disorders, and in environmental influences on neurodevelopmental disorders such as autism and on brain development and function.

I recently accepted an invitation to review literature pertinent to a potential link between Autism Spectrum Disorders and Electromagnetic Frequencies (EMF) and Radiofrequency Radiation(RFR). I set out to write a paper of modest length, but found much more literature than I had anticipated to review. I ended up producing a 60 page single spaced paper with over 550 citations. It is available at http://www.biointiative.org/report/wp-content/uploads/pdfs/sec20_2012_Findings_in_Autism.pdf.

In fact, there are thousands of papers that have accumulated over decades –and are now accumulating at an accelerating pace, as our ability to measure impacts become more sensitive –that document adverse health and neurological impacts of EMF/RFR. Children are more vulnerable than adults, and children with chronic illnesses and/or neurodevelopmental disabilities are even more vulnerable. Elderly or chronically ill adults are more vulnerable than healthy adults.

Current technologies were designed and promulgated without taking account of biological impacts other than thermal impacts. We now know that there are a large array of impacts that have nothing to do with the heating of tissue. The claim from wifi proponents that the only concern is thermal impacts is now definitively outdated scientifically.

EMF/RFR from wifi and cell towers can exert a disorganizing effect on the ability to learn and remember, and can also be destabilizing to immune and metabolic function. This will make it harder for some children to learn, particularly those who are already having problems in the first place.

Powerful industrial entities have a vested interest in leading the public to believe that EMF/RFR, which we cannot see, taste or touch, is harmless, but this is not true. Please do the right and precautionary thing for our children.

I urge you to step back from your intention to go wifi in the LAUSD, and instead opt for wired technologies, particularly for those subpopulations that are most sensitive. It will be easier for you to make a healthier decision now than to undo a misguided decision later.

Thank you.

A handwritten signature in black ink, appearing to be 'Martha Herbert', written over a light blue horizontal line.

Martha Herbert, PhD, MD Massachusetts General Hospital, Harvard Medical School Boston, Massachusetts, USA

Kawartha Pine Ridge District School Board
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1994 Fisher Drive
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Dear Sirs/Madams:

This is concerning potential adverse health effects associated with exposure to radiofrequency (RF) radiation, specifically that from wireless routers. I am a public health physician who has been involved in issues related to electromagnetic fields (EMFs) for a number of years. I served as the Executive Secretary for the New York Powerline Project in the 1980s, a program of research which showed that children living in homes with elevated magnetic fields coming from powerlines suffered from an elevated risk of developing leukemia. I have edited two books on effects of EMFs, including RF radiation. I served as the co-editor of the Bioinitiative Report (www.bioinitiative.org), a comprehensive review of the literature on this subject. The public health chapter from this report was subsequently published in a peer reviewed journal, and that is attached. Also I testified before the President's Cancer Panel on this subject in 2009, and a publication coming from that testimony is also attached. Thus this is a subject which I know well, and one on which I take a public health approach that has as a fundamental principle the need to protect against risk of disease even when one does not have all the information that would be desirable.

There is clear and strong evidence that intensive use of cell phones increases the risk of brain cancer, tumors of the auditory nerve and cancer of the parotid gland, the salivary gland in the cheek by the ear. The evidence for this conclusion is detailed in the attached publications. WiFi uses similar radiofrequency radiation (1.8 to 5.0 GHz), although the intensity of exposure in the immediate environment is much lower than what one gets from holding a cell phone close to your head. The difference between a cell phone and a WiFi environment, however, is that while the cell phone is used only intermittently a WiFi environment is continuous. In addition WiFi transmitters are indoors, where people (and in this case, children) may be very close to them. There is evidence from Scandinavian studies of cell phone usage that children who use cell phones are about five times more likely to develop brain cancer than if use starts as an adult. Thus it is especially important to protect children.

To my knowledge there has not been any health investigation of individuals living or working in WiFi environments as compared to others who are not. However, because the radiation is the same as those for cell phones, there is every reason to assume that the health effects would be the same, varying only in relation to the total dose of radiation. Wired facilities do not generate any RF radiation. While there is not specific proof that WiFi increases risk of cancer, there is certainly no evidence that it is safe. I urge you to not put WiFi in any school. Children should not be put at increased risk of developing cancer.

Yours sincerely,



David O. Carpenter, M.D.
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