

Wifi in Schools in Maryland

Introduction

The Maryland Children's Environmental Health and Protection Advisory Council (CEHPAC) identifies environmental health issues that impact children and seeks to protect them from exposure to environmental hazards. It does this by:

- Advising the General Assembly on legislation and recommends guidelines for State agencies.
- Disseminating information on how to reduce, treat, and eliminate children's exposures to hazardous substances
- Alerting the public to potential toxicants that might adversely affect children.

A CEHPAC workgroup set out to answer the following questions:

1. What exposures are linked to wireless technology?
2. What health outcomes are linked to exposure?
3. Is the Federal Communications Commission radio-frequency energy exposure limit protective of children?
4. What are the policy options?

The first two questions were addressed as part of an MPH Capstone project by Linda Li, a University of Maryland student in the Maryland Institute for Applied Environmental Health (see Appendix). Since her report, the National Institutes of Health released an interim report indicating a correlation between high exposure to cell phone radiation and low incidences of tumors in the brains and hearts of male rats, but not in female rats¹.

Regarding the third question, the FCC guidance is decades old and some groups have called for it to be updated to reflect current science and newer exposures, especially to children.

CEHPAC recommends that:

- The **Maryland Department of Health & Mental Hygiene** ask the United States Department of Health & Human Services to formally petition the FCC to revisit the exposure limit to ensure it is protective of children's health and that it relies on current science.
- This report be placed on the CEHPAC web site and shared with the Maryland Department of Education.

There are a range of policy approaches to address environmental exposures: from adopting the precautionary principle to experimenting directly on humans. Below are some examples of policy approaches from around the world (more can be found at

<http://www.parentsfor safetechnology.org/worldwide-countries-taking-action.html>):

¹ <http://ntp.niehs.nih.gov/results/areas/cellphones/index.html>

- In 2015, France banned wifi in nursery schools and ruled that routers in schools for children up to 11 should be turned off when not in use for pedagogic purposes.
- In [Vitoria City, Spain](#) citizens will be informed of the location of wireless transmitters are in civic centers and municipal buildings.
- In [Israel, the Ministry Of Education](#) issued guidelines limiting wifi in schools including.
 - Preschool through 2nd grade have banned the use of wireless networks.
 - A hard wired direct cable connection is required if the teacher has a computer in the class. Magnetic fields below 4MG are being reduced.
 - In third and fourth grade class internet is restricted to 3 hours per week.
- [The German Federal Ministry for Radiation Protection](#) states, "supplementary precautionary measures such as wired cable alternatives are to be preferred to the WLAN system."

Recommendations

The report on exposures and health effects from Linda Li shows that the research is still inconclusive. While scientists work to answer questions about the impact of wifi on children's health, CEHPAC recommends limiting exposures as much as feasibly practical², without negatively impacting education. Science has yet to determine if the following recommendations will reduce exposure; however they are based on principles of industrial hygiene and occupational health. **These recommendations should be re-visited by CEHPAC on an bi-annual basis.**

- The Maryland Department of Education should:
 - consider using wired devices.
 - Where classrooms are powered, but without wired access to the school networks, a centralised switch and dLAN units can provide a reliable and secure form of networking for as many laptops as necessary without any microwave electromagnetic field exposure.
 - If a new classroom is to be built, or electrical work is to be carried out in an existing classroom, network cables can be added at the same time, providing wired network access with minimal extra cost and time.
 - have children place devices on desks to serve as barrier between the device and children's bodies.
 - locate laptops in the classroom in a way that keeps pupil heads as far away from the laptop screens (where the antennas are) as practicable.
 - consider using Kindles instead of tablets as they reduce eyestrain.
 - consider using a switch to shut down the router when it is not in use.
 - teach children to turn off wifi when not in use.
 - consider placing routers as far away from students as possible
- As schools add wifi to classrooms, the General Assembly should consider funding education and research on electromagnetic radiation and health.

² Wifi in Schools Australia: Reducing EMR. http://www.wifi-in-schools-australia.org/p/blog-page_13.html.

- The Department of Health should provide suggestions to the public on ways to reduce exposure:
 - Don't sit near WiFi routers, especially when people are using it to access the internet.
 - Turn off the wireless on your laptop when you are not using it.
 - Turn off WiFi on smartphones and tablets when not surfing the web.
 - Switch tablets to airplane mode to play games or watch videos stored on the device.

Appendix

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