



## Frequently Asked Questions: Wi-Fi® and Health

The Wi-Fi Alliance® takes any concern about the alleged health impact of Wi-Fi technology seriously. Although questions have been raised, a range of scientific research undertaken to date concludes that there is no evidence that lower power wireless networks pose health threats to users or to the general public. Wi-Fi technology emits a signal that is a fraction of that generated by other commonly used radio-based technologies.

The World Health Organization has reviewed the various bodies of research that have been conducted and has concluded that, due to the research results and the very low exposure levels associated with Wi-Fi, there is no convincing scientific evidence that weak radio frequency signals from base stations and wireless networks cause adverse health effects.

### **Are the radio frequency emissions from Wi-Fi safe?**

The World Health Organization has issued the following statement: "Considering the very low exposure levels and research results collected to date, there is no convincing scientific evidence that the weak RF signals from base stations and wireless networks cause adverse health effects."

<http://www.who.int/mediacentre/factsheets/fs304/en/index.html>

### **Do Wi-Fi products have to meet any safety criteria to protect people's health?**

Yes. All Wi-Fi products -- from routers/access points to client devices such as computers, phones, and printers -- are subject to national and international RF safety standards. More than 40 countries have RF safety standards which are based on or are compatible with either the International Commission on Non-Ionizing Radiation Protection (ICNIRP) guidelines or Institute of Electrical and Electronics Engineers (IEEE) standard. These safety guidelines were developed by committees of scientific and medical experts following review of extensive data. The limits incorporate large safety margins to protect the public.

### **Has any health research been done on the impact of Wi-Fi products?**

A range of scientific research undertaken to date concludes that there is no evidence that lower power wireless networks pose health threats to users or to the general public. Wi-Fi technology emits a signal that is a fraction of that generated by other commonly used radio-based technologies.

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In March 2007 a Wi-Fi Alliance-supported exposure assessment study conducted by Dr. Kenneth Foster from the University of Pennsylvania was published in the Health Physics Journal. The study evaluated 356 readings at 55 Wi-Fi sites in four countries (France, Germany, Sweden and the United States), and found Wi-Fi to operate substantially below the internationally-recognized RF safety guidelines. The Foster study is one of the largest, but other measurement studies have found similar, very low exposure levels from Wi-Fi. (See Foster KR, Radiofrequency exposure from wireless LANs utilizing Wi-Fi technology. [Health Phys.](#) 92:280-9, 2007.)



**Does the Wi-Fi Alliance consider additional studies on the connection between exposure to RF and health necessary?**

The Wi-Fi Alliance is confident both in its technology and in the results of the findings by the World Health Organization and other bodies who have concluded there is no evidence that lower power wireless networks pose health threats to users or to the general public. We believe that additional studies will find the same.

**Is the Wi-Fi Alliance aware that there are some studies that have reported adverse health effects from exposure to RF at low power levels?**

We are confident in the research conducted to date and reviewed by the World Health Organization and other bodies that find the preponderance of scientific evidence demonstrates that lower power wireless networks do not pose health threats to users or to the general public.

**Can electromagnetic fields from Wi-Fi or other RF sources cause headaches or other symptoms related to hypersensitivity (also described as electromagnetic hypersensitivity or EHS)?**

Controlled scientific studies have shown that symptoms of those who claim some form of sensitivity do not correlate with actual exposure to electromagnetic fields (EMF).

The World Health Organization concluded that "EHS [Electromagnetic Hypersensitivity] has no clear diagnostic criteria and there is no scientific basis to link EHS symptoms to EMF exposure." Further information can be obtained from the World Health Organization (WHO) fact sheet on the topic:

<http://www.who.int/mediacentre/factsheets/fs296/en/index.html>

**Some people have expressed concern when phone masts/towers are placed near schools. Should we be concerned about Wi-Fi transmitters in schools?**

The WHO published a fact sheet in May 2006 on base stations and wireless networks. Their opinion after studying the latest research findings was that neither mobile phone masts nor wireless network emissions present a threat to public health. In addition, a recent study by Dr. Ken Foster of the University of Pennsylvania concludes "Given the low level of exposure to people from RF fields from wireless networks in comparison to that from other sources of RF energy that are ubiquitous in modern environments, any health concerns about wireless networks would seem to be moot."

<http://www.who.int/mediacentre/factsheets/fs304/en/index.html>.

<http://hps.org/hpspublications/articles/wirelessnetworks.html>

**How can one assess the safety of radio signals from Wi-Fi systems and cell phone towers?**

The levels of radio signals from Wi-Fi systems and cell phone towers may be compared against the limits in the international exposure guidelines. The WHO states: "There have been no adverse health consequences established from exposure to RF fields at levels below the international guidelines on exposure limits published by the International Commission on Non-Ionizing Radiation Protection."

[http://www.who.int/peh-emf/meetings/ottawa\\_june05/en/index4.html](http://www.who.int/peh-emf/meetings/ottawa_june05/en/index4.html)

<http://www.who.int/mediacentre/factsheets/fs304/en/index.html>

**Can Wi-Fi technology be used safely in schools?**

Safety standards include large margins of safety to protect the public. The UK Health Protection Agency recently concluded that "On the basis of current scientific information, exposures from Wi-Fi equipment satisfy international guidelines. There is no consistent evidence of health effects from RF exposures below guideline levels and no reason why schools and others should not use Wi-Fi equipment."

[http://www.hpa.org.uk/radiation/understand/radiation\\_topics/emf/wifi.htm](http://www.hpa.org.uk/radiation/understand/radiation_topics/emf/wifi.htm)