

PART 2

Why the Health Protection Agency advice on Wi-Fi cannot be relied upon

I want to show that the guidelines and opinions currently offered by the HPA on the health effects of Wi-Fi are flawed. The reasons are:

1. The HPA downplay evidence of health damage by carefully chosen responses, misleading statements and clever manipulation of the evidence.
2. The guidelines themselves set up by the ICNIRP are only intended to protect against short term (6 minutes) heat shocks and burns. They do not protect against long term 'low' level exposure.
<http://www.icnirp.de/documents/emfgdl.pdf> .
The HPA are still basing the whole of their 'safety' advice on these out of date and inappropriate guidelines.
3. Most astonishing of all, the HPA's very own Chairman, Sir William Stewart, has been publicly calling for caution in the role-out of this technology, and even wants an investigation into Wi-Fi in schools – he is now at odds with his own organisation which should make people think twice before relying on the HPA advice. He also stated that the WHO recommendations are not an accurate reflection of the science. This is in line with a growing body of scientists who have done research in this area.
4. The NRPB is half funded by the phone industry and is now part of the HPA
5. All agencies whether it be BECTA, the Departments of Health or of Education, rely upon the HPA.

UK media and the Wi-Fi debate

The Times started the debate on Wi-Fi in schools in November last year when it reported that schools were dismantling Wi-Fi at the request of parents who had become aware of the research and the fact that the ICNIRP guidelines which the UK subscribe to are only intended to protect against short term heating effects despite the fact that there is much evidence for other biological effects at exposures below these guidelines as evidenced in the Stewart Report

<http://www.timesonline.co.uk/article/0,,2-2461748.html>

http://www.timesonline.co.uk/tol/life_and_style/health/features/article665419.ec
[e](#)

In April, the Sunday Independent leaked the fact that Panorama had staged a 'coup', an interview with the rarely seen and most eminent establishment scientist, Sir William Stewart, Chairman of the Health Protection Agency, HPA.
<http://news.independent.co.uk/health/article2472133.ece>
<http://news.independent.co.uk/health/article2472140.ece>
<http://news.independent.co.uk/health/article2472139.ece>
http://comment.independent.co.uk/leading_articles/article2472074.ece

It was interesting that after this leak, the HPA web site proclaimed that Sir William had not said what the paper claimed he had said, namely that Sir William is calling for an investigation into the effects of Wi-Fi on children in schools! This was a month before the programme was aired. See appendix 2 for transcript of Sir William's statements

This is what appeared on the HPA web site:

Health Protection Agency statement - 22 April 2007

(bold- my emphasis)

*The **statements** attributed to Sir William Stewart, Chairman of the Health Protection Agency (HPA), in The Independent on Sunday **are not his**. Sir William is being pressed by lobbyists to condemn Wi-Fi and is unprepared to do so. He has not taken a position on Wi-Fi.*

Wi-Fi devices are of very low power, much lower than mobile phones. The HPA and Sir William have always pressed for more research into these new technologies. The only firm precautionary advice issued by the HPA is about children's use of mobile phones.

However just before Panorama was shown on 21st May 2007, this statement was removed and another put in its place. Its just as well as anyone who saw the programme would plainly see Sir William calling for an enquiry!! Thus its obvious that the HPA is misleading the public on this issue!

HPA statement - 18 May 2007

WiFi Summary

Basics

WiFi is short for Wireless Fidelity and is a particular type of wireless local area network (WLAN) - i.e., you don't need to plug your computer into a phone network via a cable. There are many types of WLAN but all of them allow two or more computers to form a network using radio frequency (RF) signals. They allow users to access and share data, applications, internet access or other network resources in the same way as wired (cable) systems.

Health concerns and HPA advice

There is no evidence to date that exposure to the RF signals from WiFi and WLANs adversely affect the health of the general population. In addition, HPA advice is:

** The signals from WiFi are very low power, typically 0.1 watt (100 milliwatts) in both the computer and the mast (or router) and*

resulting exposures should be well within internationally accepted guidelines.

** The frequencies used are broadly the same as those from 'traditional' RF applications.*

** Based on current knowledge, RF exposures from WiFi are likely to be lower than those from mobile phones.*

Conclusion

On the basis of current scientific information WiFi equipment satisfies international guidelines. There is no consistent evidence of health effects from RF exposures below guideline levels and therefore no reason why schools and others should not use WiFi equipment .

The HPA received a number of letters from various groups pointing out that the website was now misleading as it did not accurately reflect the views of its Chairman as expressed on Panorama.

A couple of weeks later, the statement changed again making the concession from 'no evidence' to 'no consistent evidence' referring to the general population and adding a paragraph relating to Sir William Stewart as follows:

http://www.hpa.org.uk/radiation/understand/radiation_topics/emf/wifi.htm

Current HPA statement

WiFi Summary

General position

*There is **no consistent evidence to date** that WiFi and WLANs adversely affect the health of the general population.....*

*On the basis of the studies so far carried out in house, the Agency sees no reason why WiFi should not continue to be used in schools. However with any new technology it is a sensible precautionary approach, as happened with mobile phones, to keep the situation under ongoing review so that parents and others can have as much reassurance as possible. That is why **our Chairman, Sir William Stewart, has stated it would be timely to carry out further studies as this new technology is rolled out.** The Health Protection Agency is discussing this with relevant parties.*

Basics

.....
Key Points

** There is **no consistent evidence to date** that exposure to RF signals from WiFi and WLANs adversely affect the health of the general population*

.....
** The frequencies used are broadly the same as those from **other RF applications such as FM radio, TV and mobile phones***

.....
For a line by line criticism of the HPA position please see appendix 1 below
<http://www.hese-project.org/hese-uk/en/niemr/news.php?id=wifinews>

The HPA is still relying on the WHO/ICNIRP guidelines despite the fact that its Chairman stated that these guidelines are wrong. Thus the whole HPA statement goes out the window!

A importance of the Panorama programme

You can see Panorama online at:

<http://news.bbc.co.uk/1/hi/programmes/panorama/6674675.stm>

The programme has been criticised by the industry and in certain parts of the media, This is only to be expected given the economic power of the industry. The government also get £15 billion a year in tax revenue from the multi £billion industry.

The programme interviewed scientists all of whom are leading experts in research into effects from microwave radiation. It also featured Dr Repacholi, the founder of ICNIRP and former head of the WHO EMF Project as well as Sir William Stewart. In the programme Sir William Stewart openly criticised the WHO and its advice for the first time ever. However it is in the interests of the industry and certain parts of the media (including most of the rest of the BBC!) that the programme would not be widely watched. The Guardian, for example, heavily criticized the programme BEFORE its broadcast, without even mentioning the appearance of Sir William in the programme.

BBC News has shown bias towards the industry by cherry picking industry supporting scientists when presenting commentary on the news. Often these scientists are physicists or engineers, who have no knowledge of cell biology, yet they are presented as experts on the potential biological health risks, on which they have done no research themselves.

The criticisms of the programme centre around the measurement taken in schools with 15 laptops all on and connected to the internet. The radiation level in the classroom was found to be equivalent to 3 times the level in the main beam from a nearby phone mast. The criticism was that the comparisons were not taken at equal distances from both apparatus. However the point is to measure the radiation where the children will be sitting. They do not sit 1m from a phone mast/antenna!

What the programme didn't focus on were the permanent radiation levels emitted by the Wi-Fi routers in the school. They are on and radiating all day long inside the school, exposing the children and teachers to similar levels as those from a mast. When the laptops are in use, the levels go up to over 3 times that from the main beam of a mast.

The point is that The Stewart Report S1.42 said that schools should not be in the main beam from a mast.

Epidemiological evidence

There is epidemiological evidence from Germany and Israel of a trebling of cancer incidence after 10 years in the main beam from phone masts. The UK government refuses to do any epidemiological research and so we only have anecdotal evidence of increases of cancer around phone masts and also in teachers in schools in the main beam from phone masts. All these can be criticised as they are not 'properly' conducted pieces of research, and this is how the government wants them to remain.

<http://www.tetrawatch.net/papers/naila.pdf>

http://www.powerwatch.org.uk/news/20050207_israel.pdf

<http://www.timesonline.co.uk/tol/news/uk/article1687491.ece>

<http://www.timesonline.co.uk/tol/news/uk/article1687491.ece>

Is Dr Clark (HPA spokesman) misleading the public?

Dr Clark Quote from the Times 11 Dec. 2006 by Nicki Daniels

" When we have conducted measurements in schools, typical exposures from wi-fi are around 20 millionths of the international guidelines levels of exposure to radiation. As a comparison, a child on a mobile phone receives up to 50 per cent of guideline levels. So a year sitting in a classroom near a wireless network is roughly equivalent to 20 minutes on a mobile. If wi-fi should be taken out of schools, then the mobile phone network should be shut down, too - and FM radio and TV, as the strength of their signals is similar to that from wi-fi in classrooms."

http://www.timesonline.co.uk/article/0,,8123-2495352_1,00.html

NOTE

UK (ICNIRP) guidelines are 10 W/m² and Wifi readings are about 0.001 W/m² across the classroom. This makes 0.01% of the guidelines, not 20 millionths!! Clearly therefore Dr Clark's statement is untrue.

http://www.powerwatch.org.uk/news/20070518_wifi_panorama.asp

18/5/07 Powerwatch comments on Dr' Clark's statements

Exerpt

Powerwatch believes that the comments by HPA spokesman, Dr Mike Clark, that a 20 minute mobile phone call gave as much exposure as a year in a wLAN classroom is complete rubbish. Powerwatch's measurements and calculations suggest that a typical 20 minute mobile phone call would cause a similar exposure from a few hours up to one day in the classroom. The current

Department of Health Chief Medical Officers' advice is that children and young people should only use a mobile phone for really important calls, and yet here we are forcing our youngsters into almost full-time exposure at school to such pulsing microwave radiation. This is irresponsible and could even be seen as possible child abuse.

Its interesting to note that the Salzburg guidelines for indoor exposure set a limit of 0.0000011 W/m². Thus the emissions from WiFi are 1000 times higher than the Salzburg guidelines! (NB. Microwave radiation from WiFi or phone masts is trillions of times higher than the naturally occurring background levels that were there up until 15 years ago when these systems were rolled out)

APPENDIX 1

Dr Goldsworthy statement in response to the statement on Wi-Fi in schools from the HPA

<http://www.hese-project.org/hese-uk/en/niemr/news.php?id=wifinews>

There is no evidence to date that exposure to the RF signals from WiFi and WLANs adversely affect the health of the general population.

There can be no laboratory evidence that human health is affected by wireless networks because the necessary experiments have not been done, nor have studies been made of chronic exposure of individuals to the radiation from mobile phones. However, several international studies suggest that they pose a significant threat to health.

Also, a number of individuals have presented credible accounts of how they have been personally affected by the introduction of wireless networks and these cannot be ignored.

Any assertion that wireless networks (WLAN) must be safe because not everyone shows obvious physical symptoms, ignores the well-being of those that do. Also, these symptoms could be an early indicator of underlying damage that may eventually affect the remainder of the population.

The signals from WiFi are very low power, typically 0.1 watt (100 milliwatts) in both the computer and the mast (or router) and resulting exposures should be well within internationally accepted guidelines.

Also, the international guidelines are not appropriate. Only acute short-term exposures to unmodulated microwaves are covered. This clearly does not apply to chronic exposure to low-level digital communications as used in wireless networks.

It is also an undeclared assumption in this statement that the only harmful effects of non-ionising radiation are due to heating. Frequency, waveform and quantum effects are completely ignored, even though these are established features of normal bio-electromagnetic responses in living organisms such as humans.

The frequencies used are broadly the same as those from 'traditional' RF applications.

'Traditional' has no meaning: tradition is a subjective comparison without content, and the assumption is that carrier frequencies are the only relevant parameter. WiFi is indeed part of the IEE 802.11 standard, and the carrier frequencies are similar to those used by mobile phones. The comparison is clearly intended to suggest that everything else has a clean bill of health, and this is not the case.

The frequencies and signals used by WiFi *are* similar to those used by mobile phones, and recent studies have shown these to be genotoxic, and are associated with an increased risk of cancer and a loss of fertility

Based on current knowledge, RF exposures from WiFi are likely to be lower than those from mobile phones.

Again this statement is imprecise at best. Current knowledge is not so poor that we do not know what a classroom exposure regime is like. Nor is it a valid comparison to set wireless networks against mobile phones. The comparison is intended to suggest that even if there is a doubt about excessive mobile phone use, there can therefore be no doubt about wireless networks. If there is a doubt about phones (and there is substantial doubt) the underlying assumption is that they can only be harmful on the scale of energy absorption. This is an unwarranted assumption given findings from research into modulation frequency and waveform effects on living organisms.

On the basis of current scientific information WiFi equipment satisfies international guidelines. There is no consistent evidence of health effects from RF exposures below guideline levels and therefore no reason why schools and others should not use WiFi equipment.

It does not take much scientific information to see that the international guidelines for exposure greatly exceed any likely exposure in a classroom. But as shown above, the issue of the relevance of those guidelines must be in considerable doubt.

The 'consistency of evidence' is a function of the underlying assumption of experimental conditions (ie, which parameters matter), and of what constitutes a 'health effect', not just a physiological response (HPA always cites sight as a harmless EMF bio-response). 'RF exposures below guidelines' is an uninformative broad generalisation of what factors have been examined. Some studies do indeed show a highly consistent effect on specific cell physiology, for example, in cases where that effect is highly significant for health effects.

This statement therefore appears to acknowledge that indeed evidence does exist of adverse health effects, somewhat in contradiction of the first point in the HPA statement.

It is a complete *non sequitur* that there is 'therefore no reason' for schools to avoid wireless networks.

h.e.s.e.-UK conclusion:

The evidence is there, the consistency in research is there, the inadequacy of exposure guidelines is clear. And in the face of all this, it is deemed wise to chronically expose children and teachers while discussions continue, and while a perfectly acceptable alternative (wired network points) exists.

If a new drug were to be discovered that caused similar symptoms in even a minority of patients, it would probably be taken off the market and certainly not used for regular mass medication. On this basis, the case for the safe universal use of WiFi in schools has not yet been made and it would be wise to withdraw it pending further independent laboratory trials.

Failure to do this might call into question the mandate of the Health Protection Agency as a truly 'independent body that protects the health and well-being of the population'.

(h.e.s.e.-UK is represented at the HPA EMF Discussion Group: minutes [here](#)

http://www.hpa.org.uk/radiation/understand/radiation_topics/emf/emfdg/index.htm)

***Addendum:* Since the Panorama programme elicited such a response, including a substantial number of people removing domestic wireless networking, the following was added by the HPA to their statement:**

'However with any new technology it is a sensible precautionary approach, as happened with mobile phones, to keep the situation under ongoing review so that parents and others can have as much reassurance as possible. That is why our Chairman, Sir William Stewart, has stated it would be timely to carry out further studies as this new technology is rolled out. The Health Protection Agency is discussing this with relevant parties.' [h.e.s.e.-UK remains unclear as to what kind of precautionary approach at all has been adopted with regard to mobile phones.]

APPENDIX 2

To view the whole programme or the transcript click

<http://news.bbc.co.uk/1/hi/programmes/panorama/6674675.stm>

(If you have problems we can provide a copy)

EXCERPTS FROM PANORAMA transcript

KENYON: Sir William Stewart has a pedigree it would take a bold politician to ignore. Chief Scientific Adviser to Margaret Thatcher, and then called upon by Tony Blair's government in 2000 to examine mobile phones, masts and their impact on our health. After looking at the evidence for a year, he couldn't rule out the possibility there may be biological effects.

STEWART: It means that basically there may be changes for example in cognitive function. Secondly there was some indications that there maybe cancer inductions. Thirdly there were some molecular biology changes within the cell and these were issues that we had to bear in mind as one came to one's broad conclusions.

KENYON: The report made a raft of recommendations. At the heart of it the question that had been worrying so many - should our children be exposed to mobile phone masts? Sir William was concerned enough to recommend what he called: "a precautionary approach."

STEWART: We recommended, because we were sensitive about children that masts should not necessarily impact directly on areas where children were exposed, like playgrounds and that.

KENYON: The government knows Sir William has concerns about siting masts near schools. Why then are we now placing them inside classrooms in the form of wi-fi mini masts? They emit the same sort of radiation, so what's its potential impact in the classroom. We went to a school in Norwich to find out. The idea to compare the level of radiation from a typical mobile phone mast with that of a wi-fi enabled laptop in the classroom.

Xxxxxxxxxxxxxx

KENYON In Swedish schools, even if there's only one person apparently affected by wi-fi the system is removed and the classroom shielded. You'd think our government would base its decisions on the advice of their top man, the one it employed to protect our health, Sir William Stewart, but instead it seems to have turned to others. **First the World Health Organisation. It's robust in its language saying there were no adverse health effects from low level long-term exposure.**

Is that an accurate reflection of the science do you think?

STEWART: I think they are wrong.

KENYON: How are they wrong?

*Sir WILLIAM STEWART Chairman, Health Protection Agency **Because there is evidence, and the Stewart Report pointed out some of that evidence.***

KENYON: So why do you think it is that the WHO, one of the most influential public health bodies in the world continues to put out that message?

STEWART: I think that they've got to review the statement that they're making.

KENYON: But in your view, not an accurate reflection of the science that's out there?

STEWART: I think it is not an accurate reflection.

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KENYON: We asked the government for an interview about all this. It said no and referred us instead to the Health Protection Agency. The Chairman of that is.... hang on a minute - it's Sir William Stewart! The very man who has indicated to Panorama just how uncomfortable he feels about the speed with which wi-fi is being rolled out.

STEWART: I believe that there is a need for a review of the wi-fi and other areas.

KENYON: How important is it to do that swiftly?

STEWART: I think it's timely for it to be done now.

KENYON: If it's not?

STEWART: Who knows?