

Appendix 2

Response to questions from the campaign group PAMT (A precautionary Approach to Microwave Technologies)

1. How will your review take account of ICNIRP's acknowledgement that their conclusions could not safely be extrapolated to apply to children?

A This question has been answered. Letter to Dari Taylor MP from Dr David Heymann, Chairman of HPA, 3rd Sept 2009.

2. Will your report concentrate on the key question of non-thermal biological effects?

A This question has been answered. Letter to Dari Taylor MP from Dr David Heymann, Chairman of HPA, 3rd Sept 2009.

3. Is it correct that there is a review of Wi-Fi by the HPA and the results are expected in October 2009?

A The study of Wi-Fi was announced in 2007 and there is information about it on the Agency's website. Some preliminary results have already been published and the study is expected to be completed in 2010. For details, see

<http://www.hpa.org.uk/HPA/Topics/Radiation/UnderstandingRadiation/1199451940308/>

4. Can we see a copy of the brief?

A Full details were published in 2007 when the study was announced. See the link in the answer to Q3 above.

5. Who is undertaking the study?

A The Health Protection Agency is funding the study and it is being carried out by Agency staff.

6. How is the research funded i.e. is it independent?

A The study is 100% funded by the Health Protection Agency. The Agency is an independent body set up by Act of Parliament in 2004.

7. Has consideration been given to the precautionary approach other countries have taken, and as very clearly stated in the European Parliamentary decisions of September 2008 and April 2009, and especially in light of the BioInitiative Report 2007?

A This question has been answered. Letter to Dari Taylor MP from Dr David Heymann, Chairman of HPA, 3rd Sept 2009.

Answers to additional questions

1. How often does the HPA review the science into effects of radiofrequency radiation and/ or is this ongoing? How many people are working on this and what are their backgrounds?

A HPA conducts formal reviews of the science either directly or through the independent Advisory Group on Non-ionising Radiation (AGNIR) as and when it considers this is necessary. Reviews of RF fields have been performed relatively frequently in recent years, reflecting that national and international research programmes have been taking place on this topic, leading to a steady stream of new research publications. AGNIR is just starting the next review, which is expected to take 2-3 years to complete. In between these formal reviews, which lead to reports, our staff gather and read scientific papers, attend conferences and workshops, and liaise with scientists in other organisations. Thus, review is ongoing process.

The Wi-Fi project is being carried out by competent HPA staff. The project's methods and results will be published when they are finalised along with all information necessary for them to be appraised critically by interested parties. Authorship will be listed in the publications, as is customary. The results of the study, and of other studies on radio signals and health, will be used as the basis for a wider health risk review.

We are not able to give out personal information about our staff.

2. *Who is leading the current investigation?*

A Please see answer to Q 1 above.

3. *Please could you provide details of the background of the people carrying out the research- names, professional qualifications and experience?*

A Please see answer to Q 1 above.

4. *How can the HPA demonstrate that the configuration in the mock classroom used in the review study is typical of an average classroom, and what would the situation be otherwise in a non average classroom?*

A The research includes plans for measurements in typical classrooms a various schools.

5. *Who determines what the average classroom is like?*

A Please see answer to Q 4 above.

6. *How are the biological health effects as a result of exposure to be taken into account?*

A The study is not looking at biological effects specifically but evidence for such effects is considered in broader reviews of possible health impact of radio waves. Strictly there is no such thing as a “biological health effect”. There are separate classifications for biological effects and health effects. Broadly the former is concerned with experiments on cell cultures in laboratories, whereas health effects are in humans. There is also a separate classification for health effects in animals.

7. *How have exposures through walls into adjoining classrooms been taken into account?*

A Please see answer to Q 4 above.

8. *What account has been taken from exposure of the routers (which may well be left switched on for the full school day) as well as the pcs?*

A Please see answer to Q 4 above.

9. *What angles and measurements from routers were taken in the study?*

A Please see answer to Q 4 above.

10. *How has the study accounted for the fact that the Wi-Fi could be only part of the child's exposure whilst in the school i.e. there could be a nearby DECT phone, a phone mast outside the building, etc?*

A. Please see answer to Q 4 above.

11. *Have teachers been asked to give anecdotal evidence of effects in children or themselves since the Wi-Fi has been installed? How is such evidence being collated?*

A There are no plans to record anecdotes from teachers or anyone else.

HPA Review outcome

12. *When and where will a copy of the findings be published for public information?*

A The results of the study will be published in the scientific literature. Some preliminary results have already been published. See the HPA website for appropriate links

(<http://www.hpa.org.uk/HPA/Topics/Radiation/UnderstandingRadiation/1199451940308/>)

Links to other European guidance

13. *How will the study take into account the ICNIRP review that is ongoing?*

A The HPA takes due note of recommendations from independent advisory groups and international bodies such as ICNIRP when giving advice on health risks. ICNIRP published a statement in August 2009 and reaffirmed its 1998 guidelines. It also published its review of RF in September 2009. See the ICNIRP website <http://www.icnirp.org/>

14. *How does the study take into account that the ICNIRP guidelines (page 546) state “...children, the elderly and some chronically ill people, might have a lower tolerance for one or more forms of NIR exposure....may be useful or necessary to develop separate guidelines...?”*

A There seems to be a misunderstanding here. ICNIRP gives this as the reason for the extra precaution it adopts in its advice on guidelines for the public, which are more restrictive than guidelines for adults working with radiowaves for example. So there are two sets of

guidelines, one for occupational exposure the other for the public. The guidelines for the public are the “separate guidelines” referred to.

15. How does the study take account of the concerns on the use of this technology especially close to children, as expressed in the European Parliamentary Resolutions of September 2008 and April 2009 and of the BioInitiative Report 2007?

A The Health Protection Agency reviews the science rather than political initiatives. We are obviously aware of the Bio-Initiative Report and what it proposes, but it is not a recognised scientific advisory body.

16. How does the study take into account that use of Wi-Fi in schools is at such variance with BioInitiative levels and international opinion?

A Please see answer to Q 15 above and we are not aware of any particular “international opinion” on the use of wireless local area networks (WLANs, Wi-Fi is a type of WLAN). WLANs are widely used throughout the world and this was one of the arguments for good independent scientific studies of the possible exposures, such as the one being carried out by HPA.

17. Scientific studies point to numerous adverse long term health effect (such as leukemia in children, other cancers and neurodegenerative illnesses such as premature dementia and Alzheimer’s disease) as a result of exposure to microwave radiation. Can the HPA assure parents that in 15 years time they will not see their children’s health affected by Wi- Fi and phone mast emissions and an increase incidence of these health issues in Stockton?

A Please see the first part of the answer to Q 1 above. Our Advisory Groups carry out regular reviews of published scientific evidence and, where there is clear evidence of a risk to health, the Agency has a duty to give appropriate advice.

18. In light of the Stewart Report, BioInitiative Report, European Parliamentary decisions of September 2008 and April 2009, concerns expressed by European Environment Agency etc why are mobile phone masts still being sited close to schools and homes putting children and resident’s health at risk? What action is being taken to address this issue by the HPA?

A The HPA gives scientific advice. The Government decided what was appropriate following the Stewart Report in 2000 and the NRPB/HPA advice in 2004/5. The Agency is not responsible for the planning laws.

19. The World Health Organisation (WHO) recognises ‘electro-sensitivity’. In Sweden, electro-sensitivity is recognised as a disease and the appropriate medical care is made available. The HPA in contrast does not acknowledge this condition. Have the WHO and Swedish government made a mistake in recognising this condition?

The WHO and HPA recognises there are people who claim to be electrosensitive. Indeed the HPA issued a report on electrosensitivity in 2005.

http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1247816558210?p=1197637096018

However you are implying that causation is recognised by WHO and in Sweden. This is not the case. In Sweden the phenomenon is recognised as a physical impairment but not as a medical condition. WHO does not recognise it as a medical condition. Scientific studies in laboratory controlled conditions have been carried out in many countries and have failed to demonstrate causation.

Current HPA advice and information

20. Barry Trower (an independent scientist) explained that there is the possibility that microwaves can affect the eggs (ova) in young girls. He further explained that DNA damage caused by microwave radiation is irreparable and that it is passed on from mother to daughter, generation after generation. Could the HPA tell us why he is wrong to advise us of this?

A Barry Trower has been a campaigner on this issue for several years. He is a science teacher at a community college in SW England but I am not aware that he has published research on mobile phones and health in science journals.

21. Can the HPA explain why children are advised to limit their mobile phone use to emergencies only, yet are exposed all day long in a classroom to Wi-Fi radiation from both routers and laptop computers which are positioned close to their bodies.

A When using a mobile phone handset, people can be at significant fractions of the ICNIRP guidelines (can be up to 50%, but depends on the phone type/model), hence the HPA precautionary advice. For Wi-Fi exposures are relatively small fractions of ICNIRP guidelines but there are not many studies. Hence the need for the HPA research. Decisions should be based on reliable scientific information.

22. HPA state that there is no consistent evidence of adverse health effectsdoes that mean that they are aware of evidence indicating that such technologies are harmful?

A No, we are not aware of any clear unambiguous scientific evidence that exposures below ICNIRP guidelines are harmful to health.

23. It is reported on the Brain Tumour UK website that brain tumours have increased by approximately 10% over the last 10 years. Can the HPA confirm that is not associated or linked to wireless technologies such as Wi-Fi, phone masts or mobile phone use?

I have looked at the website and can find no reference to an increase, nor is there any reference to wireless technologies. However I couldn't spend a lot of time looking and do not wish to dispute that figures may be increasing. But there is an alternative and more credible hypothesis. People are living longer and are therefore more likely to die of cancer of all types. I also understand that the main increase in brain tumours has occurred in people aged over 70 and 80 who are not the most avid mobile phone users in the community.

24. ICNIRP guidelines on non-ionizing thermal radiation levels are based on a 6 minute exposure on a bag of salt water (thermal). Could the HPA explain how it deems it to be safe to expose our children to approximately 6000 hours over a 5 year period in a nursery or primary school classroom? Could the HPA furnish us with the appropriate study or research paper that has managed to satisfy the HPA hat it is safe to do this?

A Please see the answer to Q 14 on the ICNIRP guidelines for the public.

25. Not everyone in the scientific, medical and political community agrees that wireless technology is safe. There are many studies showing that exposure to microwave radiation, even at low levels, causes change or damage to living cells. Is the HPA able to confirm that every study and research paper is wrong in its findings and conclusions and, therefore, finds it unnecessary to apply the 'precautionary principle'?

A Not everyone is convinced but HPA's advice is based on the "scientific consensus" about research published in science journals. This approach is respected world wide. Even in the BioInitiative report (Section 6), Henry Lai's review of cell damage states "... it is apparent that there is no consistent pattern that radiofrequency radiation exposure could induce genetic damages/changes in cells and organisms." He also points out that most evidence relates to relatively high exposures, "...there is no indication that RFR at levels that one can experience in the vicinity of base stations and RF-transmission towers could cause DNA damage."

26. HPA state no consistent evidence of effect on the general population but what of those groups that are more vulnerable and do not fall under the heading of general population?

A Please see the answer to Q 14 on the ICNIRP guidelines for the public.

27. The ICNIRP guidelines state unequivocally that the microwave radiation levels which are calculated for the general population will need to be lower so as to protect vulnerable groups, such as the elderly, sick and children. Would the HPA furnish us with names and addresses of nursery or primary schools where it has recommended or advised a reduction in radiation levels? (or indeed intervened?)

A Please see the answer to Q 14 on the ICNIRP guidelines for the public.

28. It is a fact that children are more susceptible to radiation. What measures are therefore in place to specifically protect them?

A Please see the answer to Q 14 on the ICNIRP guidelines for the public.

29. Why should we trust the HPA conclusions as opposed to the many scientists, doctors, health experts and the European Parliament who are warning us that the exposure levels are too high in the UK and action needs to be taken quickly?

A Please see answers to Q 15, Q18 and Q25

30. The HPA say that they would like to give parents as much reassurance as possible and wish to take a precautionary approach, why then have possible effects on children not been monitored first? (Such as children's melatonin concentrations over time, whether reaction times or other cognitive measures are affected, whether there are increased seizures for children with epilepsy, whether some children do have more headaches, rashes, gastrointestinal upsets... etc in Wi-Fi environments and sitting close to Wi-Fi laptops, whether fertility of male teachers is affected over a 3 month period, whether female teachers experience increased numbers of miscarriages)

A Before performing studies of the type suggested here, we need good basic information on what people's exposures are, otherwise any study of health or symptoms can be valueless. Hence HPA is doing basic research on exposures so a reliable risk assessment can be carried out.

31. How does the Government contribute to the HPA position on the issue?

A The Health Protection Agency was set up by an Act of Parliament in 2004 to provide government and others with independent scientific advice on infectious, chemical and radiation hazards.

32. The use of mobile phones and personal digital assistants by pupils in schools (provided by the school) is becoming more common now. BECTA is encouraging schools in this. Since this clashes with the advice of the Government's Chief Medical Officers and the Stewart Report, what is the HPA's view of this?

A I am aware that BECTA are encouraging the use of Wi-Fi in schools. I was not aware that they are promoting the use of mobile phones or other devices.

33. Many scientists are saying that low doses of radiation are as dangerous or more dangerous than a high dose because with a high dose the antioxidants repair the body but with a low dose it comes in "under the radar" and the body is not aware until the damage is occurring; also the effects of are accumulative in the human body; and the damage may simply take longer to occur than a higher dose. What is the HPA's view on this given that it states, in relation to Wi-Fi the signals, they are very low power?

A Please see answer to Q25.

General questions on Wi-Fi

34. Why has Wi-Fi not been pre market tested?

A Questions about market testing should be directed to BECTA or the Wi-Fi Alliance.

3 November 2009

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