



Mobile Technology and Health: frequently asked questions

In terms of health issues, EE (formerly Everything Everywhere Ltd and Orange PCS Ltd) operations are controlled by UK and international bodies including the Health Protection Agency (HPA), the International Commission on Non-Ionising Radiation Protection (ICNIRP) and the World Health Organisation (WHO).

They are responsible for evaluating research and developing the health guidelines within which a variety of radio technologies operate. These include television and broadcast radio - as well mobile phones and their associated base stations.

The maximum power output permitted in EE installations is set by ICNIRP at 9W/m^2 (watts per square metre). There is no verified scientific evidence that mobile phone base stations pose a threat to health while transmitting at or below this level.

However, the very widespread presence of mobile phone technology has lead some to question the implications for human health. Below are EE's answers to some frequent questions on this subject. More detailed information can be found from the sources detailed at the end.

1. Shouldn't we be cautious of this new technology?

The technology is not new. We have been using radio waves in general for over 100 years and radio at microwave frequencies for 60 years. As a result, the science community has had plenty of time to investigate radio and its health effects.

Europe has adopted the International Commission on Non-Ionizing Radiation Protection (ICNIRP) Exposure Guidelines for the protection of the general public. The ICNIRP limits have been established to protect the public from known effects (in the ICNIRP document it says, "*The main objective of this publication is to establish guidelines for limiting EMF* exposure that will provide protection against known adverse health effects*").

2. What are radio waves?

Radio waves are a natural form of electromagnetic energy similar to light. However, for communication use, radio waves are modified to carry messages. In the case of mobile phone equipment the radio waves produced are in the microwave region of the radio spectrum like some TV, radars, baby monitors, garage door keys, wireless computer networks and so forth.

3. Can radio waves affect human health?

The only known effect of radio waves - at the frequencies we use - is the so-called 'heating effect'. There is no other confirmed mechanism by which radio waves can affect human tissue. No heating effect takes place at the levels used by mobile technology.

*EMF means electromagnetic frequencies - of which radio waves form a part.

4. Shouldn't we use the precautionary approach in dealing with phone masts?

The mobile phone industry and many in the science community believe that all guidelines relating to emission limits should have a firm foundation in scientific evidence.

The scientific consensus at the present time (see below) is that there are no known health effects from radio waves transmitted at below guideline emission limits. This means there are no scientific grounds for imposing further restrictions beyond those stipulated in the guidelines.

5. What research is there?

To date, the World Health Organisation (an international body set up to collect the best medical knowledge from around the world) is aware of over 20,000 good quality studies on this topic; the huge majority of these show no adverse link between mobile phone technology and public health. It concludes:

"Extensive research has been conducted into possible health effects of exposure to many parts of the frequency spectrum. All reviews conducted so far have indicated that exposures below the limits recommended in the ICNIRP (1998) EMF guidelines, covering the full frequency range from 0-300 GHz; do not produce any known adverse health effect. However, there are gaps in knowledge still needing to be filled before better health risk assessments can be made." <http://www.who.int/peh-emf/research/en/>

Set against all this is a limited number of research findings. Many of which are based on research that has yet to complete peer-review or reproducibility tests and which suggest only that there *may* be biological effects - without demonstrating that these are harmful.

6. Aren't children more vulnerable?

In the UK, in June 2000, an expert group brought together to assess mobile phone risks - known as the IEGMP or Stewart Committee - said in their 'Clarification of Issues Discussed', *"Since there are no scientific grounds for setting guidelines below the levels set by the International Commission for Non-Ionizing Radiation Protection (ICNIRP) for the public, the Expert Group avoided setting exposure limits for school buildings and grounds below these limits. For the same reason it did not wish to recommend that there should be a particular distance between a base station and a school."*

In July 2005 the World Health Organisation (WHO) gave a statement regarding EMF. *"To date, all expert reviews on the health effects of exposure to RF fields have reached the same conclusion: 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 (ICNIRP, 1998)."*

The ICNIRP guidelines were developed to limit human exposure to electromagnetic fields (EMF) under conditions of maximum absorption of the fields, which rarely occurs, and the limits incorporate large safety factors to protect workers and even larger safety factors to protect the general public, including children. Thus, the limits in the ICNIRP guidelines are highly protective and are based on all the available scientific evidence."

For more health and science information about base stations see our website:
http://www.orange.co.uk/about/phone_masts/

For independent information

The Mobile Operators Association website includes a brief outline of some of the recent health reviews that have examined mobile phone technology and health, and their findings relevant to mobile phones and base stations - http://www.mobilemastinfo.com/information/radiowaves_and_health/health_reports.htm

Other useful web sites include;

- World Health Organisation EMF Project
<http://www.who.ch/emf>
- International Commission on Non Ionising Radiation Protection (ICNIRP)
<http://www.icnirp.de>
- The Radiation Protection Division of the Health Protection Agency (previously the National Radiological Protection Board)
www.hpa.org.uk
- Office of Communications (Ofcom – formerly Radio Communications Agency)
www.ofcom.org.uk/sitefinder/
- Information on the Department of Health's mobile telecoms health research programme
www.mthr.org.uk

Health and the Planning Process

Planning Policy Guidance Note 8, paragraph 98, states;

“It is the Government’s firm view that the planning system is not the place for determining health safeguards. It remains central Government’s responsibility to decide what measures are necessary to protect public health. In the Government’s view, if a proposed mobile phone base station meets the ICNIRP guidelines for public exposure it should not be necessary for a local planning authority, in processing an application for planning permission or prior approval, to consider further the health aspects and concerns about them.”

This policy has been tested in numerous appeals (many at public inquiry) and in the High Court. To date, no appeals by operators have been dismissed where perceived health effects was the main issue.

Although the application of this policy has been subject to challenge in the High Court, no decision granting planning permission for a mast has been quashed by the High Court where this policy has been applied.

- **Planning Process**

For more information on Planning Policy and Telecommunications please refer to Planning Policy Guidance Note 8. This information is available from the Department for Communities and Local Government web site www.planning.odpm.gov.uk/ppg/

There is also more information on this subject on the Mobile Operators Association web site at www.mobilemastinfo.com.

- **General enquiries**

For general enquiries you can also call the Orange free phone information line on 0800 783 5021 or email site.information@orange.co.uk.

For information about designing networks and radio technology you can also visit the Orange web site at www.orange.co.uk/about/community/orange_network.html or the Mobile Operators Association web site at www.mobilemastinfo.com