UK Health Security Agency

UK Report of National EMF Activities in 2024-25

Report to WHO International Advisory Committee, June 2025

About the UK Health Security Agency

UK Health Security Agency (UKHSA) prevents, prepares for and responds to infectious diseases, and environmental hazards, to keep all our communities safe, save lives and protect livelihoods. We provide scientific and operational leadership, working with local, national and international partners to protect the public's health and build the nation's health security capability.

UKHSA is an executive agency, sponsored by the Department of Health and Social Care.

UKHSA's information and advice about Electromagnetic Fields (EMF) can be found by following the onward link to "Our health protection services" and then to "Radiation":

https://www.gov.uk/government/organisations/uk-health-security-agency

Recent Developments

COMARE

The Committee on Medical Aspects of Radiation in the Environment (COMARE) is the UK's independent scientific expert committee that advises Government on the health effects of radiation, both ionising and non-ionising. COMARE has an EMF and Health Working Group (EAHWG), to advise COMARE on the health impacts and concerns associated with the exposure to EMFs. This includes reviewing available evidence on health effects and informing COMARE of the health implications for the UK population and further research priorities.

The EMF and Health Working Group met three times in 2024 and reviewed available evidence on the public health impact of radiofrequency radiation in the UK, with consideration of both existing and new technologies.

Details of the various COMARE subcommittees, subgroups and working groups are at the link below.

https://www.gov.uk/government/groups/committee-on-medical-aspects-of-radiation-in-the-environment-comare

General research activities related to EMF and health

The UK Government funds research on the effects on health of a range of EMF and mobile technologies mainly through the Department of Health and Social Care's National Institute for Health Research (NIHR) (https://crth.hpru.nihr.ac.uk/) and the UK Health Security Agency (UKHSA). Research currently being funded includes the following:

Airwave Health Monitoring Study (AHMS) Tissue Bank

This study, launched in 2003, was established to evaluate possible health risks associated with the use of Airwave, a TETRA-based digital communication system used by the police forces and other emergency services in Great Britain since 2001. The cohort provides a valuable opportunity for broader research into common diseases affecting a well-defined occupational group. By linking hospital admission, cancer and death registry data, AMHS can investigate the potential link between radiofrequency exposure and health outcomes such as cancer, cardiovascular and cerebrovascular disease and cognitive function. It includes 53,000 participants who are being actively and passively followed-up. The study supports a diverse

range of research projects run by researchers from within and outside Imperial College. AHMS is currently re-analysing associations between risk of developing cancer and TETRA use. Details of the study and its publications are available at: https://police-health.org.uk/.

COSMOS – Cohort Study of Mobile Phone Use and Health

COSMOS is an international cohort study which aims to investigate, prospectively, whether there are any health issues linked to long-term and heavy use of mobile phones and other Radio Frequency (RF) EMF technologies. The international study has 310,000 participants of which 105,000 are from the UK. Development of the next follow-up questionnaire is underway, incorporating updated questions on 5G. Key publications (Feychting et al., 2024; Traini et al., 2024) found no clear evidence linking frequent mobile phone use with brain tumours or headaches. National Health Service (NHS) England data linkage is complete and analyses on fertility, adiposity, and cardiovascular outcomes are progressing.

Other information about the international study can be found here: http://www.ukcosmos.org/.

SCAMP – Study of Cognition, Adolescents and Mobile Phones

The SCAMP study involves approximately 11,000 secondary school children and originally aims to investigate whether children's use of mobile phones and other technologies that emit radio waves might affect their neurocognitive or behavioural development, e.g. attention and memory.

In 2023, SCAMP researchers published a study modelling longitudinal RF-EMF exposure in SCAMP participants. The main contributor to the head and brain was own device use, in particular 2G mobile calls (Eeftens et al, 2023). The manuscript to investigate cognition and behaviours in relation to mobile phone and wireless device use and exposure to RF-EMF is scheduled to be submitted in June 2025.

Further details on SCAMP are available at: https://www.scampstudy.org/.

Areas of public and occupational concern, and national responses

Public concerns continue to focus on sources near to homes such as mobile phone base stations, power lines and substations. UKHSA also receives enquiries in relation to the use of devices such as Wi-Fi equipment, especially by children in schools, and on smart meters.

Activist groups and concerned individuals continue to argue that a wide range of health effects is caused by EMFs.

Answers to enquiries are framed in terms of exposure levels in relation to the International Commission on Non-Ionizing Radiation Protection (ICNIRP) guidelines and drawing on the conclusions that have been drawn in comprehensive reviews from international scientific expert groups, such as the Scientific committee on Health, Environmental and Emerging Risks (SCHEER), ICNIRP and the World Health Organization (WHO).

5G communications systems continues to be a particular area of concern, currently accounting for many of the EMF enquiries received by UKHSA. Responses explain how exposure from 5G systems is covered by the existing evidence, reviews, guidelines and policies, while acknowledging that fewer studies have been conducted at the mm-wave frequencies that are planned for use by 5G than at lower frequencies. Presentations have been given to stakeholders around the UK.

A measurement campaign was carried out in tandem with public communications on the topic of exposures from 5G base stations in the UK; this found exposure to be well within ICNIRP public reference levels. Measurements have been performed across different cities, various environments, and various types of masts (Streetworks, Lattice, rooftop). Both beam forming and non-beam forming masts have been sampled. The results of the campaign have now been published (Calderon et al., 2025).

The next phase of the project will be to perform measurements around small cells and leaky feeders across the Transport for London network. The higher frequency band to be used by 5G (FR2) is not yet deployed in the UK, but measurements will be performed once it becomes operational.

The UKHSA guidance webpages on base stations and 5G technologies are available here:
https://www.gov.uk/government/publications/mobile-phone-base-stations-radio-waves-and-health
https://www.gov.uk/government/publications/5g-technologies-radio-waves-and-health

Ofcom, the UK regulator for communications services, has continued to publish results of their measurements of EMF emissions close to 5G-enabled mobile phone base stations. Most radio spectrum licences issued by Ofcom include a condition requiring licensees to ensure compliance with general public EMF exposure limits, as explained here: https://www.ofcom.org.uk/spectrum/emf

Ofcom's measurements have shown that EMF levels are well within the general public EMF limits. Sites in Belfast, Cardiff, London and Liverpool have been visited multiple times in order to monitor any trends in exposure levels.

Occupational Exposure

Controls of workplace exposures in the UK are governed by the Health and Safety Executive (HSE) and the Control of Electromagnetic Fields at Work (CEMFAW) Regulations 2016. Common issues raised regarding occupational exposure follow a similar theme to those from the public, with a number of concerns relating to 5G infrastructure and smart meters. There have also been some enquiries around the use and charging of electric vehicles and persons at particular risk due to medical devices. As in previous years, there continues to be a focus on employees required to work within close proximity to telecommunications transmitters and the co-operation required between employers, operators and landlords, including the provision of RF meters, to allow this work to take place without persons exceeding occupational ICNIRP guideline levels.

Proximity to high voltage power supply and exposure of persons at particular risk also continue to be areas of concern. Whilst the majority of employers have used the EU non-binding guide to determine that exposures are below action levels, some have contracted consultancy services or purchased relatively cheap measuring devices online, which appear doubtful in their accuracy.

Contact for further information

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