

# Frequently asked questions on potential health effects of exposure to electromagnetic fields (EMF)



## Q1 WHAT ARE THE COMPETENCES OF THE EUROPEAN UNION IN EMF MATTERS?

The Treaty on the Functioning of the European Union does not confer the European Union any competence to legislate in the area of protection of the general public from the potential effects of EMF and leaves the primary responsibility with the Member States.

The Council has nonetheless adopted Recommendation 1999/519/EC which establishes a set of basic restrictions and reference levels in order to provide some guidance to the Member States. This Recommendation also requires the European Commission to keep the possible health effects of EMF under review.

## Q2 WHAT DOES THE EU DO AS REGARDS POTENTIAL HEALTH EFFECTS OF EXPOSURE TO EMF?

The EU supports Member States in their actions, providing guidance on safe limits for the exposure of the general public to electromagnetic fields and collect information on how measures are implemented in the different Member States.

Furthermore, the European Union develops harmonised technical standards to ensure that EMF emission from products put on the market - such as electric and/or radio equipment - meet the relevant safety requirements, including protection against hazards arising from EMF.

The EU has a binding legislation with regard to the exposure of workers to the risks arising from EMF.

The EU actively supports multinational research projects looking at various exposure and health-related issues related to EMF. These include projects exploring possible risk of brain cancer in children and adolescents related to mobile phone use and possible risk of leukaemia related to exposure to extremely low frequency fields (ELFs), such as those emitted by high power lines.

## Q3 HOW DOES THE EUROPEAN COMMISSION ENSURE THAT THIS MATTER IS KEPT UNDER CLOSE WATCH?

To make sure that the exposure limits suggested by the Council Recommendation 1999/519/EC still provide a high level of protection for citizens, the Commission encourages research into effects of exposure to EMF and periodically requests an independent update of the scientific evidence available. The Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR) has a standing mandate to provide this update. It has already produced five Opinions, the last one adopted in January 2015.

All assessments to date have concluded that there is no need to revise the current exposure limits but have recommended additional research in specific areas.

## Q4 WHEN DID THE SCENIHR ISSUE ITS LAST OPINION?

The SCENIHR adopted its last Opinion on potential health effects of exposure to electromagnetic fields (EMF) on 27 January 2015.

## Q5 WHAT DOES THE 2015 OPINION SAY?

The overall assessment of the scientific literature analysed, including more than 700 studies from 2009 onwards, did not associate exposure to electromagnetic fields below existing limits with adverse health problems.

Concerning the risk of cancer, the Opinion states that the evidence for an increased brain cancer (glioma) risk became weaker, while the possibility of an association with cancer of the ear (acoustic neuroma) needs further investigation. Studies regarding childhood cancer in relation to exposure from broadcast transmitters do not indicate any association.

New studies did not find adverse health effects on reproduction or any symptoms associated with exposure to EMF. Recent studies did not confirm the previous suggested association between EMF and an increased risk of Alzheimer's disease.

## Q6 WHAT ARE THE HEALTH EFFECTS OF EMF?

SCENIHR's Opinions consistently find that exposure to EMF does not represent a health risk if the exposure remains below the existing limits set by the Council Recommendation.

## Q7 IS THERE ANY LINK BETWEEN THE USE OF MOBILE PHONES AND CANCER?



A few epidemiological studies have suggested an association between exposure to radio frequency fields produced by mobile phones and an increased risk of cancer of the auditory vestibular nerve and of certain brain tumours. However, other recent epidemiological studies and the vast majority of animal and cellular studies did not confirm this association. Furthermore, data derived from cancer registries do not indicate any increase of brain tumours since mobile phones came on the market, even though they have been in use for many years and their use is wide-spread.

## Q8 IS THERE ANY LINK BETWEEN THE EXPOSURE TO POWER LINES AND CHILDHOOD LEUKAEMIA?

Some epidemiological studies would suggest an increase in risk of childhood leukaemia with exposure to these fields. However, no mechanisms have been identified and no support from experimental studies could explain these findings, which, together with shortcomings of the epidemiological studies prevent a causal interpretation.

**Q9** WHAT ABOUT ELECTROMAGNETIC SENSITIVITY? CAN SOME PEOPLE BE MORE SENSITIVE TO ELECTROMAGNETIC FIELDS THAN OTHERS?



EMF hypersensitivity in scientific terms is called 'idiopathic environmental intolerance attributed to EMF'.

Although some people self-report symptoms such as pain, headache, nausea, dizziness, fatigue and skin irritation and deem they could be associated with electromagnetic fields exposure, research consistently shows that there is no causal link between these symptoms and EMF exposure.

**Q10** HOW IS THE SCENIHR OPINION PRODUCED?

The Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR) has a standing mandate and periodically assess whether new scientific evidence would justify the revision of the reference levels recommended by the Council in 1999.

The Committee does not carry out pure research or have laboratories; it carries out a meta-data analysis, i.e. a literature research considering relevant independent studies from all over the world, in order to draw solid conclusions.

A specific working group is created to produce the Opinion and it is composed of members of the Committee and eminent experts in the EMF field.

Working groups' meetings are regularly held and the minutes of the meetings are available on the website.

**Q11** WHAT WERE THE CRITERIA FOR CHOOSING THE LITERATURE USED IN THE OPINION?

Not all research studies have the same weight, i.e. scientific validity. Detailed criteria for selecting these studies have been published in the SCENIHR Memorandum "Use of the scientific literature for risk assessment purposes – a weight of evidence approach" (SCENIHR 2012).<sup>1</sup> Additional criteria specifically for studies of health effects of EMF were also listed in a previous SCENIHR Opinion (SCENIHR 2009)<sup>2</sup>. The inclusion and exclusion criteria for scientific papers have been described in detail in the Opinion. Also, at the end of the Opinion there is a list of references of literature cited in the final Opinion as well as literature identified but not cited.

**Q12** HOW ARE THE SCIENTISTS SELECTED?

Members and experts are selected via an open call which is published in the EU official Journal and on the website<sup>3</sup>. Exclusion, selection and award criteria are well specified and applicants are selected to ensure the best expertise, independence, gender balance and geographical balance. They are appointed in a personal capacity.

The external experts contribute to specific parts of the Opinion that are in their expertise, but they do not finalise the Opinion and do not have voting rights. It is the responsibility of the SCENIHR to finalise and adopt the Opinion.

**Q13** DO THEY HAVE TO DECLARE THEIR INTERESTS?

Yes, before being appointed, they have to declare their interest in writing and their declarations of interests are assessed by the Commission. In addition to this, annual declarations of interest must be submitted in writing and interests must be declared at the beginning of each meeting to exclude any conflict of interest with the points on the agenda.

Moreover, members and external experts have a continuous obligation to declare any activity, situation, circumstance or other fact which might be considered prejudicial to the Committee's independence.

The scientists working for the Scientific Committees, in their respective roles (members, external experts) fully meet the requirements set in the Rules of Procedures of the Scientific Committees. Their declarations of interests, commitment and confidentiality are published on the website.

**Q14** ARE THE SCIENTISTS PAID? WHY THEY WORK FOR THE SCENIHR?

The members and experts receive a reimbursement when they attend a working group or a Committee's meeting, according to the EU rules of reimbursement of expert groups. They devote their high expertise and personal time at the service of the Scientific Committees and of the European citizens.

The European Commission is very grateful to the members and experts who produce the Opinions, thus underpinning the EU policy making with scientific facts. Robust, science-based risk assessment is instrumental in identifying protection priorities; in enabling the efficient use of resources; and towards addressing citizens' concerns.

The European Commission is committed to ensure that science and innovation are firmly at the service of European citizens, who should benefit from a high level of health protection.

**Q15** HOW DO YOU ENSURE THAT THE WORK OF THE SCIENTIFIC COMMITTEES IS TRANSPARENT?

Mandates, Opinions, committee members' CVs and declarations of interest and the minutes of the meetings are published on the web as requested by the transparency rules of the Scientific Committees.

Moreover, the preliminary Opinion is open for public consultation to gather specific comments and suggestions on the scientific basis of the Opinion to enable the Scientific Committees to focus on issues which need to be further analysed.

Scientists working in this field are informed about the consultation through an active dissemination process that includes press releases, website announcements and ad hoc meetings. Each submission is carefully considered by the SCENIHR and the scientific Opinion is revised to take account of relevant comments. Comments received and the Scientific Committee's replies to these comments are published together with the final Opinion. During the last public consultation, 186 comments by 57 organisations were received.

1. [http://ec.europa.eu/health/scientific\\_committees/emerging/docs/scenihr\\_s\\_001.pdf](http://ec.europa.eu/health/scientific_committees/emerging/docs/scenihr_s_001.pdf)  
2. [http://ec.europa.eu/health/archive/ph\\_risk/committees/04\\_scenihr/docs/scenihr\\_o\\_022.pdf](http://ec.europa.eu/health/archive/ph_risk/committees/04_scenihr/docs/scenihr_o_022.pdf)  
3. [http://ec.europa.eu/health/scientific\\_committees/experts/database/index\\_en.htm](http://ec.europa.eu/health/scientific_committees/experts/database/index_en.htm)