



SPAIN

Report on EMF activities

In Spain, public exposure to radiofrequency electromagnetic fields (RF-EMF) is regulated by Royal Decree 1066/2001 of 28th September (1). This regulation establishes the EMF limits designed to protect public health against EMF emissions within the radio spectrum, in accordance with the European Union Council Recommendation 199/519/EC (2) and the best scientific evidence available at the time (3).

In view of the significant evolution in the type and intensity of EMF emissions since the publication of Recommendation 199/519/EC, and the large amount EMF-related research carried out during last years, the main competent international bodies in this field, including the European Commission, The World Health Organization (WHO) and the International Commission on Non-Ionizing Radiation Protection (ICNIRP), reviewed and updated former precepts to ensure the protection of the population to EMF (4-7).

In 2022, the Spanish Ministry of Health launched the Strategic Health and Environment Plan 2022-2026 (PESMA), with the aim to promote healthy environments that help to achieve the population's health objectives and reduce the risks derived from environmental factors and their conditioning factors, reducing the burden of diseases and identifying new threats (8). Within this framework, the evaluation of EMF exposure and its potential impact on public health was incorporated as one of the main lines of intervention.

Horizon Europe Project on RF-EMF: NextGEM

In line with one of Strategic Health and Environment Plan's objectives, focused on fostering research and public communication on EMF health effects, the Spanish Ministry of Health participates as a public regulatory body in the Horizon Europe project "NextGEM: Integrated Sensing and Analytical System for Monitoring and Assessing Radiofrequency Electromagnetic Field Exposure and Health" (9).

The aim of this project is to update scientific evidence on RF-EMF exposure and health effects, as well as provide standardised quality criteria and methodologies. In this regard, NextGEM aims to develop and validate tools for evidence-based risk assessment, and to provide a platform for the generation of health-relevant scientific information and data on novel RF-EMF exposure scenarios across multiple frequency bands.

Another important objective of NextGEM is to deliver a standardised mechanism for European regulatory bodies and the scientific community to store and evaluate project results, as well as to facilitate access to FAIR (Findable, Accessible, Interoperable and Reusable) data through the foundation of "NextGEM Innovation and Knowledge Hub (NIKH) for EMF and Health" (10).

Spanish Expert Panel on RF-EMF risk communication

Within the framework of NextGEM activities focused on RF-EMF risk communication, expert discussion groups were organised among participating countries, including Spain. These groups



gathered scientists, academics, entrepreneurs and public administration representatives involved in RF-EMF risk communication.

One of the main conclusions from Spanish expert panel was that scientific communication on radiofrequencies should be supported by an inter-institutional strategy coordinated by public authorities and developed in collaboration with the different involved bodies. Experts highlighted that such a strategy should be based on transparent and independent research and communication processes in order to reduce misinformation and strengthen public trust.

The panel also identified uncertainty as a central issue that should be communicated in an honest and accessible manner to reinforce institutional credibility. Participants emphasised the importance of promoting public engagement with science, adapting communication to citizens and encouraging dialogue to minimise social polarisation around RF-EMF issues.

Spanish Pilot Study on ELF-EMF

Within Strategic Health and Environment Plan framework, a pilot study was carried out for the environmental assessment of ELF-EMF levels in Spain (11). Measurements were conducted in the cities of Albacete, Caceres and the Community of Madrid. In order to identify the typical environmental ELF-EMF levels in different environments and near electrical infrastructures, a specific measurement protocol for industrial frequency magnetic fields (50 Hz) was first developed, taking into account the national and international reference standards.

Subsequently, ELF-EMF inmission levels were analysed in outdoor and indoor public spaces, with special attention to sensitive locations such as nursery schools, schools, nursing homes and health centres. In addition, emissions from different electricity transport and distribution infrastructures, as well as electrified means of transport, were also measured.

The obtained results showed that both average exposure levels in public environments and measurements recorded near emission sources remained significantly below the reference limits established by ICNIRP guidelines (7). According to the current scientific evidence, the observed levels do not represent a significant risk to public health.

FECYT Project: "Interaction of waves and society: Accessible Science for Public Administrations"

In addition, the Spanish Government supports further initiatives through the Spanish Foundation for Science and Technology (FECYT). Within the 2024 call for the promotion of the culture of public innovation, a network on EMF and health was developed under the project "Interaction of Waves and Society: Accessible Science for Public Administrations" (IOS) (12).

This initiative seeks to promote dialogue and coordination between experts in electromagnetic fields and competent public administrations in radiological protection and public health, with the aim of harmonising public policies with the best available scientific evidence. Furthermore, the project promotes the transfer of rigorous, clear and accessible scientific information to the public through audiovisual materials and other communications tools, with the objective of improving public understanding and reinforcing institutional trust.



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