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# Synthesis of the Report *Trends in the incidence of brain cancer in Spain between 1985 and 2015 and its possible relationship with the use of mobile phones*

The *Health and Environment Strategic Plan 2022-2026* (PESMA) (1) was approved in November 2021 by the Interterritorial Council of the National Health System. This Strategic Plan, as well as its *First Action Program (2022-2023)* (2), includes in one of its lines of intervention the description of the incidence rates of brain tumors due to their theoretical association with exposure to radiofrequency electromagnetic fields used in telecommunications (mobile, telephone antennas, Wi-Fi, etc.).

The types of tumors that PESMA and the scientific literature have associated with radio frequencies (use of mobile phones), are gliomas, glioblastomas, meningiomas and acoustic neurinomas and other tumors of the central nervous system (CNS). Monitoring trends in these rates is a proxy indicator to assess whether there is any association with the use of, and exposure to, telecommunication technologies.

At the same time, the Ministry of Health participates in the *NextGEM Project: Next Generation Integrated Sensing and Analytical System for Monitoring and Assessing Radiofrequency Electromagnetic Field Exposure and Health* (3). NextGEM is a 4-year project funded by the European Union. It started on July 1<sup>st</sup>, 2022 and aims to ensure a healthy working and living environment for EU citizens when using current and future telecommunication technologies based on electromagnetic fields (EMF).

The World Health Organization considers as a priority the surveillance and follow-up of the rates of new cases of CNS tumors observed in population-based cancer registries that combine their analysis with exposure levels. In accomplishment of these responsibilities, the Ministry of Health requested the Spanish Network of Cancer Registries (REDECAN) to carry out the study *Trends in the incidence of brain cancer in Spain between 1985 and 2015 and its possible relationship with the use of mobile phones* (4).



◀ This work is the first comprehensive study conducted in Spain on the evolution of the incidence rates of these tumors, disaggregated by sex, age (adult and childhood incidence), location of the primary tumor and histological type. It was carried out using the period 1985-2015 in twelve population-based cancer registries in Spain, covering eleven provinces, three islands and the Registry of Childhood Tumors. The adult population (15 years and older) of the study included a total of 20,325 CNS malignant tumors.

Since its introduction in the mid-1980s, the use of mobile phones has increased rapidly throughout the world. In Spain, in 1995 only 2% of the population had a mobile phone, whereas in 2009 the number of these devices had already exceeded 51 million.

The time interval analyzed in the study covers three periods with varying degrees of mobile phone use: a first period in which there was practically no use of mobile telephony; a second period of mass deployment; and a final period of massive use.

It should be noted that this type of descriptive study is not evidence either for or against a causal relationship between mobile phone

use and CNS tumor incidence rates. However, they do provide useful information to assess the magnitude of a risk assessment, management and communication problem regarding the use and exposure of the population to radiofrequency electromagnetic fields. If there were a causal relationship, even with small excess risk, increased incidence rates of these tumors would be observed. The authors conclude that the results of the study show a slightly increasing trend in the incidence of brain tumors in the 1980s and early 1990s, and a subsequent stabilization. Therefore, they do not support the hypothesis of a possible correlation between mobile phone use and malignant brain tumors.

The publication of this study is an example of a successful collaboration between the Public Health authorities and the professionals of the cancer registries, which provides objective information on the control of an environmental factor that has generated concern about its effects on health in some sectors of society.

For all these reasons, the Ministry of Health and REDECAN will continue to collaborate to monitor the incidence of these cancers over time. 📍

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