

## What's to fear about mobile phones?

**Interphone, the largest epidemiological investigation ever conducted into the link between cancer and mobile phones, is delivering its first results. While the interpretation of this study does not yet allow us to draw definite conclusions, it suggests that the use of mobile phones could promote the occurrence of certain brain tumours.**

Mobile phone use has grown exponentially over the past 10 years, much faster than television and radio ever did. It is therefore too early to quantify the long-term risks to health. The number of users and relay antennas, sprouting up even in the most remote corners of the world, mean we are constantly immersed in a flow of radio frequencies (RF). Are our bodies capable of withstanding such exposure? The initial results of the Interphone study, launched in 1999 by the International Agency for Research on Cancer (IARC) in 13 industrialised countries, suggest that people who have used mobile phones regularly for 10 years face a higher risk of developing certain tumours.

The study focuses on four types of tumours affecting the brain or the parts of the head around the ears. Each survey participant received a detailed questionnaire on their use of mobile phones, their demographic profiles, whether or not they used other communication systems, whether they smoked, and their personal and family medical histories. In all, 2 765 people with gliomas, 2 425 with meningiomas, 1 121 with acoustic neuromas and 400 with cancer of the parotid gland were interviewed using a common protocol, along with a control group of 7 658 people.

### A prudent interpretation...

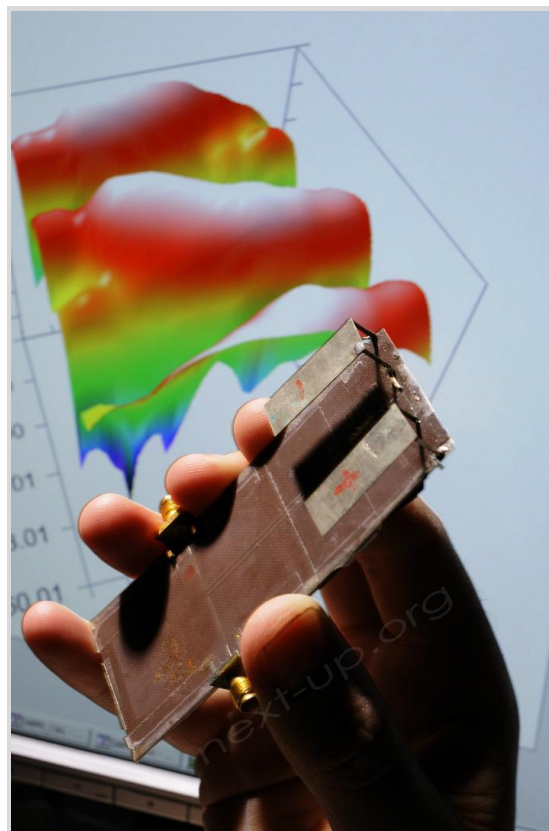
For gliomas, the brain cancer for which the mortality risk is highest, the Interphone study states that "the pooling of data from the Scandinavian countries and the UK has identified an increased risk of developing this type of tumour on the side of the head normally used for telephoning". The results thus suggest that the probability of users developing a glioma after 10 years is up to 60 % higher in the Scandinavian countries... nearly 100 % in France and close to 120 % in Germany.

For meningiomas and acoustic neuromas the results are more mixed, although a similar trend emerges. For tumours of the parotid gland, on the other hand, no increased risk has been generally observed. But further investigations, with longer latency periods, are needed to confirm these results.

Elisabeth Cardis of the Centre for Research in Environmental Epidemiology (CREAL) in Barcelona (ES), the coordinator of the Interphone study, however, plays down the alarming nature of these early results: "They do indeed indicate a possible increased risk among long-term users, but this observation is perhaps artificial, owing to two main biases that may invalidate the conclusions. On the one hand, the reports may be underestimated because of selection bias, i.e. the nearly 55 % non-response rate among healthy users. On the other hand, people with cancer may have overestimated their use of mobile phones. That is what is known as memorisation bias."

A good number of the organisations campaigning for the imposition of more stringent standards on the use of mobile phones believe the definition of 'regular user' – used in the Interphone study as someone using a mobile phone at least once a week for at least six months – is much too broad, which could again bias the results. "This is, however, a very clear concept that runs through all the studies," says Elisabeth Cardis. "When people meet this profile, a detailed questionnaire is sent to document their complete histories of mobile phone use. We have done analyses by number of years' use, the total number of calls, number of hours, etc."

### Interference with the immune system



System of reconfigurable radiation diagram antennas for mobile telephony UMTS (Universal Mobile Telecommunications System), one of the third-generation technologies. Work being carried out at the laboratoire d'électronique, antennes et télécommunications, at Valbonne (FR). © CNRS Photothèque/CREMANT/Nice-Sophia Antipolis/LEAT/Emmanuel Perrin

The final Interphone results should be published within a few months. [\[Ndlr Next-up INTERPHONE: Results updates\]](#) Right now, governments cannot (or do not want to) use the Interphone study as a basis for introducing or modifying regulations. However, other studies are pointing in the same direction, like a doctoral thesis defended at the Université Catholique de Louvain – UCL (BE) in June 2008 before an international jury of experts. Dirk Adang, supervised by André Vander Vorst, has measured the impact of electromagnetic waves in four groups of rats. Rodents of three of these groups were submitted over a period of 18 months, equivalent to 70 % of their lives, to different levels of electromagnetic exposure in line with prevailing international standards. The control group was not exposed.

Two major conclusions emerge from this study. The first concerns the effect of exposure on rats' immune systems. Analysing blood samples carried out every three months, Dirk Adang pinpointed an increase in monocytes, white blood cells involved in the elimination of foreign bodies from the organism, in rats of the three exposed groups compared with the control group. This finding suggests that the organism responds to low-dose electromagnetic exposure as a foreign aggression. A second and more worrying finding concerns the mortality rate: 60 % of rats in the three exposed groups died within three months of the end of the experiment, against 29 % in the control group.

[De version, anmerkung der Redaktion: [Reportage über die Studie von Dirk Adang - Strahlung und vorzeitige Alterung der Bevölkerung. Veränderung in Blut & Warnung; Erläuterung der Organisation Next-up - Video 16/9 hochauflösend](#)]



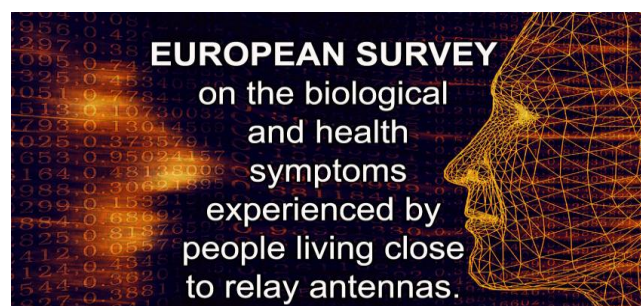
<http://videos.next-up.org/France2/EtudeScientifiqueSurmortaliteDirkAdangCommentairesNextUp/video.html> [Fr version Étude de Dirk Adang - video 16/9 Haute Définition]

## Electromagnetic cocktail

Again, relating as they do to an experiment carried out on rats, these results do not permit definitive conclusions. At the European Commission, a report published in 2009 by the Scientific Committee on Emerging and Newly Identified Health Risks (SCENHIR) indicates that there is no evidence of any impact of electromagnetic waves on human health but recommends that more research be carried out on the subject.

Although the conditions in which mobile phones are harmful to public health are not clearly established, one can reasonably doubt that the friendly mobile is totally innocent. What then of proximity to relay antennas? And of the combined effect with Wi-Fi waves? The health impact of these parameters is still unknown. Additional independent scientific studies are probably required to clarify them. Meanwhile, scientists are advocating the precautionary principle: avoiding the excessive use of mobile phones, especially among young children, using wired headsets or hands-free devices, and not using mobile phones in moving vehicles, which forces them to operate at full power to maintain connectivity. Don't they say that excessive use of anything is harmful?

**Frédéric Dubois**



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