

# HealthAfter 50®

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## Cell Phones and Brain Cancer: Should You Be Worried?

### Statement linking cell phones to brain tumors causes fear, confusion

For years, scientists have questioned whether there's a link between cell phone use and cancer risk. Recently, the International Agency for Research on Cancer (IARC), a division of the World Health Organization, declared that the radio-frequency electromagnetic fields emitted by cell phones are "possibly carcinogenic." Almost immediately, the announcement set off a media frenzy.

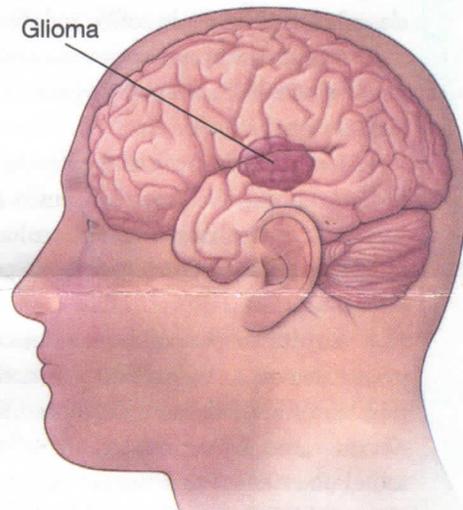
But should concerns that cell phones are "possibly carcinogenic" cause the estimated 5 billion cell phone users around the world alarm? Is it wise to set aside your cell phone in favor of your landline?

And why was this year's announcement, which was based on research that was neither new nor alarming, disseminated so vigorously by news organizations around the world?

### Cell phones and cancer risk

In many countries, mobile phones hit the market in the mid- to late 1980s. By the late 1990s, several expert groups reviewed evidence on the health effects of low-level exposure to radiofrequency electromagnetic fields and suggested further research. The IARC subsequently coordinated the Interphone Study Group—an international initiative spanning 13 countries—to examine the issue.

The Interphone Study Group focused on cell phone use among participants ages 30 to 59—an age range believed representative of the most frequent cell phone users at the time—and who resided in large, urban areas in parts of the world in which cell phone use was more firmly established. Researchers interviewed more than 5,000 people diagnosed with one of two types of brain tumors: 2,708 people with glioma and



Gliomas are the most common primary brain tumor and are often malignant. Although Interphone researchers said that those who used cell phones the most appeared to have a higher risk of gliomas, they also stated that there were too many potential flaws in study design and data collection to confirm a link.

2,409 people with meningioma. Participants were asked to recall and report previous cell phone use.

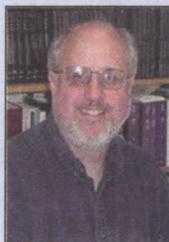
Study results, published in May 2010 in the *International Journal of Epidemiology*, suggested that cell phone users actually had an overall reduced risk of these two common types of brain tumors. It was only among callers who used their cell phone on average 30 minutes a day for 10 years (considered "heavy" users when the study began) that researchers found an increased risk of glioma. Researchers were careful to limit the significance of their findings, citing several potential sources of bias and error, including participants' inability to accurately recall rates of cell phone use.

One year later, in May 2011, the members of the IARC met in France to

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### DOCTOR'S VIEWPOINT

**First, there's no need to overreact** to the IARC's statement that cell phones are "possibly carcinogenic." The IARC placed cell phones in the same risk category as coffee, which few regard as a serious health threat. Second, protective measures come at low cost without a large imposition on people's behaviors. Using hands-free headsets, texting more or limiting the amount of time you hold the phone up adjacent to your head are all things that can be easily done.



**Patrick Breyse, Ph.D.**  
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again assess the possible carcinogenic hazards from exposure to radiofrequency electromagnetic waves. They based their assessment in part on the results of the Interphone study released the previous year. Scientists at the meeting assigned cell phones to risk level 2B. Other agents classified as 2B include coffee and diesel fuel. Again, the scientists were careful not to alarm the public and suggested the need for further research.

Federal agencies such as the Food and Drug Administration and the Centers for Disease Control and Prevention have long downplayed concerns about cell phones and brain cancer. They point out that despite the huge increase in cell phone use over the past 20 years, the number of brain tumors diagnosed has not increased. Moreover, scientists have found no evidence that the non-ionizing electromagnetic radiation emitted by cell phones is carcinogenic in lab rodents or that it damages DNA.

Changes in cell phone technology over the years, from analog to digital operating systems, have also called into question study results. The radiofrequency energy exposure of today's cell phone user is markedly different from that of early cell phone subscribers, making it hard to draw conclusions applicable to both.

With all of these conflicting messages, what should you do? For one thing, don't panic, says Patrick Breyse, Ph.D., a professor at the Johns Hopkins Bloomberg

### IARC Cancer Categories

**Group 1:** The agent is carcinogenic to humans. Examples include arsenic, asbestos, formaldehyde, mineral oils, plutonium and tobacco.

**Group 2A:** The agent is probably carcinogenic to humans. Examples include anabolic steroids, diesel engine exhaust and inorganic lead compounds.

**Group 2B:** The agent is possibly carcinogenic to humans. Examples include coffee, coconut oil, diesel fuel and radio-

frequency electromagnetic waves emitted by cell phones.

**Group 3:** The agent is not classifiable as to its carcinogenicity to humans because of inadequate evidence. Examples include acrylic fibers, fluorescent lighting and rubbing alcohol.

**Group 4:** The agent is probably not carcinogenic to humans.

Source: IARC Monographs on the Evaluation of Carcinogenic Risks to Humans

School of Public Health.

"There's frequently uncertainty about the risk of things we use and work with in our everyday lives," Dr. Breyse said. "It's important to be informed about possible, emerging risks so that we can take steps, if we wish, according to our own level of risk aversion."

### Why all the fuss?

If the research upon which the IARC based its classification is neither new nor alarming, then why the announcement? And why did the announcement garner so much attention? The answers to these questions are complicated.

First, even though the research had been available for some time, experts had not reached consensus over whether cell phones could pose a cancer risk.

This time, highly reputable and top-level people had come together and articulated the idea that cell phone use was a potential carcinogen, explained Katherine Clegg Smith, Ph.D., an associate

professor at the Johns Hopkins Bloomberg School of Public Health. "This wasn't a message that had come out at this level before, which made it newsworthy."

Second, the prospect that cell phones, which are used by so many people, pose a possible cancer risk is frightening and therefore newsworthy.

"Risks that we feel we've been exposed to without our knowledge are potentially much more fearful to us than other types of risk," Dr. Smith said. "Risks associated with new technologies show time and again to be fear-producing."

Finally, in years to come, how should we react should something else that's seemingly innocuous pose a potential health risk?

"For important health concerns such as cancer," says Dr. Smith, "we're fortunate to have many good sources of reliable expert information and analysis, such as the American Cancer Society and the National Cancer Institute. Visit their websites for information."

## October Newswire

### Best vegetables for heart health.

Cruciferous vegetables, such as cabbage, cauliflower, turnips and green leafy vegetables, may offer the best protection from heart disease. Two Chinese studies designed to track cause of death followed the diets of 73,000 men and 67,000 women for approximately five and 10 years, respectively. A summary of the data

showed that those who ate the most fruits and vegetables were 16 percent less likely to die of heart disease over the course of the studies than those who ate the least. People who ate the most cruciferous vegetables were 22 percent less likely to die of heart disease.

American Journal of Clinical Nutrition, vol. 94, p. 240

### Statins and diabetes.

People treated with a high dose of statins to lower cholesterol may be at increased risk for developing diabetes, say researchers in Scotland. Pooled data from five studies indicated that individuals taking 80 mg of atorvastatin (Lipitor) or simvastatin (Zocor), or a 120 mg combination of both, were 12 percent more likely to develop