

CELL PHONES AND POSSIBLE ADVERSE EFFECTS

The North American Brain Tumor Coalition (NABTC) has for a number of years carefully monitored the research related to the potential adverse effects associated with cell phone use. The NABTC urges these precautions in absence of definitive studies regarding the risks of cell phones.

- The Coalition urges the most expeditious possible completion of research studies, including one sponsored by the World Health Organization (WHO), to provide consumers better information about the risks created by their use of cell phones.
- In the absence of conclusive studies, we urge that individuals take simple precautions to limit their cell phone use and that they dramatically restrict the use of phones by children.

Background

It is estimated that almost 220 million Americans and nearly 2 billion people worldwide regularly use cell phones. If cell phones are convenient tools that have become an accepted way of life in the United States, they are the only reliable means of telephone communication in many parts of the world. Cell phone usage is expected to continue to grow worldwide.

Those who use cell phones are exposed to the radiofrequency (RF) energy, a non-ionizing form of radiation, emitted by the phones. Because of the widespread use of this relatively new technology, there is understandable concern about the health implications of use. When the WHO published a fact sheet on cell phones in 2000, it stated, "Given the immense numbers of mobile phones, even small adverse effects on health could have major public health implications."

Research on Risks Associated with Cell Phone Use

Studies have been undertaken to determine whether RF exposure may increase the risk of cancer. To date, many of the studies have focused on whether RF energy can cause malignant or benign brain tumors.

A "Cell Phone Facts," document for consumers developed by the Food and Drug Administration (FDA) and Federal Communications Commission (FCC) reviews the research on cell phones that has been completed to date. The document states:

The research done thus far has produced conflicting results, and many studies have suffered from flaws in their research methods. Animal experiments investigating the effects of radiofrequency energy (RF) exposures characteristic of wireless phones have yielded conflicting results that often cannot be repeated in other laboratories. A few animal studies, however, have suggested that low levels of RF could accelerate the development of cancer in laboratory animals. However, many of the studies that showed increased tumor development used animals that had been genetically engineered or treated with cancer-causing chemicals so as to be pre-disposed to develop cancer in the presence of RF

exposure. Other studies exposed the animals to RF for up to 22 hours per day. These conditions are not similar to the conditions under which people use wireless phones, so we don't know with certainty what the results of such studies mean for human health.

Three large epidemiology studies have been published since December 2000. Between them, the studies investigated any possible association between the use of wireless phones and primary brain cancer, glioma, meningioma, or acoustic neuroma, tumors of the brain or salivary gland, leukemia, or other cancers. None of the studies demonstrated the existence of any harmful health effects from wireless phone RF exposures. However, none of the studies can answer questions about long-term exposures, since the average period of phone use in these studies was around three years.

The FDA and FCC recommend additional research and note the challenges of completing the laboratory and epidemiological studies that might offer conclusive data on risks of cell phones. The agencies note that animal studies investigating cell phone use would need to be very large to offer meaningful data, and epidemiological studies might require ten or more years of follow-up. Finally, the agencies note difficulties in measuring actual RF exposure, including which model of phone is used and the angle of the cell phone during use.

A recently published meta-analysis by an Australian neurosurgeon has intensified concerns about the risks of cell phone use and created great interest in the completion of ongoing studies.

Recommended Precautions for Use

Although public health authorities are not in agreement regarding the issuance of public health advisories about cell phones in light of the inconclusive data regarding their risks, most governments have issued precautionary warnings regarding cell phone use. Many of the health agencies that have issued warnings note that the evidence does not necessarily support limitations on use but that the uncertainty regarding safety of cell phones and their widespread use support action.

In its 2000 Fact Sheet on cell phones, WHO stated:

Present scientific information does not indicate the need for any special precautions for use of mobile phones. If individuals are concerned, they might choose to limit their own or their children's RF exposure by limiting the length of calls, or using "hands-free" devices to keep mobile phones away from the head and body.

The United Kingdom in 2000 urged that cell phone use among children be limited and undertook a leafleting campaign to distribute information about limiting use by children.

In 2006, the Canadian government urged adults to moderate their cell phone use and the cell phone use of their children until the science regarding the risks of cell phones is clear.

The FCC and FDA in the United States say:

If you must conduct extended conversations by wireless phone every day, you could place more distance between your body and the source of the RF, since the exposure level drops off dramatically with distance. For example, you could use a headset and carry the wireless phone away from your body or use a wireless phone connected to a remote antenna.

The US agencies state that the precautions that are employed by adults may also be adopted by children.

In a July 2008 memo to the University of Pittsburgh Cancer Institute faculty and staff, institute director Ronald Herberman, M.D. offered “Practical Advice to Limit Exposure to Electromagnetic Radiation Emitted from Cell Phones.” Dr. Herberman said that release of the ten “prudent and simple precautions” to reduce exposure was based on the recommendations of an international panel of experts convened by the University of Pittsburgh. Those experts stated that, “...electromagnetic fields emitted by cell phones should be considered a potential human health risk.” The memo from Dr. Herberman to his faculty and staff is available at

http://www.upci.upmc.edu/news/upci_news/2008/072308_celladvisory.html. The analysis of the panel convened by the University of Pittsburgh is available at <http://environmentaloncology.org/files/file/Publications/UPCICellPhonesAppeal.pdf>.

Additional Information Regarding Cell Phones

The National Cancer Institute has posted a question and answer document that provides significant information regarding cell phone use and cancer. This document is available at <http://www.cancer.gov/cancertopics/factsheet/Risk/cellphones>.

The American Cancer Society describes cellular phones and the research on the risks of their use in a document available at http://www.cancer.org/docroot/PED/content/PED_1_3X_Cellular_Phones.asp?sitearea=PED.

The FDA and FCC provide a document called “Cell Phone Facts” at <http://www.fda.gov/cellphones/qa.html>.

A fact sheet on mobile phones, revised by WHO in June 2000, is available at <http://www.who.int/mediacentre/factsheets/fs193/en/print.html>. A Q&A document from WHO is available at <http://www.who.int/features/qa/30/en/print.html>.