U.K. Cell Phone Study Points to Acoustic Neuroma, Not Brain Cancer

Fourth Study To Show Tumor Link
Is This Really Prospective Epidemiology?

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A new study from the U.K. is adding support to the still controversial proposition that long-term use of a cell phone increases the risk of developing acoustic neuroma, a tumor of the auditory nerve. No higher risk of glioma or meningioma, two types of brain cancer, was observed.

Women who used a mobile phone for more than ten years were two-and-half-times more likely to have an acoustic neuroma than those who never used a phone. The finding is based on a smaller number of cases than the brain tumor results but is statistically significant. The U.K. epidemiological study is the fourth to show an association between long-term use of a cell phone and acoustic neuroma.

UPDATE: Oxford Group Now Says New Data Wipe Out Acoustic Neuroma Risk

"[W]e did find a trend of increasing risk of acoustic neuroma with increasing duration of mobile phone use," according to the team led by Victoria Benson, Jane Green and Valerie Beral of the University of Oxford. IARC's Joachim Schüz, an avowed tumor risk skeptic, is a coauthor. The trend of more tumors with more phone use is also statistically significant. The paper is being published by the *International Journal of Epidemiology*; a copy was posted on its Web site on May 8th.

WIthout explanation, the increase in acoustic neuroma is omitted in the study conclusion presented in the published abstract. Only the lack of an association with brain cancer is reported there.

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But perhaps the most controversial aspect of the new study is that it is being touted as "prospective." Prospective studies are considered superior to retrospective studies — such as Interphone — because they do not rely on people's memories to estimate past exposures. The fear with retrospective studies is that subjects with tumors, eager to explain their condition, will overestimate their cell phone use and skew the results in favor an association. In a prospective study, subjects fill out regular questionnaires detailing phone use and other possible changes over the span of the study.

It is true that the women were recruited into the U.K. study population before they developed a tumor and would not have had any incentive to misreport their phone use. But, beyond that, nothing about monitoring their radiation exposure could be called prospective. The U.K. study offers scant improvement over past efforts.

Calling the new study prospective cuts two ways. On the one hand, it gives additional support to the finding of no brain cancer from cell phones, but, on the other hand, it lends greater credibility to the acoustic neuroma association. This might explain the absence of the observed acoustic neuroma risk in the conclusion.

Exposure Assessment: “Crude” and “Extremely Limited”

"The evidence presented is less than a slam dunk," said Joe Bowman, an industrial hygienist with the U.S. NIOSH, who worked on the Interphone study. "The exposure assessment in the new study was pretty crude and no attempt was made to estimate radiation exposure," he told *Microwave News* from his office in Cincinnati. "While it is better than in past retrospective studies in some ways, it is worse in others," he added. "For example, in Interphone, a user's entire phone history was obtained."

Cell phone use in the U.K. study was based on the answers to only one or two questions posed at the time the women were recruited for the study. They were asked, "About how often do you use a mobile phone?" and were given three options: "never," less than once a day" and "every day." Those who did use a cell phone were also asked "for how long?" At the end of the study in 2009, participants were asked two more questions about their cell phone use, but those answers were not used in the data analysis.

"The study has extremely limited exposure assessment," concurred Joel Moskowitz, an epidemiologist at the University of California, Berkeley. In 2009, Moskowitz published a meta-analysis pointing to a tumor risk from cell phones. In an interview, Moskowitz pointed out that the U.K. team had not collected any information on the use of cordless phones. "This could have been an important source of RF exposure," he said.

The Oxford paper also reports a higher than expected incidence of tumors of the pituitary gland, but this increase is not statistically reliable.

Both the Interphone project and Lennart Hardell's group in Sweden have previously linked long-term cell phone use with acoustic

neuroma, as did a Japanese team in 2010. The new paper does not cite the Japanese study.

Last fall, the Italian Supreme Court ruled in favor of such an association.

Two years ago, an expert panel convened by IARC classified RF radiation as a possible human carcinogen. In April, IARC published the rationale for the decision.

U.K., epidemiology, cell phones, Victoria Benson, Jane Green, Valerie Beral, acoustic neuroma, brain tumors, pituitary gland, glioma, Joachim Schüz, Joe Bowman, NIOSH, Joel Moskowitz, Interphone, Lennart Hardell,

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