

## Probing Question: Are cell phones safe?

February 4 2011, By Dean Haycock

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An estimated 5 billion people around the world hold cell phones up to their ears nearly every day. Many of them wonder if they might be receiving more than news from people on the other end. Are mobile phones dosing us with carcinogenic radiation?

"To date, two dozen studies on [brain](#) and other types of cancer have been published. Almost all of those have shown that there is no increased risk," said Joshua Muscat, professor of Public Health Sciences in the College of Medicine at Penn State Milton S. Hershey Medical Center.

All cell phones emit an [electromagnetic field](#) (EMF) in the microwave frequency range, thus generating the heat we feel against our faces during a long conversation. The amount of EMF -- and how much penetrates our body's tissues -- is known by its Specific Absorption Rate or SAR, a measure of absorbed energy per time and weight (W/Kg). The U.S., Canadian and Australian legal limit for SAR is no more than 1.6 W/Kg.

Some communities, including San Francisco, are sufficiently concerned about the potential health risks from cell phones that they're pushing for legislation requiring retailers to post the SAR levels of the phones they sell.

But is there convincing scientific evidence backing up these fears?

One frequently cited example is the International Interphone study published in March 2010 in the *International Journal of Epidemiology*.

Thirteen different European groups gathered data over a decade. Their contradictory findings suggested that low to moderate [mobile phone](#) use may actually protect against brain tumors, but also that long-term heavy use (30 or more minutes a day for 10 years) was associated with an increased risk of [cancer](#). The statistics supporting the latter conclusion were notably weak, however, placing the chances that the hazard was real somewhere in the extremely wide gap between three percent and 89 percent.

Still, this is enough to convince many skeptics of [cell-phone](#) safety that the danger is real and call for immediate steps to protect the public. For example, the nonprofit Environmental Health Trust (EHT), which seeks to identify and control health risks in the environment, has urged the U.S. Federal Communications Commission to require warning labels. Regulations and warnings, the EHT suggests, are the safest way to proceed given our present state of scientific knowledge.

Muscat, for his part, believes "the research has actually been fairly conclusive that there is not a danger," while also acknowledging the impossibility of proving a negative claim. Elisabeth Cardis, the Interphone study's lead author and a professor at the Center for Research in Environmental Epidemiology in Barcelona told Canadian TV News, "All we can say at this point is that the study does not demonstrate an increased risk, but it doesn't either say there is no risk."

"The questions that remain," Muscat explains, "center around the amount of time cell phones have been in use. The premise of those who advocate that cell phones are not safe is that it takes many decades for cancers to develop and we have not have waited long enough to see problems." "Some isolated statistical findings may be jumped on by some groups who fear there is a danger presented by cell phones," he adds, but "we need to confirm findings with multiple studies."

It will take more time and research before a scientific consensus is reached. Some are taking the advice to use corded earpieces instead of pressing the phone to their heads, as they wait for the scientific discovery process to unfold.

Provided by Pennsylvania State University

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