MICRO WAVE NEWS

A Report on Non-Ionizing Radiation

Ken Rothman on Cell Phone Risks: Accidents and Tumors

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In a just-released commentary, Ken Rothman, one of the best-known names in epidemiology, explores two of the most contentious issues related to mobile phone health risks: (1) If cell phones do lead to an increased incidence of brain tumors, when would we expect to begin to see it? And (2) How do we explain the differences between the findings of the Interphone project and those of Lennart Hardell's research group?

Rothman's commentary accompanies ICNIRP's review of the mobile phone epidemiological literature (see **July 14** , below). Both will appear in the September issue of *Epidemiology.* Advance copies have been posted on the journal's Web site. Rothman's commentary is a free download.

Rothman, the founder and editor emeritus of *Epidemiology,* has long been involved in cell-phone health research. Indeed, he is a pioneer in the field. He led one of the first studies on mortality of mobile phone users close to 15 years ago and wrote one of the first reviews to be published in a major journal *(The Lancet)*. Much of his work was sponsored by the cell phone industry through Wireless Technology Research (WTR), George Carlo's infamous outfit. (Rothman paid dearly for this association, but that's a story for another time.) Over the last decade, Rothman has been a member of the Interphone International Scientific Oversight Committee.

In 1999, Rothman was also one of the first to document the hazards of using a cell phone while driving (in the *Journal of the American Medical Association*). Today, he thinks that this is, at least for now, the paramount public health issue. While Rothman does not dismiss the possibility that RF radiation affects the growth and development of tumor cells, he would direct more attention to the "most important health effect of using mobile telephones," which, he states, "is likely to be the result of behavioral change related to attention span."

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Rothman's timing is impeccable. Last Sunday, two days after his commentary was posted on the *Epidemiology* Web site, the *New York Times* kicked off a special report —"Driven to Distraction"— on the well-documented hazards of using a cell phone or some other wireless gadget while behind the wheel. Sunday's story, "Dismissing the Risks of a Deadly Habit," took up much of the top of the front page and continued on two full pages inside. In a follow-up story on Tuesday (July 21), also on the front page, the *Times* reported that the National Highway Traffic Safety Administration had suppressed "hundreds of pages of research and warnings about the use of phones by drivers." Those documents are now available on the newspaper's Web site.

With respect to RF radiation, Anders Ahlbom and the other members of ICNIRP's epidemiology committee highlight the absence of a tumor link in the short or intermediate term in their review. "Overall the studies published to date do not demonstrate an increased risk within approximately ten years of use for any tumor of the brain or any other head tumor," they write. But what happens in the long term? As Rothman points out: "Skeptics might rightly take this as only mild reassurance, because induction times for radiation caused tumors often exceed ten years."

Here too, Rothman has some previous experience. It turns out that close to 30 years ago Rothman wrote about precisely this problem: doing epidemiological studies on effects that may have long latency times. In 1981, he predicted, quite presciently, that, "[W]e can expect ... a growing interest in the timing between cause and disease." In his new commentary, Rothman writes that we can tell something about long-term risks based on the shorter-term epi data we have in hand:

> "[E]ven for carcinogens that induce cancer with very long average induction times, a causal effect should produce some increase in risk much earlier than the average induction time. Therefore, the absence of an effect for the first ten years after exposure should have implications that extend beyond that time."

That is, he agrees with the Ahlbom/ICNIRP view that, from what we know now, if there is a long-term tumor risk, it's unlikely to be large.

Rothman also favors Ahlbom's argument against putting much weight on the five-country Interphone finding of a long-term brain tumor (glioma) risk on the side of the head the phone was used — even though it was statistically significant, albeit by the thinnest of margins. Why? Because there is no overall elevated risk among long-term users. Instead, the higher observed risk is more likely due to recall bias. Rothman made the same point in an exchange with Hardell and Kjell Hansson Mild eight years ago: "[A]n absence of any increase in risk coupled with a doubtful result about laterality leaves room for much skepticism about a causal interpretation," he wrote in *The Lancet*.

And how do we explain Hardell's results pointing to a tumor risk? Rothman has no easy answers and does not take sides. He leaves open the question as to who will be proved right in the end:

> "Ahlbom et al identified no single methodologic problem that could explain the difference between the studies by Hardell and the results from the other studies. … [W]e should keep in mind that even if methodologic subtleties could explain the difference between the studies of Hardell and the other studies in the literature, without more information we cannot know whether to exclude the studies from Hardell or to exclude the other studies and retain Hardell's."

One way to look at the Ahlbom/ICNIRP review is that this is the paper that the Interphone team might have written had it not been for those other project members who do not believe that the risks can be easily explained away (see our "Interphone Project: The Cracks Begin To Show"). Rothman's commentary tells us that when those who say there is nothing to fear put forward their best case, it's not enough. More work must be done before the controversy over radiation-induced tumor risks will be resolved.

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