MICRO WAVE NEWS
A Report on Non-Ionizing Radiation

Will NIEHS Ever "Get" EMFs?

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> "A severe limitation of the experimental approach for studying the possible carcinogenic effect of EMFs is the use of the same criteria traditionally applied to study the carcinogenicity of chemical agents. In the sequence of events that lead to malignant transformation, mechanisms other than direct interaction with or damage to DNA may be involved."
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> — Lorenzo Tomatis (1929-2007, Director of IARC, 1982-1993)
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> "Primary Prevention Protects Public Health," *Annals of the NY Academy of Sciences*, 2002

Lorenzo Tomatis got it. But few others do. Among those who don't are the many managers at the National Institute of Environmental Health Sciences (NIEHS) who refuse to allow that the EMF–cancer playbook may be different from the one for chemicals. Even now, when there is ample evidence that power line EMFs can increase the risk of childhood leukemia and there is a growing suspicion that cell phone radiation is associated with three different types of tumors, NIEHS prefers to look the other way. The institute has long resisted endorsing precautionary policies for any kind of EMFs.

The latest case in point involves John Bucher, a senior NIEHS official who runs the National Toxicology Program (NTP). During his 27-year career at NTP/NIEHS, Bucher has evaluated the dangers of any number of chemicals. He is currently taking the lead on BPA, the controversial plastic additive, as well as radiation from cell phones.

In a story featured on the front pages of North Carolina's leading newspapers in early January, Bucher declared that he doesn't believe that cell phones can cause cancer. "I anticipate either no correlation or, if anything is seen at all, it won't be a strong signal," he said in an interview that ran in the *Charlotte Observer* and the *Raleigh News & Observer*.

Bucher was referring to a massive NTP project designed to see whether long-term exposure to cell phone radiation can cause

cancer in rats and mice. It is the largest single cancer study ever undertaken by the NTP/NIEHS with a budget of $25 million, maybe more. NIEHS spent ten years planning the project.

What's not explicitly stated in the news article is that the long-term study has not actually started. The contractor is still working on the pilot phase that will help determine the specific radiation levels to be used in the two-year exposure experiments.

Bucher's comments were "obviously inappropriate," Ron Melnick told *Microwave News.* "If you know the answer, you don't need to do the experiment." Melnick spent the last decade of his 30-year career at NIEHS designing the NTP cell phone study before retiring early last year. James Huff, another 30-year NIEHS veteran, was also critical of Bucher's remarks. "I was a bit startled — disconcerted— by the story," he said. "Why then spend $25 million of taxpayers' money." In the 1970s, Huff was the chief of IARC's Monographs Program, where he collaborated with Tomatis.

In an interview with *Microwave News,* Bucher reiterated what he had told the North Carolina newspapers. "I expect it to be a weak effect, if there is an effect," he said, but added, "I am open to change my mind" if the study shows something different. One reason for Bucher's skepticism is the lack of a "compelling" mechanism. "There's no biological basis explaining why someone would expect to see adverse effects from cell phone radiation," Bucher stated in the original article. Huff, Bucher's colleague at NIEHS, rejects this reasoning. "This is a very common problem," he said, "It's also true for dioxin and many other chemicals." Huff maintains that it is "irrational" to insist on having a mechanism before taking a potentially toxic agent seriously, whether a chemical or a type of radiation.

Bucher did emphasize that, "In no way does my opinion influence how we analyze the study." Maybe not, but as the head of the NTP, Bucher is its public face and his opinions help shape people's perceptions —including those within NIEHS. For instance, at last September's Senate hearing on cell phone health risks, Bucher signaled NIEHS' ambivalence by declining to endorse a precautionary approach to children's use of phones. "We are not in the position yet to make that recommendation," he told Sen. Arlen Specter (D-PA). Apart from the industry rep, he was the only one testifying who did not favor precaution.

Bucher is of course entitled to his own opinion and he might be right that cell phone radiation does no harm to animals. Unfortunately, we won't know the results of his $25 million project until at least 2014 or 2015. Yet, by all but dismissing the possibility of a tumor risk, Bucher is saying that he would not have bothered doing the study if the FDA has not pressured NTP into it (see *MWN,* N/DA99, p.5). Another indicator of Bucher's general lack of interest in wireless technology came when, at the Senate hearing, he conceded that he did not know the difference between a Bluetooth and a wired headset.

Déjà Vu All Over Again

What is especially troubling is that Bucher's comments are all too reminiscent of how NIEHS dealt with EMFs the last time around. If you substitute “power lines" for “cell phones” and “Gary Boorman” for “John Bucher,” you have a replay of an unfortunate incident that took place 15 years ago. Boorman, like Bucher, was a long-time NIEHS manager whose career was all about testing chemicals. Also just like Bucher, Boorman was in charge of the NTP/NIEHS EMF–animal studies —in his case for power-line frequencies. This too was a major project, with a budget of $8 million in 1992 (see *MWN,* S/O92, p.3). Later, Boorman was also made responsible for a second, even larger, effort on power lines, a Congressionally mandated $65 million program that became known as EMF RAPID. In 1995, as the NTP and RAPID experiments were just getting under way, Boorman, gave an interview to *Frontline*, the public television investigative series, that sent a message on power line EMFs which was no different from Bucher's on cell phones. It is becoming “obvious” that “there’s really nothing there,” Boorman said on camera. Another similarity between the two incidents: The same investigator at the same Chicago lab who ran Boorman’s power line exposures —David McCormick at IITRI— is also running Bucher’s cell phone experiments.

Some time later, Boorman lost all self-control and acted out on his conviction that EMFs are harmless. He waged a nasty campaign against Wolfgang Löscher, a German toxicologist who working with Meike Mevissen, had showed that EMFs play a role in the development of breast cancer in laboratory animals. The dirty tricks proved to be Boorman’s undoing. He was taken off EMF RAPID. NIEHS sent Löscher a formal apology.

Boorman’s animal studies generally failed to show an effect. But the consistent epidemiology pointing to an association with childhood leukemia forced Ken Olden, the then director of NIEHS, to advise —in his final report to Congress— that ELF–EMF exposure “cannot be recognized as entirely safe” (see *MWN,* J/A99, p.1). An NIEHS working group had classified EMFs as “possible human carcinogen” (see *MWN,* J/A98, p.1), a designation later endorsed by IARC (see *MWN,* J/A01, p.1). Olden characterized the risk as being “weak” and insufficient to “warrant concern.” Though he never used the word “precaution” in his report to Congress, Olden did advocate educating the public on how to reduce exposures. He called it “passive regulatory action.” There was no conviction behind those words. NIEHS stopped doing research on EMFs.

The EMF RAPID program was a failure: It did nothing to help resolve the power line controversy, which continues to smolder today. The epidemiology that drove the issue got practically no RAPID money and stands unchallenged. The culture of skepticism about EMFs bred by Boorman —some say because he could not look beyond chemicals— remained strong within the NIEHS. A couple of years after RAPID closed down, a “news” item was posted on the NIEHS Web site that advised, “There is no valid association between nearby power lines and any cancer, including childhood leukemia” (see *MWN,* M/A03, p.1). Soon after the item was publicized, NIEHS took it down. No one ever took responsibility for writing the misleading text.

The fear is that general skepticism about EMFs and rigid allegiance to the chemical paradigm will once again be the undoing of NIEHS' work on cell phones. No one should doubt that NIEHS' conflicted views on EMFs run deep. More than 20 years ago, David Rall, a former director of the institute who died in 1999, predicted — quite presciently— that the NIEHS would be dealing with the EMF problem right about now. "The big challenge for environmental health sciences in the 21st century is likely to be exploring the effects of microwaves and other electromagnetic fields on living things," he told the *Durham Morning Herald* in January 1988. Yet, a few months earlier, Rall had closed down NIEHS' in-house EMF research program (see *MWN,* J/A87, p.14). We phoned him at the time to ask him why, but he wouldn't take the call.

Lorenzo Tomatis, NIEHS, NTP, EMFs, John Bucher, David Rall, Ken Olden, Gary Boorman, National Toxicology Program, Ron Melnick, IITRI, David McCormick, Meike Mevissen, Wolfgang Löscher,

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