IARC: Cell Phone Radiation Is a Possible Human Carcinogen

Small Group Will File Minority Opinion

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It's not easy to reach unanimous agreement on anything to do with cell phone radiation. And when it comes to cell phones and cancer, forget about it. But the International Agency for Research on Cancer (IARC) nearly pulled it off. On Tuesday, May 31, more than two dozen scientists and doctors from 14 countries —a group IARC Director Christopher Wild called "the world's leading experts"— issued a joint statement that cell phone and other types of radiofrequency (RF) and microwave radiation might cause cancer.

Near the close of the eight-day meeting, there were six holdouts, but by the end only one dissenting voice remained in the room. (The group agreed that the person's name should remain secret.) IARC released the news: Long-term use of a cell phone might lead to two different types of tumors, glioma, a type of brain cancer, and acoustic neuroma, a tumor of the auditory nerve.

Another member of the working group would have also dissented had he not walked out of the meeting before the final vote. *Microwave News* has learned that Peter Inskip of the U.S. National Cancer Institute (NCI) left early and did not return. Aleea Farrakh Khan of the NCI Office of Media Relations confirmed that Inskip missed the final vote and said that he will join a "small group" of members of the working group in a "minority opinion."

"[Our] conclusion means that there could be some risk, and therefore we need to keep a close watch for a link between cell phones and cancer risk," said Jonathan Samet, who served as the chairman of the IARC RF working group. Samet, a professor at University of Southern California in Los Angeles, was appointed to the National Cancer Advisory Board by President Obama earlier this year.

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The decision "brings it to a new level," said Kurt Straif, the head of the agency's monograph program, who helped organize the meeting —the first ever on RF and microwave cancer risks. Many members of the panel agreed.

"Before this, the view that there might be a cancer risk from cell phones was widely argued as being implausible," said Ron Melnick, who led one of the subgroups at the IARC meeting. "Now the World Health Organization has put its official stamp on this possibility." Melnick, a former senior official at the U.S. National Toxicology Program until he retired two years ago, designed the world's largest study to see whether cell phone radiation can lead to cancer in rats and mice. Those results are not expected for a couple more years.

"The possible risk cannot be dismissed anymore, at least until we get credible new evidence to the contrary," said Dariusz Leszczynski of the Finnish Radiation and Nuclear Safety Authority (STUK) in Helsinki, a member of the IARC subgroup on mechanisms.

The IARC news was a sensation. Many stories were featured on the front pages of the world's leading newspapers, such as the *Washington Post*, the *New York Times* and the *Wall Street Journal,* the *Sydney Morning Herald*, *Le Monde,* and the U.K.'s *Daily Telegraph*. Within 24 hours of the IARC press conference there were some three thousand stories on Google News and that was only in English. Many of the stories were among the most read and most e-mailed on any number of Internet news sites around the world.

NCI's Peter Inskip: Odd Man Out

A number of those in Lyon said that Inskip appeared uncomforable during the meeting. "Throughout the plenary sessions, he was silent and did not comment on anything," said someone who was in the room and who asked not to be identified by name. "He seemed angry, upset and in a bad mood."

There are also reports that he actively sought to persuade other members of the epidemiology panel to discount the studies by Sweden's Lennart Hardell —at times, in direct and personal ways.

Inskip is well known for his opinion that cell phone radiation does not cause cancer. He published one of the first epidemiological studies on cell phones back in 2001: It showed no association with brain tumors (see *MWN,* J/F01, p.1). He has never wavered since.

Inskip is said to have acted on his conviction that cell phone radiation is harmless at least once before. A few years ago during a planning session for a meeting of the Brain Tumor Epidemiology Consortium (BTEC), Inskip argued strongly against a planned discussion of the possible risks. He was very emotional, said someone who was there but asked not to be named. The talks were cancelled.

Members of IARC working groups do not necessarily represent the views of the organizations they work for. Yet, NCI, where Inskip

works, has deep pockets and few are willing to challenge the views of its professional staff and risk being cut off. The institute's 2010 budget, for instance, was in excess of $5 billion. Some of that money goes to IARC. Last year, NCI made a five-year grant to support the agency's monograph program. The U.S. National Institute of Environmental Health Sciences (NIEHS) also supports the program.

After the IARC meeting, NCI issued a news release that played down the cancer risks and noted that "brain cancer incidence and mortality rates in the population have changed little in the past decade" —a time during which cell phone use grew rapidly.

Inskip did not respond to phone and e-mail messages asking for comment. Neither Nicolas Gaudin, head of IARC communications, nor Kurt Straif, head of the agency's monograph program, replied to requests for clarification.

Building a Consensus

The decision to classify RF/microwave radiation as a possible carcinogen was by no means a foregone conclusion. In fact, on the opening day of the meeting, May 24, many speculated that the final verdict would be that there's not enough evidence to allow any conclusion on cancer risks.

IARC puts chemical and physical agents into one of five categories. A possible carcinogen is labeled "2B" and one that cannot be classified is a "3." The others are: "1" for a known carcinogen; "2A," for "probable" carcinogen; and "4," for "probably not carcinogenic." In the forty year history of the IARC monograph program, more than 900 agents have been evaluated and only one —caprolactam — has ever been classified as not carcinogenic; 107 have been put in group 1, 59 in group 2A, and 266 in group 2B. The majority (508) was deemed to be unclassifiable, group 3. (Click here for examples from each group.)

As the meeting progressed, there was a sure but gradual shift to a 2B designation. "The most compelling evidence supporting the classification came from the epidemiological studies," according to Samet. Two sets of studies tipped the balance, he added: those from the Interphone project —which is an IARC project— and those from the group led by Lennart Hardell of Sweden's Örebro University. Both point to an increased incidence of gliomas and acoustic neuromas among long-term users of mobile phones.

"As the voting went on, people came together and it became clear that the likely decision would be 2B," said Carl Blackman, a member of the IARC panel. "But this was not a sure thing when we arrived in Lyon. Rather it evolved out of a very serious evaluation of the evidence." Blackman is with the U.S. Environmental Protection Agency in North Carolina.

A few members of the working group said that there was some sentiment on the panel for 2A, but this did not go very far.

In the end there was just one vote against 2B —though there would have been a second if Inskip had stayed longer. "It was an extremely impressive consensus," said Hardell when he got back to Sweden after the meeting.

In addition to the epidemiological evidence, the working group concluded that there is "some evidence" for carcinogenicity from animal studies, according to IARC's Straif. As for genotoxicity, he said that the subgroup on mechanisms found "weak" supporting evidence.

Straif pointed out that not all of IARC's 266 possible carcinogens were designated 2B based on the same types of evidence. Some were labeled 2B because of animal studies, he said. Among those designations based on human studies, as in the case of cell phone radiation, were talc-based body powder, herbicides and ELF magnetic fields (see *MWN,* J/A01, p.1).

The 2B designation was not limited to cell phones. It has "broad applicability" to all sources of RF radiation, Samet said.

The View from Outside Lyon

There was the expected wide range of opinions away from the IARC meeting rooms. Many of the usual talking heads reaffirmed their long-held views. On one side, neurosurgeons like Keith Black in Los Angeles said: "What microwave radiation does in most simplistic terms is similar to what happens to food in microwaves, essentially cooking the brain" and Charlie Teo in Australia said, "There is an increasing body of evidence that there is an association between brain tumors and mobile phones." And on the other side, Rodney Croft, the head of the soon-to-be defunct Australian RF research group, said, "Further research will prove there is no need for alarm."

Maria Feychting of the Karolinska Institute in Stockholm soon registered her opposition to the IARC designation. The studies are "far too uncertain" to support it, she told the press. Feychting is a protégée and colleague of Anders Ahlbom, who was slated to be a member of the working group but was removed when IARC learned that he was a director of his brother's telecom consulting firm. Both have long sought to play down the possibility of tumor risks. Some are speculating whether the IARC panel would have reached the same decision had Ahlbom been there to argue his case. Most suggested that outcome would have been the same. "The dynamic might have been different," said one member of the working group, "but I think it would still have been 2B." Another pointed out that Stan Szmigielski was also not in Lyon, due to health problems, and he would have balanced Ahlbom's opposition.

David Savitz, an epidemiologist at Brown University, is in the Feychting camp. “I would likely be hovering between inadequate and no association,” he told us in an interview. “I find the conclusions surprising, given that there is increasingly strong evidence that cell phone use has no association with brain cancer,” Savitz said to the *Los Angeles Times*.

Similarly, Meir Stampfer of the Harvard School of Public Health told the *New York Times,* that when you put the IARC decision into perspective, the evidence doesn't support the likelihood that this is "really something to be concerned about." The *Times* identified Stampfer as a "paid advisor for the cell phone industry."

Others were disappointed that IARC panel had not taken a stronger stand and labeled RF a probable human carcinogen. "We lost," said Annie Sasco, an epidemiologist who spent 22 years at IARC before moving back to INSERM in Bordeaux. "I had hoped it would be 2A," she told *Microwave News.* "There is certainly enough evidence for a 2A designation." By the time she left IARC, Sasco was the leader of the team on epidemiology for cancer prevention.

On the whole, many long-time EMF observers said that the 2B designation was the right choice. "2B is the best that the current evidence could support," said David Gee, a senior adviser at the European Environment Agency (EEA) in Copenhagen. And Tony Miller of the University of Toronto commented that he is not surprised by the panel's decision.

Reactions from Industry and Cancer Societies

IARC monographs are considered the gold standard the world over for what is or may be a cancer agent. And for this reason, the working group's decision will carry a lot of weight. "Nobody is going to question this result," said one panelist.

This may be why the cell phone industry was somewhat muted in its statements to the press. Trade groups appeared to be trying to put the best face on the panel's decision. "The IARC classification suggests that a hazard is possible but not likely," said Jack Rowley of the GSM Association. Rowley attended the IARC panel meeting as an observer.

The Mobile Manufacturers Forum (MMF) took a similar tack. "It is significant that IARC has concluded that RF EMFs are not a definite nor a probable human carcinogen," its press release stated. "IARC has only concluded that it may still be possible that RF fields are carcinogenic." The MMF sent Joe Elder to the meeting as its observer.

Cancer societies on both sides of the Atlantic were also quick to issue their opinions: For the most part, they read more like a reluctant acknowledgment of the IARC verdict than an endorsement. "It is critical that its findings be interpreted with great care," cautioned the American Cancer Society. "The bottom line is the evidence is enough to warrant concern, but it is not conclusive," said Otis Brawley, its chief medical officer.

Ed Yong, the head of Cancer UK's health evidence and information team interpreted the IARC decision to mean that "there is some evidence linking mobile phones to cancer, but it is too weak to make any strong conclusions." He went on: "the published studies do not show that mobile phones could increase the risk of cancer." His blog post was praised by other commentators and widely

circulated on the Web, but was condemned as “exceptionally misleading” by Powerwatch, a U.K. EMF group.

What Now?

At the press conference, IARC staff resisted suggesting how people might protect themselves. “It is always a tricky question at this stage what to do as a consumer,” Straif said. “The strength of this program also results from the fact that we do not make any strong recommendations as to regulation. This is in the domain of national and international agencies.”

On the other hand, Christopher Wild, the IARC director, said, “It is important to take pragmatic measures to reduce exposures such as hands-free devices or texting.”

In the U.S., three senior members of Congress —Reps. Ed Markey (D-MA), Henry Waxman (D-CA) and Anna Eshoo (D-CA)— have asked the General Accounting Office (GAO) to carry out a “thorough review” of the status of existing health research and the “adequacy” of the FCC safety standards for cell phones.

The WHO announcement "makes clear that additional research is needed to fully understand the long-term impact of mobile phone use on the human body, particularly in children," said Markey in a press release.

Samet closed the press conference by stating that he expects "with certainty that there probably will be another IARC evaluation of RF radiation in the future."

Details and Resources

The chair of the meeting:
Jonathan Samet, University of Southern California, USA

The heads of the four subgroups:
• Animal Cancer Studies: David McCormick, IIT Research Institute, USA
• Epidemiology: Jack Siemiatycki, University of Montreal, Canada
• Exposure: Ronald Melnick, Ron Melnick Consulting, USA
• Mechanistic and Other Relevant Data: Christopher Portier, Centers for Disease Control and Agency for Toxic Substances and Disease Registry, USA

A condensed summary of the working group's decision, including one from the each of the four subgroups, will appear soon in *Lancet Oncology*.
[The summary was posted on June 22 and appears in the July issue. The full text is open access.]
The IARC monograph will appear next year. (Later: It is now available here.)

It is not yet clear where and when the minority opinion will be published.

Now available from IARC and WHO:
• Audio of the May 31 "virtual" press conference;
• IARC's May 31 press release;
• Final list of participants (p.3);
• Introduction to the IARC RF Monograph (Volume 102);
• Podcast by Christopher Wild Introduction to RF Monograph Meeting;
• Christopher Wild, IARC Director, answers a few questions on the IARC Monographs;
• WHO Declaration of Interests for RF Monograph.

See also, our exclusive daily coverage of the meeting.
And these related stories:
• IARC Drops Anders Ahlbom from RF–Cancer Panel;
• French TV Documentary Links IARC RF Panelist to Industry Interference
• IARC Welcomes Industry to RF–Cancer Review;
• Joachim Schüz Moves to IARC;
• IARC on RF: What's Next?

October 2, 2021

The unidentified lone dissenter at the 2011 IARC meeting was Germany's Maria Blettner.

For some context on why this has emerged now, see this thread of three Tweets, together with this response from Dariusz Leszczynski, as well as his follow-up comment.

IARC, Christopher Wild, NCI, Interphone, Anders Ahlbom, Maria Feychting, David McCormick, Ron Melnick, Kurt Straif, Peter Inskip, Edward Markey, Rodney Croft, David Savitz, Annie Sasco, Meir Stamfer, Joe Elder, MMF, Maria Blettner,

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