Lost Research Opportunities

Industry Treads Water; Conflicts Abound

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Five years ago we reported on what we thought was an important clue in the search for understanding the well-documented association between childhood leukemia and EMF exposure. A team based in Shanghai presented evidence that children carrying a genetic variation linked to DNA repair were four times more likely to develop leukemia than those without that genetic marker. We called the finding a “major breakthrough” and predicted, “It simply cannot be ignored.”

We were wrong. So wrong.

What happened next —or rather, what did not happen— sheds light on why EMF research treads water and never moves forward. No one followed-up, no one pleaded for a follow-up; practically no one even talked about it. We don’t believe this was an accident. Strong forces favored inaction (no, we aren’t paranoid). Stagnation helps empower critics to maintain that without a mechanism the EMF–childhood leukemia link is bogus. That Shanghai scientists offered a possible explanation in a peer-reviewed journal made no difference.

In the five years since the Chinese paper (Yang 2008) was released, *only three papers have cited it.*

Two of the three were by European scientists: A team led by Igor Belyaev and Eva Markovà was the first in a paper in the March 2010 issue of *Environmental Health Perspectives.* Michael Kundi followed in 2012 in a chapter for the second edition of the BioInitiative Report. Kundi’s is the most detailed analysis of the implications of genetic variability.[1]

Belyaev and Markovà are with the Slovak Academy of Sciences' Cancer Research Institute in Bratislava, where Belyaev is the head of the Radiobiology Laboratory.[2] Kundi teaches at the Medical

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2025 Articles
2024 Articles
2023 Articles
2022 Articles
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2020 Articles
2019 Articles
2018 Articles
2017 Articles
2016 Articles
2015 Articles
2014 Articles
2013 Articles
2012 Articles
2011 Articles
2010 Articles
2009 Articles
2008 Articles
2007 Articles
2006 Articles
2005 Articles
2004 Articles

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University of Vienna. Both Belyaev and Kundi are associated with ICEMS, the International Committee on Electromagnetic Safety. ICEMS, advocates precautionary policies and was set up as an alternative to ICNIRP, a group set up by Michael Repacholi. ICNIRP has declined to endorse precaution.

Behind the Scenes: EPRI, Once Again

The third and only other paper to cite the Chinese finding is the key to understanding what's going on. "Pooled Analysis of Recent Studies on Magnetic Field and Childhood Leukemia," was published in the *British Journal of Cancer (BJC)* in late 2010. It disposed of Yang 2008 in a single sentence. Yang was "excluded" as not fitting some arbitrary criteria (p.1129). That was all the 13 authors had to say. Not a word about genetics. Nothing at all.

The force behind the *BJC* paper is a well-known EPRI operative, who has a desk at UCLA: Leeka Kheifets. We have previously taken her and one of her collaborators, John Swanson of the National Grid, to task as purveyors of "industry misinformation." When we submitted our commentary to *Bioelectromagnetics,* they were asked for a response. They had nothing to say. No rebuttal. No denial. No defense. Nothing. (We also published a longer article about their anti-science propaganda sponsored by ENA, the Energy Networks Association; see "The Real Junk Science of EMFs.")

Kheifets recruited some EPRI allies to join her as coauthors for the *BJC* paper. Gabor Mezei, a senior EPRI staffer who more recently joined Exponent, an industry-defense consulting firm.

And then there is Joachim Schüz. Schüz got his start by working on EMFs and childhood leukemia at Germany's University of Mainz. He wrote his doctoral dissertation on it in 1997. We knew him back then and he seemed eager to break new ground and ambitious to get ahead (for his early work, see *MWN,* J/A97, p.10 and S/O97, p.2). We were only partially right: He is now a section chief at IARC. We would like to believe that back in the 1990s he would have jumped on a clue like the one from the Chinese researchers, had he had the chance. That no longer seems to be the case. Here's the back story: In 2006 EPRI signed Schüz to a six-year research contract. While he was working with Kheifets on this project,[3] Schüz was on the EPRI payroll, yet no one mentioned this potential conflict to the readers of the *BJC* paper.

Kheifets also enlisted Anders Ahlbom of the Karolinska Institute to give the paper added gravitas. These days, Ahlbom has less star power. His reputation took a hit in 2011 when he got caught in his own conflict of interest imbroglio. The charges prompted IARC to disinvite him from one of its prestigious cancer reviews. Since then Ahlbom has been keeping a lower profile.

An Unnecessary Study

Ahlbom is a major figure in the EMF–cancer community. He helped legitimize the EMF–leukemia association 20 years ago with a study of childhood leukemia and magnetic fields, which used an

innovative way to assess the subjects' exposure to magnetic fields. Then in 2000, he organized a meta-analysis that combined the data from a series of similar studies. It was a game changer: It convinced everyone, even the most diehard skeptics, that the link could not be dismissed. (This now classic paper was published in the same *British Journal of Cancer* that ran the Kheifets paper.) The Ahlbom meta-analysis, together with another led by Sander Greenland, another leading epidemiologist, were instrumental in convincing IARC to classify power-frequency EMFs as a possible human carcinogen in 2001 (see also *MWN,* S/O00, p.1 and J/A01, p.1).

But the crucial point here is that the Kheifets meta-analysis was unnecessary. It was make-work —a project to pretend EMF research was ongoing when they were all simply treading water. More importantly, the project was politically correct: It was guaranteed to find nothing new. A high school student could tell you the wrong research was being done.

This is a hallmark of EPRI's strategy of delay: Keep repeating the same studies over and over again; be sure to not make any progress. Kheifets's meta-analysis should have been a graduate student's doctoral dissertation. It has no place in one of the world's leading cancer journals with the apparent blessing of IARC and the Karolinska Institute. All in all, the 13 authors came from all five continents, an international statement of apathy to solving the EMF problem.

No surprise, the 2010 Kheifets meta-analysis of studies published after Ahlbom's 2000 paper concluded that the new studies "do not alter the previous assessment that magnetic fields are possibly carcinogenic." EMF research had been treading water for ten years.

The icing on the cake was an editorial in *BJC,* accompanying the Kheifets paper, under the headline asking whether, "Enough Is Enough?" It concluded: "As long as no emerging new ideas become apparent (e.g., better exposure assessment, biological mechanism important confounders), we should accept the limits of epidemiological research." The authors, Germany's Maria Blettner and Sven Schmiedel (also affiliated with the Danish Cancer Society) made no mention of Yang 2008. (See also "The Shrill Cry To Stop EMF Research.") EPRI's mission to close down EMF research moved another step forward.

Selling Out Eddie O'Gorman *and* Princess Diana

There's one final —and disturbing— twist to this story. Kheifets credits funding for her study to Children with Leukemia, a U.K. charity, now known as Children with Cancer. No credit is given to EPRI. Children with Leukemia was founded by Eddie O'Gorman, a businessman turned philanthropist, who lost his son Paul to leukemia at the age of 14 in 1987. Another tragedy befell the O'Gorman family just nine months later when daughter Jean died of breast cancer. Princess Diana learned of the O'Gorman's misfortune and personally helped launch Children with Leukemia in 1988.

Eddie O'Gorman, a self-made millionaire, wanted answers and was willing to investigate all possible causes. Nothing was off limits. He refused to accept the official wisdom that EMFs could not have played a role in Paul's untimely death. In 2004, he helped finance an international conference in London to explore the latest findings on the effects of ionizing radiation and electromagnetic fields (see our detailed report on the meeting.) We talked to Eddie at the conference dinner, held at the Simpson's-in-the-Strand restaurant, next to the posh Savoy Hotel; he told us that he was convinced that EMFs had been at least partially responsible for Paul's leukemia and shared his suspicions that the electric utilities were covering up.

At the London meeting, Ahlbom called the association with magnetic fields "rather strong and consistent." He went on say that if a biophysical mechanism were in hand, he would drop all caveats and qualifiers (see p.2 of our report). Despite this, from the time his meta-analysis appeared in 2000 until 2008 when he stepped down after serving 12 years on ICNIRP, Ahlbom never voiced the view that ICNIRP should favor precaution. Today, for reasons that are unclear, Ahlbom speaks with much less conviction about the EMF–leukemia link.

After the conference, the charity announced that it would fund its own research projects. Kheifets, who had spent more than a decade working at EPRI (1988-2001) and who retained close ties to the industry group ever since, was awarded one of the grants. We have never fathomed how a group that was trying to break new ground and explore new hypotheses ended up wasting money on a known industry operative. The lesson here is that the anti-EMF establishment has such a firm control on what gets done that it doesn't matter who is paying the bills.

Cancer Research UK's Latest Folly

To see how the EMF–cancer establishment manipulates public opinion, you need only take a look at the press release issued by Cancer Research UK a few weeks ago under the title, "Overhead Power Lines Do Not Raise Leukemia Risk in Children." The new study from the Oxford Cancer Research Group shows that "there is no increased risk of leukemia in children born since the 1990s whose mothers lived within a kilometer of overhead power lines," according to a press release from Cancer Research UK.

One kilometer? It's common knowledge that magnetic fields are negligible at distances of 150-200 meters from a high-voltage power line. If the question under study is about magnetic fields, extending the population to 1,000 meter is a sure-fire strategy to show "overhead power lines do not raise leukemia risk in children."

One of the Oxford Group's objectives was to debunk a 2005 paper by Gerald Draper that reported an increased risk of leukemia among children living within 200 meters from a high-voltage power line. He also saw a risk, though a smaller one, out to 600 meters.

But, in trying to refute Draper, the new Oxford paper may have breathed new life into an alternative theory: The corona ion

hypothesis proposed years ago by Denis Henshaw of Bristol University and long disputed by the U.K. establishment. The new *BJC* paper once again plays it down (see also an earlier item, "Corona Hypothesis Disputed in U.K.").

Alasdair Philips of Powerwatch has posted a comment which makes the case that the Oxford Group has "accidently" provided evidence to suggest that power line corona may be facilitating the absorption of radionuclides from atmospheric nuclear tests, damaging children, possibly promoting leukemia. Will Philips's argument be taken seriously or ignored? By now, you can guess those odds. But the question remains: Why does the most interesting research come from those without funding, while the establishment treads water and disparages those who seek answers?

Using distance from power lines as a proxy for exposure says nothing about what might be influencing the development of childhood leukemia. The *BJC* paper was designed to dismiss the EMF–leukemia hypothesis. The smart money has been betting on magnetic fields for years, yet the Oxford team made no effort to measure magnetic fields in the homes of the cases and controls.

When Nancy Wertheimer and Ed Leeper used distance as a measure of risk 35 years ago in their original paper published in the *American Journal of Epidemiology* in 1979, they were widely criticized for using such a crude measure of exposure —by industry critics including Daniel Roth, a hired gun working for EPRI. (Here again, Wertheimer and Leeper paid for their study out of their own pockets, while EPRI spread the wealth to those who could be counted on discrediting them.) Today, a serious study requires magnetic field measurements both at home and anywhere else those surveyed spend time.

One of the coauthors of the new Oxord paper is the ubiquitous John Swanson of the National Grid, who pretends to do research when his real job is to protect his employer's financial interests. Don't forget that co-conspirator Cancer Research UK is the publisher of the *BJC.*

Happily, much of the media ignored the release, though the *Telegraph* and the BBC dutifully did pick it up.

Time To Clean House

Once again, we ask why the conventional rules of research ethics don't apply to those working on EMFs and RF radiation? Business as usual in these backwoods would not pass the smell test in most other disciplines.

It's time for Kheifets and EPRI to come clean and disclose their financial relationship. And it's time for ICNIRP to give her the boot, together with any other industry consultants it has tapped as "scientific experts." She and Mike Repacholi, her mentor, have made a mockery of ICNIRP's pledge to be free of industry influence.

And finally it's time for ICNIRP —the inner circle of the EMF establishment— to disclose the sources of its operating budget. Some disinfecting daylight is long overdue.

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1. Here's what Michael Kundi wrote in his revised chapter for the BioInitiative Report in 2012: "[The paper] indicates that power frequency MF may interact with specific genetic conditions. These results can be interpreted in two ways: the risk of leukemia from exposure to MF may be increased only in individuals harboring some specific polymorphism, on the other hand it is possible that exposure increases the genetic instability independently of an already increased instability due to a genetic polymorphism leading to a greater probability of developing the disease. At present there is no evidence to discriminate between these possibilities." To the best of our knowledge, no one has yet attempted to distinguish between Kundi's two hypotheses.

2. At the time the research reported in *EHP*, Belyaev and Markovà were also associated with Sweden's Stockholm University.

3. In the Kheifets 2010 *BJC* paper, Schüz's affiliation was given as the Danish Cancer Society in Copenhagen. By the time the paper was published in late September, Schüz had moved to IARC.

childhood leukemia, China, Xiaoming Shen, Michael Kundi, Igor Belyaev, Anders Ahlbom, Leeka Kheifets, John Swanson, EPRI, Eva Markova, Eddie O'Gorman, Children with Leukemia, Cancer Research UK, British Journal of Cancer, Daniel Roth, Nancy Wertheimer, Ed Leeper, Denis Henshaw, Alasdair Philips, Powerwatch, ICNIRP, Maria Blettner, Sven Schmiedel, Gabor Mezei, Exponent, conflict of interest,

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