SAN FRANCISCO MEDICINE

JOURNAL OF THE SAN FRANCISCO MEDICAL SOCIETY

Sugar | Tobacco | Nuclear Weapons
Guns | Saturated Fat | Radiation

LEGAL BUT LETHAL

Physicians Challenging Lethal but Legal Corporate Practices

Plus
MICRA/Update on Prop 46

VOL.87 NO.6 July/August 2014

FLYING BLIND

The Public Health Impacts of Wireless Radiation

Devra Davis, PhD

As uses and users of wireless transmitting devices are skyrocketing in our homes, schools, and even our national parks, one would think that scientific research on the human health and environmental implications of wireless electromagnetic radiation would be exploding with fierce competition. Yet as I write this article fresh from the Capetown, South Africa, meeting of the Bioelectromagnetics Society, research funding and training in this field is at its lowest point in modern history in both the government and private sectors. Motorola's once-vaunted laboratory is no more.

At the meeting, the society awarded its highest accolade to Environmental Protection Agency Senior Scientist Carl Blackman. The EPA's most distinguished and prolific investigator in the field, Blackman retired just two days after receiving the D'Arsonval Medal. Blackman explained that funds for research in this field at EPA had been wiped out.

This is a tragedy for the field and bespeaks an unfortunate policy direction.

Despite the extraordinary growth in wireless transmitting devices, we lack the resources to study their impacts in any systematic way. The absence of research on the health or environmental impacts of wireless radiation should not be confused with proof of safety.

Other presentations highlighted the exciting new field of electroceuticals—where electric current is being applied to treat a range of diseases including cancer. Thus the biological impact of electromagnetic fields is not in dispute. The meeting also heard presentations showing that cows, bats, and carp orient their bodies along lines that reflect the earth's magnetic field. When asked what this might mean for mammalian migration and even for human health, Uwe Bregger, the animal ecologist who presented this work, quipped, "I would certainly never live near a wireless tower."

The issue of exposures to towers is one of many on which we simply have no serious research underway, despite growing public concerns. The last national survey on exposures to electromagnetic fields in America took place in 1980. Standards for cell phones were set eighteen years ago. Would you fly in an airplane that met old safety standards? While the Israelis have established a national institute to evaluate wireless transmitting devices, no serious research is underway in the U.S., except one large-animal study that was first proposed fourteen years ago. In fact, this past week researchers in China published a study on pregnant women planning to have an abortion. Those results are mind-boggling: Women with the highest exposures to electromagnetic fields had much smaller embryos.

Conspicuously missing from the Bioelectromagnetics meeting are young students from America. Frank Barnes, a member of the U.S. National Academy of Engineering and mentor to a generation of students, has no funding to continue his groundbreaking work at the University of Colorado showing the impacts of magnetic fields on experimental variability. In 2008, he chaired the committee that presented a National Research Council Report, "The Identification of Research Needs Relating to Potential Biological or Adverse Health Effects of Wireless Communications Devices," as requested by the U.S. Food and Drug Administration, identifying research gaps and the critical need to increase our understanding of any potential adverse effects of long-term chronic exposure to RF energy on children and pregnant women. That report identified several important data gaps—none of which has been addressed in the meantime.

When will the U.S. take action on these recommendations? What research continues in the states appears to be that which cannot be publicly discussed, as it is sponsored by the Department of Defense. While none would dispute the value and importance of devising nonlethal uses of electromagnetic weapons, this is one of the few areas where research continues. One notable instance where the public is poorly informed about the need to promote safer uses involves the rapid proliferation of tablets such as iPads. These devices are tested at a distance of twenty centimeters from a large male adult body. Indeed, tablets are well-named—they belong on tables, not on laps.

Manufacturers advise that tablets can exceed the "as-tested levels" when held next to the pregnant abdomen or gonads, especially those of children. Yet advertisements on television and print—include lovely ads from Pottery Barn—tout these products for use by young expectant people holding them close to the body. Of course, these devices also are not tested for use directly against elementary school students, who nowadays hold them tightly to their small frames, often seated with their young organs directly exposed. Recently, medical doctors Maya Shetreet-Klein and Hugh Taylor have brought attention through the Baby Safe Project to the fact that pregnancy is a time when special precautions should be taken to keep wireless exposure as low as is reasonably achievable (ALARA).

Our ability to study any of these phenomena is hampered by the lack of funds that propelled Blackman to leave a field he had helped create nearly four decades earlier. Professor Emeritus Barnes rues the situation: "If a young investigator comes to me seeking to work in this field, I have to advise them of the facts. We have no money. There are no incentives to proceed. They are better advised to choose another career focus." As the former director of the Center for Environmental Oncology at the University of Pittsburgh Cancer Institute, I had to offer similar counsel

to students and young faculty.

We can fix this problem. Here's a solution every grandparent can support. The U.S. and the European Union need to implement a five-year program of a dollar-a-phone fee to be paid equally by phone manufacturers, cell providers, and consumers to generate funding to train physicians, biomedical researchers, and engineers; provide independent research funding; and support monitoring and evaluation of the potential impacts of cell phones and other wireless transmitting devices on our health.

Blackman's retirement is an omen. We have already lost one generation of researchers, as he recounted. We must invest in ensuring that our growing and important electromagnetic technologies are used and developed to be as safe as possible. Assuming things are safe until we have incontrovertible evidence they are not—as happened with tobacco and asbestos—is not a path we can afford to take.

At this point, our failure to develop evidence of harm cannot be regarded as proof of safety.

Devra Davis, PhD, is president and founder of the Environmental Health Trust, www.ehtrust.org. She lectures at UCSF, Berkeley, Dartmouth, Georgetown, Harvard, and other universities, and was founding director of the Center for Environmental Oncology, University of Pittsburgh Cancer Institute, and professor of epidemiology at the Graduate School of Public Health). She is spending 2013-2014 as a visiting scholar with the Goldman School of Public Policy and Management at the University of California, Berkeley. This article originally appeared on the Huffington Post Website, *July 7, 2014, http://www.huffingtonpost.com/.*

Whooping Cough Reaches Epidemic Levels in California

California is facing an epidemic of pertussis, or whooping cough, with more than 4,500 cases reported this year in the state, including 46 in San Francisco. The highest rates of the illness are in Marin, Napa, and Sonoma counties.

Of the cases this year, 84 percent occurred among individuals ages eighteen or younger. The Tdap vaccination for pregnant women is the best way to protect infants who are too young to be vaccinated. All pregnant women should be vaccinated with Tdap in the third trimester of each pregnancy, regardless of previous Tdap vaccination. In addition, infants should be vaccinated as soon as possible. The first dose of pertussis vaccine can be given as early as six weeks of age.

Older children, preadolescents, and adults should also be vaccinated against pertussis according to current recommendations. It is particularly important that persons who will be around newborns also be vaccinated.

More information is available here: http://bit.ly/1oxsNek.