

Electrical Sensitivity

Arthur Firstenberg & Susan Molloy

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The 750,000-watt Doppler weather radar at Fort Dix, New Jersey, overlooks the Township of Brick. Why is that of interest to anyone but meteorologists? It's not, except that eight out of every 1000 children born in Brick since the radar station was built in 1994 are autistic.

The Brick Township Autism Investigation (1), conducted in 1998 by the Centers for Disease Control and Prevention, uncovered 60 cases of autism spectrum disorder (ASD) among children aged three through ten in this town of 77,000 residents. As in much of the rest of the world, autism is increasing here. But the prevalence of both ASD and classic autism in Brick Township were found to be dramatically higher than normal in the 3-to-5-year-old age group, i.e., those born since 1994.

Forward-thinking educators and parents have done a good job in recent years of tackling the difficult issues involved in protecting sensitive children from chemical contaminants, dyes, preservatives, and allergens in their food, medications, classrooms, and homes. However, an additional burden has been overlooked and even ridiculed as untenable as a factor in many children's profound neurological and behavioral problems. Some readers may react with disbelief to our suggestion that the Fort Dix Doppler might qualify for a place on the "radar screen" of those scientists who are puzzled by the local epidemic of autism. (2)

The authors of this article are adults who are made extremely sick, sometimes incapacitated, from exposure to "normal" amounts of electromagnetic energy. We've seen some children respond as we do, as their well-meaning parents and teachers equip them with newer, faster, more powerful "safety" and communication devices, oblivious to the potential consequences for their children's health and development. We're not oblivious to these consequences because we ourselves respond directly and immediately, with debilitating pain, confusion, and neurological symptoms, to cell phones, cordless phones, computers, televisions, and other normal

elements of today's home, work and school environments. And we are in increasingly good company.

Gro Harlem Brundtland is director-general of the World Health Organization. A medical doctor with a master's degree in public health, as well as former prime minister of Norway, she has recently been speaking in public about her own sensitivity to computers, cordless phones and cell phones. Not only has she warned parents against allowing their children to use cell phones or microwave ovens, but she said that she herself has become so sensitive to the radiation that she does not allow anyone to enter her office with a cell phone turned on. "If you enter my office, you are invited by me. No one who is invited would like to give me headaches," she said at a news conference in Oslo on July 1, 2002, where she was attending an international conference on cancer.

Awakening to the potential of electricity to affect children's health and development can be initially disheartening, because electromagnetic pollution is so inescapable, and its sources so often are "conveniences" for which we've eagerly expended considerable resources. It can also be empowering, because it gives parents and practitioners an additional tool and offers a new range of potential factors that may be influencing seemingly intractable health or behavior problems.

Both of us went to school and were graduated from college before personal computers, cell phones, the Internet, and everything that goes along with them even existed. As environmentally sensitive people, we feel lucky to have grown up before today's conditions became the norm.

What Can We Do?

Computers in the classroom are practically unquestioned now, and that is fine for the durable. However, our society should provide computer-free classrooms for those vulnerable children for whom this is a necessary and effective accommodation.

In schools where wireless computers—or regular computers with wireless keyboards/mice—are installed, even a computer-free classroom will not be an effective intervention for a child whose Attention Deficit Hyperactivity Disorder or Obsessive Compulsive

Disorder is triggered or exacerbated by electromagnetic radiation. This is because the microwave frequencies used by these technologies, identical to the frequencies used in a microwave oven, pass through walls and do not respect the boundaries of classrooms.

What we suggest runs counter to the prevailing educational trend, which is to throw more and more computer-enabled devices at physically and developmentally disabled children in an effort to improve their functioning, without any consideration of the potential effects of the extra radiation on their developing nervous systems. When adult populations were sampled within the last year for the prevalence of electrical sensitivity, estimates by researchers varied from 1.5% (Stockholm, Sweden) to 3.3% (state of California) to 7% (Marin County, California) of the population. One patient group in Germany puts the number as high as 15% of the German population. Nobody knows exactly, because this is an isolating, disabling, and ridiculed problem that is still in the public health "closet," along with most of its victims. Children are the most vulnerable segment of the population. They are also the most unaware of the potential effects of this invisible and largely unacknowledged pollutant coming from equipment that is so fervently sought by their peers and esteemed by their parents and teachers.

Medical facilities, also, are sites of electronics' proliferation. The growing field of medical telemetry uses wireless technology to monitor the vital signs of hospital patients. But also, in hospitals, nursing homes, day care and elder care facilities, mental health institutions and group homes, remote monitoring of patients is in increasing use, not only for medical purposes, but simply to cut back on personnel costs.

New automobiles have much larger electromagnetic fields than they had ten or twenty years ago. This is due to multiple computer-controlled operating systems, GPS satellite-tracking devices, digital dashboard displays, and, commonly, a cell phone constantly charging in the car.

The situation is not hopeless.

At home, every parent can easily do the following experiment: tonight, before your family goes to bed, unplug all of these items you may have in your home: the TV, the computer, the base unit of the cordless phone, the entertainment center, and the baby monitor. Notice the quality of everyone's sleep, how you feel in the morning on awakening, and note whether you and your child seem calmer. Appliances should be completely unplugged, not just turned off at a surge protector (which itself may be a source of electromagnetic fields).

If your child has a motorized wheelchair, don't plug it in overnight next to his or her bed. Often these children are especially vulnerable as they may already have epilepsy, cerebral palsy, or other mobility-impairing conditions.

Electric floor or ceiling heaters, fluorescent lights, dimmer switches, and electronic security systems can all produce problematic electromagnetic fields. Finding all the sources and eliminating or avoiding them requires patience and may be time-consuming but is not necessarily difficult or expensive.

Your basic measuring tools are a \$40 magnetic field meter, or "gaussmeter," and a cheap (poorer quality is better for this purpose) battery-operated AM radio. When the gaussmeter reads 0.2 milligauss or less, and the radio, when tuned between stations, remains silent (does not buzz or give loud static), you have a relatively calm environment—especially important in the sleeping area. These two measuring devices will not detect the very high frequency radiation produced by cordless phones, wireless computers, baby monitors, remote controls for appliances, radio-controlled toys, and other wireless equipment. We recommend eliminating wireless technology from the environment altogether.

Many homes will have ambient magnetic fields that cannot be reduced to 0.2 milligauss because of factors outside your control, most commonly nearby power lines and transformers. Neighbors' activities may also be a factor. But reducing exposures to the extent possible within the home may still have a significant effect, especially on neurological or behavioral problems in developing children. Exposures outside our own control, such as from the street, a radar station or cell tower, at school, or in hospitals and medical facilities, can be dealt with effectively only on a societal

level. We have a long way to go before these problems are given the serious attention they deserve.

Ironically, some of our societal problems, such as school violence and kidnappings of children—even before 9/11 added to our worries—are being used as reasons to attach more cell phones to our kids for their safety and our peace of mind. But these very devices, and the millions of towers and antennas that make their use possible, expose all of us to a level of radiation that we know (from studies and painful firsthand experience) can contribute to the anxiety, depression, irritability, impulsivity, confusion, and general unrest that feed the very concerns which led to the need for all those cell phones in the first place. This can begin to change as more of us turn them off and experience the difference.

FOOTNOTES:

1. Bertrand, J. et al. Prevalence of Autism in a United States Population: The Brick Township, New Jersey Investigation, *Pediatrics* 108:1155–1161 (2001).

2. The Doppler appears to be the latest addition to a number of radar facilities in the area. McGuire Air Force Base, Fort Dix Military Reservation, and Lakehurst Naval Air Warfare Center are all located west of Brick. Military jets from those bases, equipped with powerful radars of their own, also fly over Brick on their way out to sea.

SUGGESTED READING:

George Carlo, *Cell Phones: Invisible Hazards in the Wireless Age*, Carroll & Graf, New York, 2001.

Jane M. Healy, *Failure to Connect: How Computers Affect Our Children's Minds—and What We Can Do About It*, Simon & Schuster, New York, 1998.

B. Blake Levitt, ed., *Cell Towers: Wireless Convenience? Or Environmental Hazard?*, New Century Publishing, Sheffield, MA, 2000.

Lucinda Grant, *The Electrical Sensitivity Handbook*, Weldon Publishing, Prescott, AZ, 1995.

Robert O. Becker and Gary Selden, *The Body Electric: Electromagnetism and the Foundation of Life*, William Morrow, New York, 1985.

** Electromagnetic field (EMF) meters may be obtained from Alpha Lab, 1280 South 300 West, Salt Lake City, UT 84101, (800)-769-3754 Less EMF, Inc., 26 Valley View Lane, Ghent, NY 12075, (888) LESS-EMF.

About the authors:

Arthur Firstenberg is founder and director of the Cellular Phone Taskforce, a nonprofit organization that disseminates information about electromagnetic radiation and advocates for electrically sensitive people. He is editor of the Taskforce's publication, *No Place to Hide*, and the author of *Microwaving Our Planet: The Environmental Impact of the Wireless Revolution*. [Also see *Killing Fields* – Arthur Firstenberg / *The Ecologist* v.34, n.5, 1jun04]

After graduating Phi Beta Kappa from Cornell University in 1971 with a B.A. in mathematics, he went to medical school from 1978 to 1982. Injury by x-ray overdose cut short his career. Firstenberg explains that after receiving about 50 diagnostic x-rays during extensive dental work, he became sensitive to high-powered equipment in the hospitals where he worked. "I could literally feel the radiation from the equipment; it made me weak and dizzy, but I kept working. After several months I collapsed. I was 31 and no one knew the cause of my illness. I was bedridden for about three months and at first I was not sure if I would survive."

Firstenberg's symptoms included a slow heartbeat, chest pain, extreme shortness of breath on exertion, and weight loss. By reading Eastern European literature on the subject, he eventually discovered that he had the symptoms of radio wave sickness. He later learned that any type of electromagnetic field may provoke similar illness in sensitive people, which commonly manifests with nausea, dizziness, headache, irritability, insomnia, and difficulty with memory and concentration. He also gradually became chemically hypersensitive.

His therapeutic approach is strict avoidance. At home, he has no computer, no television, no wireless equipment, no microwave,

and uses only incandescent lighting. He moved cross-country to Mendocino, California which has minimal electrical pollution, and he is symptom-free as long as he avoids exposure.

As is often the case in advocacy organizations, Firstenberg's personal experience led him to study the condition that plagued him. He is now an international spokesperson and advisor on the subject of electrical sensitivity (ES). He can be contacted by phone at (505) 471-0129, by mail: Cellular Phone Task Force; P.O. Box 6216; Santa Fe, NM 87502 or through the Cellular Phone Task Force Web site: www.cellphonetaskforce.org

Susan Molloy has an MA in disability policy and provides referrals and troubleshooting for people with symptoms provoked by environmental exposures. She is cofounder of the Environmental Health Network (EHN) of California and edited EHN's newsletter for 11 years. She served as chair of the Independent Living Council in Arizona and works at New Horizons Independent Living Center in Prescott Valley. She works from home due to her inability to withstand electromagnetic exposure, and uses a custom-shielded computer provided by Arizona Rehab. Services Admin.

Molloy has a history of allergies since childhood and was hospitalized with chemical sensitivities at age 31. ES symptoms emerged shortly after this. "When I go under power lines or fluorescent lights it feels like a blow to the top of my head," she explains. Asked if she could run errands, Molloy explains, "I can go into stores and other buildings. It's getting back out that's the problem. I tend to lose coordination and would often be stumbling if I didn't use a wheelchair. I get disoriented and my speech is also affected." Professional-grade ear protectors help soften the impact of auditory hypersensitivity to motor noises. She feels that living in the desert, where she keeps appliances to a minimum, has given her more stamina.

"I'd like to think that Arthur and I are just special cases, that people can stand back and distance themselves from our difficulties. I'd like to think that others won't suffer similar problems. But we know better. The numbers are growing, and no one is listening." She can be reached at (928) 536-4625 or susanm@cybertrails.com.