



Smart Technology Not So Smart?

by Milt Bowling

We hear a lot in the mass media and on the internet about the advantages of new wireless technologies. To a far lesser extent, we also hear about concerns of unintended health effects claimed to be caused by this technology. Are there hidden costs? What if the wireless transmissions that radiate from these devices have adverse health effects?

This is not an outlandish question. There are currently six personal injury lawsuits against the cell phone industry that have been wending their way through US courts since 2001. The industry is sparing no expense in defending against these suits, much like the tobacco industry did years ago.

Cracks have already started to appear, with two successful Workers' Compensation claims in California for brain tumours caused by cell phones used in the claimants' employment, and one Alaska Supreme Court decision in favour of an industry employee who suffered permanent neurological damage while working on equipment that was accidentally left on.

Prevalent power waves

Exposure to radiation from wireless technologies is now ubiquitous (there are four billion cell phone users alone!) and is generated from cell phones, smart phones, smart meters, cell towers, Wi-Fi, Wi-Max, cordless phones, Wii games, baby monitors, wireless laptops, satellite radio, AM and FM transmitters and ever-expanding devices. This technology continues to expand at a phenomenal rate, with no proven safeguards in place.

Most people are blissfully unaware that no wireless technology was ever proven safe before being introduced into commerce. Also, there is no-post market surveillance—standard for most products and assuredly mandatory for radiating devices—to ensure that there are no unintended health consequences.

Although industry and health authorities deny concerns, thousands of

published, peer-reviewed studies show cause for alarm (*Bioinitiative Report*, July 2007). Wireless communications technology is expanding at such a phenomenal rate that regulations have been left in the dust. Just as new technologies are introduced, additional concerns about possible negative biological effects are growing. Safety regulations are based on decades-old science, whereby heating was thought to be the sole mechanism of harm. Think of the microwave oven. The theory still prevails that, as long as bodies can dissipate certain levels of heat, no long-term effects can occur.

“Wireless communications technology is expanding at such a phenomenal rate that regulations have been left in the dust.”

Studies say...

In the 1980s, at the same time as regulatory standards were being revised to address the introduction of cell phones, studies by Dr. Theodore Litovitz and his team showed that the harm from wireless transmissions was caused by the way that information (voice, data, video) was packaged in regular pulses to be broadcast through the air. The membranes of all living cells have sensors that interpret our environment. As the pulsed information is regular and signals in nature are not, these sensors interpret these pulses as an unknown threat and react with a sympathetic (fight-or-flight) stress response.

Studies by Dr. Henry Lai and Narendra Singh demonstrated similar results. (Both groups also demonstrated that if a random signal was superimposed onto the transmissions, the cells showed no great-

er reactions than the control groups. This would still allow the wireless equipment to function as before, but without the harmful health effects.) Resulting changes to the cell membrane, caused by the pulsed information, restrict the influx of nutrients into the cell and the outflow of waste, resulting in deleterious health implications to the whole organism.

Chronic, long-term exposure causes the cell membranes to stay in the emergency position, which is then passed to daughter cells as the cells divide. Electromagnetic frequencies not only then interfere with proper functioning of individual cells but also interfere with intercellular communication. This leads to improper function of tissue, then organs, then organisms. As this exposure continues, the cumulative effects can result in a hypersensitivity to these signals, an assault on our immune system, and can present in the neurological, cardiovascular, musculoskeletal, ocular, respiratory, gastrointestinal and dermal systems.

Insufficient safety?

All of the above reactions happen after about 30 to 40 seconds of exposure. These signals are interpreted at vanishingly low power levels. For example, the genetic structure of *E. Coli* is altered at exposures 1,000,000,000,000,000 times lower than the safety standards in the US and Canada. The threshold of human sensitivity is 1,000,000,000,000 times lower. Electroencephalography (EEG) readings (the recording of electrical activity along the scalp produced by the firing of neurons within the brain) are altered in human subjects at 100,000,000,000 times lower. There is no safe level of exposure. As you can see, safety regulations based on thermal effects are not protective for any living things.

To be clear, the radiation from wireless devices is actually the signal which radiates out. Termed non-ionizing, it does not have the power of ionizing radiation,

like X-rays or gamma rays, to break chemical bonds. Harm ensues nonetheless. Any products that claim to block the radiation would actually be blocking the signal, causing the wireless device to stop working. And if the product only blocked some of the signal, the devices would compensate by increasing their power, making the exposure more acute.

Children respond adversely to environmental toxins more acutely than adults do for a variety of reasons, one of the main ones being that adults' cells are replicating, whereas children's cells are still differentiating. Therefore, our most vulnerable groups need our protection. Like most people, I'm concerned about the environmental legacy that we are passing on to future generations. Those in charge need to invoke the precautionary principle, which states that "where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."

Hard-wired for health

In a lot of cases, such as with laptops, home phones, school Wi-Fi and electricity meters, there exists a biologically benign option of hard-wiring the devices. This would make these applications quite safe. But the real solution is to alter the signal, so that it does not cause a biological reaction. In these trying economic times, however, no government has the will to interfere with an industry that is producing jobs. And the industry will not alter their technology while the health issue is before the courts. So, in the case of smart phones, smart meters, smart appliances and other "smart" applications, it just might be that using the term "smart" will turn out to be real dumb. ☹

Milt Bowling is president of the Clean Energy Foundation, which works with the public, industry and government for better regulations and safer technology.

Smart Meters Send Worry Signals

According to Una St. Clair of Citizens for Safe Technology, smart meters employ radio frequency radiation to send signals wirelessly 24/7. This is cause for deep concern due to negative health impacts, including headaches, dizziness, sleep problems, tinnitus and nausea. There are also reports of pets being severely affected.

Smart meters are already installed in certain areas of Canada, and rollout is scheduled to start in British Columbia in spring/summer 2011. Check out these resources and decide for yourself whether smart meters are a smart idea:

Citizens for Safe Technology, www.citizensforsafetechnology.org. This organization empowers the public to protect children and youth from unsafe wireless technologies. Forty reports document biological effects or associations of radiofrequency radiation at low intensities, many of them adverse or undesirable.

Stop Smart Meters! www.stopsmartmeters.org. Here you find the

latest news on what jurisdictions have done to stop smart meters. The site reports that the city of Capitol on February 11, 2011, became the seventh local government in California to criminalize the installation of smart meters, along with Marin, Santa Cruz, and Mendocino Counties and the cities of Fairfax, Watsonville and Rio Dell.

EMF Safety Network, www.emfsafetynetwork.org, features information on the wireless radiation from smart meters. The site dedicates a page of links to global EMF websites and to media reports, including "Smart Meter Shock: electrical hazards found in 3500 homes" (Australia), as well as links to EMF concerns around the world, including "European Environmental Agency advises the precautionary principle for wi-fi" and "German Government advises against wi-fi."

www.smartmeters.com is a comprehensive online source for news and views surrounding the smart energy industry. —*HANS Staff*