

Adding Insult to Injury

In addition to the known dangers of RFR waves, there is also the troublesome fact that more and more modern wireless devices have been manufactured to operate in the microwave portion of the radiofrequency range of the electromagnetic spectrum [<http://www.youtube.com/watch?v=7tZDor-coo>]. According to Thomas D. Williams, Ph.D., use of the microwave portion of the RFR spectrum permits more data to be carried and decreases the likelihood that a wave will be intercepted [<http://www.waimba.org/micros.htm>]. Although the preceding are obviously desirable characteristics in a wireless device, according to MD and PhD-level health experts, wireless devices that emit microwaves are even more harmful to health than are wireless devices that utilize the portion of the RFR range used by television and radio [<http://www.youtube.com/watch?v=p-nmaYU6kek&feature=related>]. I am unaware of any smart meters that will be operating in the microwave range of the RFR portion of the electromagnetic spectrum; however, even if smart meters will not be emitting microwaves, the fact that they will be emitting RFR at all still renders them hazardous to human health according to countless studies and a growing number of experts [see <http://www.magdahavas.com/wordpress/wp-content/uploads/2011/01/Havas-Report-CCST-Smart-Meters.pdf>].

Is CVPS Underestimating Vermonters' Good Judgment?

In reading the Bennington Banner article, I could hardly believe my eyes when Central Vermont Public Service (i.e., the electric company) official, Steve Costello, stated, "The smart meter is no more dangerous than a baby monitor" [http://www.benningtonbanner.com/ci_20142980/no-votes-wont-stop-rollout-smart-meters]. Was that comment meant to relieve Vermonters? If so, then it was a strange choice for a comparison, because researchers (as in PhDs and MDs who have conducted studies that were *not* funded by the communications industry) have been warning about baby monitors, cordless phones, Wi-Fi, and cellular phones with renewed concern for the past few years [<http://electromagnetichealth.org/watch-videos/>], and evidence of health issues stemming from the use of the microwave portion of the RFR range has been written about since at least the 1970s [<http://vimeo.com/17270263>]. Lately, experts express much worry about the health implications of Wi-Fi in schools [<http://vimeo.com/17263893>], and several organizations and parent groups have begun lobbying for Wi-Fi free schools in the U.S. and Canada [<http://citizensforsafetechnology.org/schools-children-and-families.4.0>]. Recently, there has been heightened concern about DECT baby monitors and cordless phones [<http://www.youtube.com/watch?v=7tZDor-coo>]. Many investigators, such as Karl Maret, MD, bio-medical engineer, hold that use of DECT cordless phones and baby monitors in your home is analogous to having a cell phone tower in your home [<http://www.youtube.com/watch?v=p-nmaYU6kek&feature=related>]! Here is a link to a video made by another such PhD-level researcher, who did her post-doctoral training at Cornell: [<http://www.youtube.com/watch?v=QTISuhLjgCA>]. In the preceding video, you can see just how incessant the RFR waves emitted from baby monitors, cordless phones, and Wi-Fi are. Later in this article, I will explain what the constant barrage of RFR from such devices is doing to your body.

Given the abovementioned climate regarding devices such as DECT baby monitors, Mr. Costello's assurances are curious indeed. While it is true that wireless devices do not emit ionizing radiation, such as that emitted from a hospital x-ray machine, anyone who tells you that non-ionizing radiation, such as the RFR waves emitted from baby monitors and smart meters, is "safe" is an obvious liar [<http://www.youtube.com/watch?v=7tZDor-coo>]. Notice that Mr. Costello chose his words carefully. He did not say "safe." Essentially, he assured Vermonters that the smart monitors that CVPS wants to install are "no more dangerous than" baby monitors: a class of devices currently suspected to be dangerous.

Safety is Unknown

The truth is that the best minds in the world have not yet identified a “safe” level of RFR exposure for human beings (never mind wildlife), but they *have* determined that the levels allowed by the U.S. government are indeed, over time, related to a much increased risk of adverse health effects, such as tumors of the face and brain, and other cancers. If this is news to you, familiarize yourself with the REFLEX study [http://www.powerwatch.org.uk/news/20041222_reflex.asp], which showed cellular phones capable of destroying DNA, confirming prior studies by Bioengineering Professor Henry Lai, at the University of Washington [<http://depts.washington.edu/bioe/people/core/lai.html>]. If you want to hear about the dangerousness of wireless devices directly from brain surgeons, take the time to view the documentary *Disconnect* [<http://www.disconnectfilm.com/>]. Much can be learned from Martin Blank, PhD, Associate Professor, Columbia University, Department of Physiology and Cellular Biophysics [<http://vimeo.com/17266941>], whose laboratory has found that electromagnetic frequencies, including those in the RFR range, can inflict damage to crucial biological molecules in the human body, especially those in charge of correcting errors in DNA sequences.

In your personal examination of RFR safety, it is worth your time to hear Joel Moskowitz, PhD, Director, Center for Family and Community Health, School of Public Health, University of California, Berkeley, [<http://vimeo.com/17266112>] speak regarding a meta-analysis he and his colleagues published in the Journal of Clinical Oncology, in October 2009, [<http://jco.ascopubs.org/content/27/33/5565.full>], which revealed that the more robust studies on cellular phone and cordless phone use show that using cell phones and cordless phones for a decade or longer is involved with increased risk for brain tumors. Dr. Moskowitz’s research showed that studies funded by the telecommunications industry tend to be of low-quality and overly dismissive of potential risks; whereas, government-funded studies tend to find relationships between cell phones and brain tumors. Moskowitz is also adept at conveying the well-known design flaws and reporting errors involved in the industry-funded, 13-country study called INTERPHONE (i.e., the study behind which the cellular telephone industry likes to hide). He condemns the fact that our federal guidelines for RFR safety were developed using a simulated 200 lb man’s head during a 6-minute phone call. He states that this testing scenario is far removed from reality given that two-thirds of children over age 7 were using cell phones in 2010. Moskowitz also reminds the viewer that the mobile phone industry’s recommendation for cell phone usage involves holding the mobile phones 5/8 of an inch to 1 inch from one’s head during use. There is a reason for this warning: cellular phone companies know their products are dangerous to the body.

Another Meaningless Comparison

In addition to the misguided comparison of smart meters to baby monitors made by CVPS’ Steve Costello, the Bennington Banner article contains another comparison I find exceedingly strange given the aforementioned recent findings regarding the long-term harm associated with exposure to RFR from cell phones and cordless phones [<http://www.youtube.com/watch?v=7tZDor-coo>]. According to the Banner article, radiological health chief [*sic.*] for the Vermont Department of Health, William Irwin, states, "Smart meters aren't used like cell telephones. People don't experience the radio frequency radiation the same way." I find Irwin’s statement flagrantly misleading. No, smart meters are not used like cell phones, and, no, the radiation is not experienced in the same way. However, this does not mean that smart meters are safe or that they are less dangerous than cell phones!

How Much Radiofrequency Radiation do Smart Meters Emit?

Some of the smart meters currently installed across America have been found to emit higher levels of RFR than the highest RFR emitting cell phones at their maximal levels of emissions (i.e., those levels present while the high RFR phones are downloading files or placing calls). Some smart meters have been found to emit unsafe levels of RFR every few minutes, 24-hours per day, 7 days per week. The Sage Report, authored by respected environmental consultant Cindy Sage, one of the writers of the *BioInitiative Report*, a document that has been used internationally by governments who wish to bring their RFR standards up-to-date, has found that smart meters installed in California were likely to violate the FCC's RFR limits [http://sagereports.com/smart-meter-rf/?page_id=196]. The Sage Report uses "computer modeling of the range of possible smart meter RFR levels that are occurring in the typical installation and operation of a single smart meter, and also multiple meters in California," and finds that "FCC compliance violations" are likely to occur under normal conditions of installation and operation of smart meters and collector meters in California." The Sage Report goes on to say:

In addition to exceeding FCC public safety limits under some conditions of installation and operation, smart meters can produce excessively elevated RF exposures, depending on where they are installed. With respect to absolute RF exposure levels predicted for occupied space within dwellings, or outside areas like patios, gardens and walk-ways, RF levels are predicted to be substantially elevated within a few feet to within a few tens of feet from the meter(s).

Indeed, a quick trip to YouTube will show you citizen-made films of the high levels of RFR (often above the U.S. FCC's legal limit) emitted, both indoors and outdoors, by smart meters installed around the U.S. in recent years. Many of the film clips have been posted by concerned medical doctors, as was this one: [<http://www.youtube.com/watch?v=ci5GGqEPecE>]. The Sage Report goes on to discuss the increased risks associated with banks of smart meters, as would be used for multi-family dwellings and apartment complexes, in the face of its findings that a single smart meter can be expected to exceed FCC exposure limits for RFR in many cases.

Although I prefer to rely on peer-reviewed research, and not YouTube clips, I find it unlikely that scientists who wish to measure the actual RFR emissions of smart meters installed on citizens' homes could find funding for such an endeavor. It is typically the government who awards grants to complete honest research, and, given the federal governments' push to install smart meters (as evidenced by the countless dollars in subsidies it has given utility commissions throughout the U.S. to construct a "smart grid"), I am not sure there will be government funding for such studies. One female citizen found smart meters in her city that were emitting more RFR than a local roof-top cell antenna [<http://www.youtube.com/watch?v=N6VwYPL9aE4&feature=related>]. In my opinion, citizens are fortunate that concerned experts and homeowners alike are posting videos of their smart meter RFR readings on YouTube. These experts and citizens do not stand to profit from citizen rejection of smart meters. In contrast, with the elimination of meter-reader jobs and the implementation of peak usage rate increases, electric companies absolutely stand to gain from convincing citizens that their smart meters are harmless.

It is Not Just *Your* Smart Meter That Will Expose You to RFR Radiation if You Get a Smart Meter

The level of RFR radiation to which you will be continuously exposed if you do get a smart meter is not just a factor of the RFR emissions of the smart meter attached to *your* particular house. Smart meters are typically

installed in "mesh networks" [see <http://stopsmartmeters.org/frequently-asked-questions/mesh-network-issues/>] consisting of many smart meters and also many (newly placed) RFR emitting transmitter antennas [http://sagereports.com/smart-meter-rf/?page_id=198]. Information, carried by RFR waves, is continuously passed from house-to-house, and house-to-antenna, in a smart meter enabled neighborhood. The smart meter on any given house can communicate with the smart meters on all the other houses, and with the transmitter antennae via RFR waves. If you are the "really lucky" home in the neighborhood, you will get a "special" high powered smart meter with an extra internal antenna that serves as a sort of transmission hub for your whole neighborhood. This means that your smart meter will receive many more RFR signals than all the other smart meters in your neighborhood. I certainly would not want the head of my bed on the other side of the wall upon which a smart meter is attached, let alone the model with the extra antenna! When one considers the "mesh network" system utilized by smart meters, it is plain to see why every citizen needs to make sure all of his/her neighbors are aware of the dangers to human health associated with smart meters.

Dishonesty Abounds

This brings me to another very misleading statement made by the "radiological health chief" [*sic.*] for the Vermont Department of Health, Irwin. Irwin claims that smart meters do not emit radiation beyond three feet. Now I am no physicist, nor am I an engineer, but if that were true, then the smart meters would not be able to communicate with the next house or antenna in the transmission line. Unless CVPS plans to place smart meters or antennas every three feet, within its smart meter enabled neighborhoods, Irwin is being dishonest. I *am* familiar with a whitepaper [http://www.eei.org/ourissues/electricitydistribution/Documents/Smart_Meters_RF_exposure.pdf] by the Edison Electric Institute Organization of Shareholder-Owned Electric Companies [<http://www.eei.org/Pages/default.aspx>], of which CVPS is a member, that states, in section 2, on page 4:

An RF exposure comparison of a person talking on a cell phone and a person 3 and 10 feet from a continuously operating Smart Meter would result in Smart Meter RF exposure 125 to 1250 times less than the cell phone.

Perhaps this statement by the EEIO has informed Irwin's "3 feet" claim. However, the above statement *in no way* means that the device emits "no radiation" beyond 3 feet, and to make such a claim is irresponsible. Additionally, even if standing 3 feet away from the unit does deliver less RFR than a cell phone, the fact that the smart meter may be set to transmit every few minutes, 24 hours per day, 7 days per week, means that the sum-total RFR exposure to a person 3 feet away from the smart meter, during a 24 hour period, could be far more than during a typical day's worth of cellular phone use. Additionally, the homeowner will not be able to control how often the smart meter transmits; whereas he/she can limit their exposure to cellular phone usage. Magda Havas, PhD has a good analogy for this situation. She notes that there are two ways to bake a potato in a microwave: (1) cook the potato on 100% power for 6 minutes, or (2) cook the potato at 50% power for 12 minutes. She notes that, either way, the potato ends up cooked [<http://vimeo.com/17263893>]. A smart meter is essentially a "slow cooker" of sorts. Over years of exposure to a smart meter's radiation, studies show that your body will be affected at a DNA-level.

The Sage Report [http://sagereports.com/smart-meter-rf/?page_id=196] makes several important points about FCC guidelines in the face of what is likely, for most citizens, to be an additive exposure scenario:

Consumers may also have already increased their exposures to radiofrequency radiation in the home through the voluntary use of wireless devices (cell and cordless phones), PDAs like BlackBerry and iPhones, wireless routers for wireless internet access, wireless home security systems, wireless baby surveillance (baby monitors), and other emerging wireless applications.

Neither the FCC, the CPUC, the utility nor the consumer know what portion of the allowable public safety limit is already being used up or pre-empted by RF from other sources already present in the particular location a smart meter may be installed and operated.

Thus, it does not matter whether or not a smart meter emits less RFR than a cell phone at any given moment, or even over a whole day, because **the smart meter will be functioning *continuously* for as long as you live in the home, and it will be functioning *continuously* in addition to the other wireless RFR-emitting devices all around us. Studies have shown that the damage to human cells at the hand of RFR is of a cumulative nature** (see video presentation given by Theodore Litovitz, PhD at the bottom of this page [<http://electromagnetichealth.org/watch-videos/>]). Additionally, why should we have to be sure to stay three feet away from a particular portion of the interior and exterior wall of our own homes in the first place? Should we really have to make such a sacrifice when *we* are the paying customers and smart meters are being installed for the sole benefit of the power company? We are paying them to deliver electricity to our homes' wiring. We are not paying them to irradiate our DNA.

Furthermore, if the smart meters to which Vermonters are about to be subjected do not emit radiation beyond three feet, as Irwin claims, then a meter reader would still be necessary *even for Vermonters who do opt to have a smart meter placed on their home*. But wait, isn't CVPS saying that Vermonters who opt out of having a smart meter will be charged a \$10 per month fee for a real, live person to come read their meter? Who is telling the truth here? From the research I have done, I can tell you that, sadly, neither Irwin, nor CVPS' Costello are telling Vermonters the truth!

“Most Common” Does Not Mean “Most Dangerous”—But Speaking of the "Most Common" is Useful if One is Trying to Be Deceptive Regarding Danger

Cell phones may be “the most common source of RFR waves,” as the Vermont Department of Health is quoted as saying in the Bennington Banner article, but this does not make long-term exposure to smart meters any less dangerous. Stubbing one's toe may be the most common cause of foot pain in the U.S., but it is certainly not the most threatening! Besides, the radiation emitted by a cell phone depends on how you happen to be using the cell phone at any particular moment [<http://www.ewg.org/cellphoneradiation/8-Safety-Tips>]. The highest levels of RFR exposure from cell phones occur when you are talking on the phone, or otherwise transmitting information, and you are in close proximity to the handset. The worse the reception during a call, the higher the RFR to which you will be exposed. You can reduce your radiation exposure by texting and using speaker-phone, and by not using your phone when you have bad reception.

Additionally, the type of cell phone you have plays a role in your radiation exposure from your cell phone [<http://www.ewg.org/cellphoneradiation/Get-a-Safer-Phone>]. Smart phones tend to emit higher levels of RFR overall [<http://www.ewg.org/cellphoneradiation/8-Safety-Tips>], than phones that function simply as phones with text messaging capabilities—I am sorry to say, but my father's iPhone is what I like to call "a weapons grade phone." Unless the Vermont Health Department has arranged with CVPS for Vermonters, unlike the rest of us in

this country who have received smart meters, to have an “off” switch for their smart meters and freedom of choice regarding the timing of transmissions, I think that they had better stop with the comparisons to cell phones. Cell phones are not safe, according to many experts on RFR, but to insinuate that they are a greater concern than smart meters is deceptive.

An Unintentional Compliment

When CVPS’s Costello says, regarding the moratorium on smart meters declared by three Vermont towns, “this isn’t the Vermont way,” I think he is unintentionally paying Vermonters a HUGE compliment! I am glad that Vermonters are not having their sensibilities swayed by such spin-doctors. I have never been more proud to be from Vermont!

Thermal vs. Non-Thermal Effects of Radiofrequency Radiation (RFR)

If you do not believe that our government would approve something that was dangerous to us, then acquaint yourself with what the FCC states it is really saying when it approves a wireless device. The FCC itself is careful to mention that it only evaluates devices based on federal guidelines—it does not evaluate wireless devices in terms of human health. Unfortunately, Federal guidelines are considered antiquated and inadequate, according to experts [<http://electromagnetichealth.org/quotes-from-experts/>]. Federal guidelines consider only "thermal effects" of RFR—as in how much heat particular exposure levels create [<http://transition.fcc.gov/oet/rfsafety/rf-faqs.html#Q10>]. The FCC is only concerned with whether or not your tissue will cook when you use your cell phone. However, modern, peer-reviewed research suggests that it is the "non-thermal" properties of RFR that may be of greater concern, due to RFR waves’ abilities to cause damage to our bodies at the genetic level, and disrupt our nervous, reproductive, and cardiovascular systems [<http://www.youtube.com/watch?v=p-nmaYU6kek&feature=related>]. Federal guidelines ignore non-thermal considerations, and experts claim that they are therefore greatly lacking [<http://electromagnetichealth.org/watch-videos/>].

The U.S. Lags Far Behind Other Developed Nations in Terms of Radiofrequency Radiation Guidelines

Many developed nations have more stringent guidelines regarding RFR exposure levels than does the U.S. "The European Parliament resolution of 2 April 2009 on health concerns associated with electromagnetic fields [<http://www.europarl.europa.eu/sides/getDoc.do?type=TA&reference=P6-TA-2009-0216&language=EN>]" shows that European regulators consider RFR exposure a clear and present danger. Russia has had more stringent RFR laws, compared to the U.S.' current guidelines, since the 1950s [<http://vimeo.com/17270263>]. The FCC dodges the issue of the mountains of scientific evidence of non-thermal effects on human health by stating that more studies are needed to confirm the non-thermal effects of RFR. The FCC’s “wait-and-see,” denialist stance is curious, given that they have **no** studies showing, beyond a reasonable doubt, that levels of RFR that do not heat tissue are safe. Given that wireless devices are a luxury, and not a necessity, it is strange that the FCC is not adhering to the “precautionary principle” regarding RFR. According to a World Health Organization document:

The precautionary principle states that, in cases of serious or irreversible threats to the health of humans or ecosystems, acknowledged scientific uncertainty should not be used as a reason to postpone preventive measures. The principle originated as a tool to bridge uncertain scientific

information and a political responsibility to act to prevent damage to human health and to ecosystems [http://www.euro.who.int/_data/assets/pdf_file/0003/91173/E83079.pdf].

It is also strange that the FCC is ignoring the urgings of experts from around the globe, in documents such as the *BioInitiative Report* explained below, to set stricter rules regarding RFR.

The Non-Thermal Effects of Non-Ionizing Radiation—How Precisely Smart Meters Can Hurt Us

The *BioInitiative Report* [http://www.bioinitiative.org/freeaccess/press_release/index.htm] was prepared in 2007, by a group of credentialed experts from around the globe [<http://www.bioinitiative.org/freeaccess/participants/index.htm>]. The *BioInitiative Report* was an attempt to convey to lawmakers that better regulation of the telecommunications industry is absolutely essential to ensure human safety [<http://www.youtube.com/watch?v=7tZDor-coo>]. The following is an excerpt from the *BioInitiative Report*:

Prolonged exposure to radiofrequency and microwave radiation from cell phones, cordless phones, cell towers, WI-FI and other wireless technologies has been linked to interference with short-term memory and concentration, sleep disruption, headache and dizziness, fatigue, immune disruption, skin rashes and changes in cardiac function. However, “These effects can happen with even very small levels of exposure if they occur on a daily basis. Cell phone use is likely to be more harmful in children whose brain and nervous system development can last into late adolescence,” says Cindy Sage of Sage Associates, “The public health implications of billions of people who are exposed makes this a matter of critical concern to policy-makers around the world” [http://www.bioinitiative.org/freeaccess/press_release/index.htm].

For more information on the *BioInitiative Report*, one can view an interview with environmental consultant, Cindy Sage, as to the contents of the report [<http://www.youtube.com/watch?v=7tZDor-coo>]. Additionally, one can view the following films of lectures given by Olle Johansson, PhD, Associate Professor and head of the Experimental Dermatology Unit, Department of *Neuroscience*, Karolinska Institute, Stockholm, Sweden, who is also a professor at the Royal Institute of Technology: <http://vimeo.com/17270582> and <http://vimeo.com/17250790>.

An article published by Cindy Sage in the January 2012 issue of the peer-reviewed journal *Pathophysiology* serves as a quick, up-to-date review of the known human health effects of radiofrequency radiation exposure [<http://www.sciencedirect.com/science/article/pii/S0928468011000551>]. Sage notes that RFR pollution is rapidly becoming a human rights issue, as more and more citizens are developing health problems from constant inundation with RFR in their homes and in public spaces, some being forced to move to remote regions in order to have any quality of life whatsoever.

How Does Radiofrequency Radiation Lead to Cancer?

RFR waves have been linked to cancer, as previously mentioned, and, as noted by the World Health Organization in 2011 [<http://www.who.int/mediacentre/factsheets/fs193/en/>]. In terms of the cancer risk, the underlying mechanism seems to be that the non-thermal effects of RFR include DNA breakage, as was discovered by Henry

Lai, PhD [<http://depts.washington.edu/bioe/people/core/lai.html>] and confirmed in the REFLEX study and the work of Martin Blank, PhD [<http://vimeo.com/17266941>]. A cell with aberrant DNA that replicates is basically the definition of a cancer cell. Many such cells make up a cancerous tumor. In all of our bodies, many potential cancer cells develop each day. However, most of us do not end up with tumors, from the proliferation of these mutant cells, because our bodies have proteins that repair broken DNA. There is much evidence that exposure to RFR waves, especially for long periods, decreases the very repair proteins that help defend the human body from any of the cancer cells that happen to develop daily in all of us. If you scroll all the way to the bottom of this Web page [<http://electromagnetichealth.org/watch-videos/>], you can view a film of physicist, Theodore Litovitz, PhD speaking passionately to congress regarding his laboratory's findings regarding the effects of wireless devices on human DNA, and the need for better regulations of the telecommunications industry.

Paying Extra for Safety

If I still lived in Vermont, I would pay as much as hundreds of dollars extra per month to avoid having a smart meter installed on my home—for RFR exposure reasons alone. This is especially true because I have a child, and children are more susceptible to the physiological damage that RFR can cause over time [<http://www.youtube.com/watch?v=WnY7utiMwGo&feature=related>]. Should citizens really have to pay extra to not be put in harm's way? I think not! Join me in making our legislators aware of the irony of this situation [<http://www.thepetitionsite.com/6/urge-congress-on-emf-safety-fcc-must-change-exposure-guidelines-for-microwave-radiation-exposure/>].

Smart Meters: Living Dangerously, and Living With an Audience!



In addition to the health concerns associated with smart meters, there is another huge issue with smart meters: *privacy*. Were you aware that the installation of smart meters will allow “Big Brother” to keep an even closer eye on you than he already does [<http://www.youtube.com/watch?v=7zTp4xsIDkQ&feature=related>]? Big Brother will be able to tell what time you showered and whether or not you chose to blow dry your hair on a given night. Big Brother can also potentially sell this information about you to the highest bidder, so that advertising geared to your particular blow-drying habits can potentially be mailed to your home.

In coming years, electronic devices, right down to toasters [<http://www.youtube.com/watch?v=skBM4Jb5ERE>], will have RFR emitting transmitters built into them [http://sagereports.com/smart-meter-rf/?page_id=198], which will identify them to your smart meter—this way Big Brother will not have to work too hard to identify the exact appliance you are using by its electrical signature alone

[\[http://www.youtube.com/watch?v=x9XwqPMooqI\]](http://www.youtube.com/watch?v=x9XwqPMooqI) . . . and you thought internet spyware tracking your web browsing was an invasion of privacy!

Given that smart meters will know when we are home and when we are not, so will anyone who has access to the information the smart meter collects about our habits. Let us hope that electric companies are doing some careful employee screening, lest our homes be burglarized by those who are privy to our patterns. Just as internet transmissions and cell phone calls can be intercepted, so can the transmissions of a smart meter network. Do you trust your power company to stay ahead of hackers? Last I knew the federal government was not even capable of doing that! Could a hacker disable your smart meter compatible burglar alarm via your smart meter's settings? It seems like a possibility given that the power company can disable your future smart appliances if it desires (see below).

As someone who has studied the criminal justice system in a formal academic program, I am also wondering about the criminal justice implications of smart meter privacy invasion. Good luck proving yourself innocent in a court of law if your smart meter suggests that you came home, took a shower, and did a load of laundry on the night of a murder of which you have been falsely accused. Also, do not accidentally leave all your lights on when you go on vacation, and be careful to not use any additional power when starting the seeds for your and your extended family's summer gardens. Police around the country are obtaining search warrants for suspected marijuana-growing operations and "meth labs" based on data from smart meters. Will the police replace any property they happen to destroy while raiding the young tomato and pepper plants you have under stadium lighting in your windowless garage? I bet not. Is the preceding example outrageous? It is not. It has already happened in Ohio [\[http://www.dispatch.com/content/stories/local/2011/02/28/police-suspecting-home-pot-growing-get-power-use-data.html\]](http://www.dispatch.com/content/stories/local/2011/02/28/police-suspecting-home-pot-growing-get-power-use-data.html).

Thinking of starting a business? Better get a license before you so much as buy any equipment that consumes electricity! Municipalities with smart meters have begun fining folks whose smart meters suggest that they took steps to start a business project prior to their having applied for business licenses. Furthermore, to avoid a police raid, if you are in the computer business, you may want to let local law enforcement know that it is your computer servers that are pulling lots of current [\[http://www.dispatch.com/content/stories/local/2011/02/28/police-suspecting-home-pot-growing-get-power-use-data.html\]](http://www.dispatch.com/content/stories/local/2011/02/28/police-suspecting-home-pot-growing-get-power-use-data.html) .

Rob States, M.S., an electrical engineer, makes a good point about medical insurance companies potentially being interested in what your smart meter has to say about your health status, over the past few years, when they are deciding whether or not a health issue is a "pre-existing condition" [\[http://www.youtube.com/watch?v=FLcCTaSG2-U&feature=related\]](http://www.youtube.com/watch?v=FLcCTaSG2-U&feature=related). For example, let's say you are a man with a brand-new health insurance policy through a brand-new job. You decide to go to the doctor, after several years of being uninsured, now that you finally have good insurance. The doctor finds that you have prostate cancer. Do you think your new insurance company would be interested to know that, according to your smart meter, you have been getting up several times per night and turning on your bathroom light for the past five years. Frequent urination is a well-known sign of prostate problems. Could your insurance company use this evidence to justify its refusal to cover you during your cancer battle? Stranger things have happened—especially where health insurance companies are concerned. (In the preceding film, Mr. States, also discusses the finer points of RFR as it relates to health, especially children's health, and discusses the research regarding the cancer cluster around San Francisco's Sutro cellular tower.)

Behavior Modification: Thanks to Smart Meters, It's Not Just for School Children Anymore

If the above were not already serious affronts to our American freedoms, the “smart” appliances of the future, manufactured complete with their own RFR-emitting transmitters, will receive information from the power company via your smart meter. If the power company’s systems are strained during “peak periods,” the power company will simply turn off one or more of your appliances “temporarily” to avoid stressing the grid [<http://www.youtube.com/watch?v=x9XwqPMooqI>]. Hardly seems worth it to keep the fridge stocked in the above scenario, huh?

Do you want a computer at your electric company to decide that your refrigerator needs to be shut off? I don't! Electric companies are going to start charging more for electricity during peak usage hours (e.g., afternoon and evening when citizens arrive home from work and school), courtesy of smart meters' ability to keep track of every detail of our power usage. Appliance manufacturers are already starting to manufacture “smart” appliances that, in addition to being remotely controllable by your power company, and possessing transmitters that emit dangerous RFR into your home, have built in behavior modification features to discourage you from using power during peak hours. Some of the features seem wise, but some of them appear highly impractical. A stove that will not get as hot as I want it to when I am trying to cook dinner at 6 p.m., does not sound like my idea of a wise purchase, nor does the smart clothes dryer that takes longer to dry clothes [<http://www.youtube.com/watch?v=nUITFR5gA4I&feature=related>].

Believe It or Not, This Was Only a Brief Overview of the Threats to Health and Privacy Associated with Smart Meters

The health concerns and privacy implications listed above are only the tip of the iceberg when it comes to smart meters. I hope that Vermonters will continue to do their research and will not willingly become the lab rats of the telecommunications industry, by allowing more of the very wireless technology, about which independent experts are currently warning us [<http://electromagnetichealth.org/quotes-from-experts/>], into their and their children’s living space. Children are especially susceptible to the damage inflicted by RFR waves due to their having thinner skull bones, which are more easily penetrated by RFR, and having bones and brains with higher water contents (water is an excellent conductor) [<http://www.ewg.org/cellphoneradiation/executivesummary>]. Just as you can pick up your neighbor’s Wi-Fi from inside your house, your, and your neighbors smart meters, can send RFR waves into your house. In a neighborhood with smart meters, short of buying a RFR meter and testing your living spaces, you cannot assume you are safe anywhere. Educate your friends, family, and neighbors about the dangers of smart meters. Encourage them to refuse installation of smart meters! Keep our neighborhoods safe!

Research and Decide for Yourself

I am obviously against smart meters. Are there advantages to smart meters? There is, of course, the chance that you can use data collected by your smart meter to help you save on your power bill. This would be an advantage, if, and only if, citizens have access to all of the data smart meters collect. I am unaware of any power companies who will be offering their customers full access to the data collected by their smart meters. However, even if the electric company were to give citizens access to the records, would the cost savings be worth risking the intactness of you and your family’s DNA?

The government and power companies claim that outages will be reduced thanks to smart meters. It seems logical that this could be the case. However, what would you rather experience: mutation of your DNA or the occasional power outage? I will take the power outage, thank you!

Below, you will find some annotated links to films and sites of interest regarding the questionable safety of smart meters and other RFR devices (e.g., baby monitors, Wi-Fi, cordless phones, cell phones). If you come across any good resources I have missed, please tell me about them so I can add to the lists below. Please take the time to protect your health, and the health of your children, from these RFR threats. As a nurse, I can assure you that a cancer ward is not a fun place to spend your time.

Annotated Links to Films of Interest

-David Carpenter, MD, Harvard graduate and public health physician, says that there is no evidence that smart meters are safe; however, there are plenty of studies demonstrating that the RFR waves they emit can, in the long-term, play a role in cancer, neurological damage, electrosensitivity, and reproductive problems [<http://www.youtube.com/watch?v=n7L21XOC2wA&feature=related>].

-Sam Milham, MD, MPH, an epidemiologist, has found that smart meters create dirty electricity in addition to creating dangerous RFR waves [<http://www.youtube.com/watch?v=ci5GGqEPecE>]. At 2:35 in this film you will see that some smart meters transmit constantly and can emit very high levels of RFR, despite what many electric companies have claimed will be happening. You can read more about the writings of Sam Milham, MD at www.SamMilham.com .

-Electromagnetichealth.org [<http://electromagnetichealth.org/>] is a foundation that represents citizens concerned about the proliferation of wireless technologies and their impact on health. They want our government to set exposure standards for electromagnetic radiation that are biologically based (i.e., based on the levels at which there are adverse effects to human physiology), instead of being based on antiquated and inadequate thermal standards. Electromagnetichealth.org has a page of videos of experts from around the globe speaking regarding the health concerns associated with current government standards on RFR and other electromagnetic energy [<http://electromagnetichealth.org/watch-videos/>]. I urge you to watch them all.

-Devra Davis, MD, of the Pittsburgh Center for Environmental Oncology, speaks on the effects of cell phones on the brain (remember, cell phones operate on RFR, just as smart meters do) and the fact that children are at greater risk [<http://www.youtube.com/watch?v=WnY7utiMwGo&feature=related>].

-I want to bring special attention to the video at the bottom of this web page: <http://electromagnetichealth.org/watch-videos/>. This presentation, given by the late physicist, Theodore Litovitz, PhD, explains the connections between RFR and cancer. He was speaking to members of the U.S. Congress.

-The *BioInitiative Report* is a document prepared by a group of experts with impressive credentials [<http://www.bioinitiative.org/freeaccess/participants/index.htm>] in an attempt to convey to lawmakers that better regulation of the telecommunications industry is absolutely essential [http://www.bioinitiative.org/freeaccess/press_release/index.htm]. In this film [<http://www.youtube.com/watch?v=7tZDor-coo>], environmental consultant, Cindy Sage, part of the working group for the *Bioinitiative Report*, is interviewed regarding the contents of this important document and the

extensive qualifications of the authors. During this interview, she explains that many cell phones currently on the market do not adhere to current FCC RFR emission standards, and that there is good evidence that brain tumors are developing in cell phone users at a rate faster than that at which we would expect cancers to develop after exposure to ionizing radiation, such as that from x-rays.

- Here is a video of a meeting in Santa Cruz, CA exposing multiple issues surrounding installation of smart meters: job loss, inaccurate billing, radiation, loss of privacy [<http://www.youtube.com/watch?v=p-nmaYU6kek&feature=related>]. This video includes the testimony of Karl Maret, MD, a biomedical engineer, at 23:51. At 33:00 the doctor suggests a reading list. At 1:15:27 there is a slide of particular interest that details a comet assay. It shows that there is a similar effect on a cell exposed to a cell phone for 24 hours as there is on a cell exposed to 1,600 chest x-rays (i.e., ionizing radiation/gamma rays)! This doctor says that current FCC standards for RFR are 10 to 100 times too high! He also notes at the end of the film that having a DECT cordless phone in your home is like having a cell tower in our house!

- Barrie Trower, former Royal Navy microwave weapons expert, and former cold-war captured spy debriefer for the UK Intelligence Services, discusses RFR [<http://www.youtube.com/watch?v=iLWRdkxKXiW>]. This video is quite long. There is no reason to *watch* the whole thing closely, as there are no visual aspects present. However, *listening* to the entire presentation is extremely educational. Trower states that there are 8,300 studies (!!!) showing adverse immunological, psychological, neurological, and carcinogenic effects of microwaves on human physiology. Of particular interest, is Trower's discussion of the effects of microwaves (which cell phones, baby monitors, Wi-Fi, and cordless phones now use) on fetal development, and the powerful economic forces that determine what the public is told about the safety of microwaves by the government and industry. Trower is particularly concerned about the dangerousness of DECT baby monitors and cordless phones. Trower also reminds us of the ability to use microwaves as weapons and of the various illnesses among American Embassy workers during the years that the Soviets were bombarding the American Embassy, in Moscow, with microwaves [see http://www.aseq-ehaq.ca/ma_emfs/pdf/studies/Radio_frequency_sickness.pdf].

-Industrial Engineer, Josef Tyls, a Canadian, speaks as to why he thinks smart meters are dangerous to humans and will invade citizens' privacy [<http://www.youtube.com/watch?v=7zTp4xsIDkQ&feature=related>].

-This is a trailer [<http://thepowerfilm.org/>] for a, presently untitled, Canadian documentary about smart meters, which features experts and former government leaders speaking out about the dangers of smart meters.

-Dr. Oz notes that more recent studies have shown that there is cause for concern over RFR waves from cell phones, especially with children [<http://www.youtube.com/watch?v=lKXzHW9qMKE&feature=related>].

-Stephen Sinatra, MD, cardiologist, speaks on cell phones and the fact that Scandinavian countries have banned cell phones on the basis of the dangers to children [<http://www.youtube.com/watch?v=Xs2nF1LLtoY>].

-Daniel Hirsch, Senior Lecturer on Nuclear Policy at UCSC, criticizes the methodology employed by the studies California authorities used when comparing smart meters to cell phones [<http://www.youtube.com/watch?v=a6-hcOr-sxA&feature=youtu.be>].

-Jerry Day, a producer, has made an informative video exposing the privacy invasion potentials of smart meters [<http://www.youtube.com/watch?feature=endscreen&v=FtLzIWtZtbs&NR=1>].

-Multiple physicians speak about the dangers of cell phones:

http://www.youtube.com/watch?v=L_mO_ZoAoPo&feature=relmfu

-Are cell phones related to breast cancer? This oncologist thinks they may be:

<http://www.youtube.com/watch?v=xwTynAfb4Xo>

-Head tumors and cell phone usage (remember, the smart meters will be on all day; cell phones are *not* on all day): <http://www.youtube.com/watch?v=zLt7wdipLUA&feature=related> and

http://www.youtube.com/watch?feature=player_embedded&v=bSBE6wOGOPI

--“*Disconnect* is a documentary on cell phones and their possible long-term health effects. Through research and interviews with the world’s leading doctors, scientists, politicians, and industry innovators; *Disconnect* traces the rise of an unregulated industry and unveils the corrosive relationships that have corrupted corporate responsibility” [<http://www.disconnectfilm.com/>]. (Remember that, in addition to being on all of the time, smart meters have been observed via RFR meters, in the hands of citizens, to put out levels of radiation much higher than cell phones!)

-Starling W. Childs, M.S. is a geologist, forestry consultant, and adjunct faculty member at the Yale School of Forestry and Environmental Studies. He focuses on the effects of RFR on wildlife and nature. He is President of the Berkshire-Litchfield Environmental Council. He discusses the effects of RFR on trees, bees, bats, frogs, and birds [<http://vimeo.com/17268728>].

-Many citizens have purchased RFR meters and recorded microwave activity inside and outside of their houses after smart meters were installed. Here are a few recordings of what they have found:

<http://www.youtube.com/watch?v=AF2QdkhW-JQ> ; <http://www.youtube.com/watch?v=uRejDxBE6OE> ;

<http://www.youtube.com/watch?v=rC-Nl8gGWQk&feature=related> ;

<http://www.youtube.com/watch?v=wzJb5cVCtd8&feature=related> ;

<http://www.youtube.com/watch?v=aOabFJlenz4&feature=related>

-This woman found that local smart meters were emitting more RFR than a local cell tower:

<http://www.youtube.com/watch?v=N6VwYPL9aE4&feature=related>

- Citizens who have had smart meters installed on their property report the disappearance of bees and also report disoriented bats: <http://www.youtube.com/watch?v=kIoJJgKkyzs&feature=related>

Annotated Links to Sites of Interest

-Here is a list of 69 published articles demonstrating the negative health effects of electromagnetic radiation on human physiology, many of which deal specifically with RFR:

http://thepowerfilm.org/documents/Comprehensive_list_of_69_EMR_studies_with_summaries.pdf.

-Are electric companies presenting fuzzy math when they say your smart meter will be no more harmful than a cell phone? This professor thinks so: <http://stopsmartmeters.org/2011/04/20/daniel-hirsch-on-ccsts-fuzzy-math/>. Scroll down and compare the misleading chart presented by an electric company, which used mixed units of measurement, versus a reconstructed chart using corrected data.

-The Sage Report, authored by respected environmental consultant Cindy Sage, one of the writers of the *Bioinitiative Report*, which has been used internationally by governments who wish to bring their RFR standards up-to-date, has found that smart meters installed in California were likely to violate the FCC's RFR limits [http://sagereports.com/smart-meter-rf/?page_id=196]. The Sage Report uses "computer modeling of the range of possible smart meter RFR levels that are occurring in the typical installation and operation of a single smart meter, and also multiple meters in California," and finds that "FCC compliance violations are likely to occur under normal conditions of installation and operation of smart meters and collector meters in California."

- The *BioInitiative Report* [<http://www.bioinitiative.org/freeaccess/participants/index.htm>], is a document prepared by a group of experts with impressive credentials, from around the globe, in an attempt to convey to lawmakers that better regulation of the telecommunications industry is absolutely essential [http://www.bioinitiative.org/freeaccess/press_release/index.htm].

-Why stop smart meters? Read what stopsmartmeters.org has to say: <http://stopsmartmeters.org/why-stop-smart-meters/>

-Around the U.S., increased utility bills have been reported to coincide with the installation of smart meters: <http://stopsmartmeters.org/frequently-asked-questions/faq-billing-issues/>

-Some experts feel that RFR from cell phones and wireless devices are responsible for decreased bee populations: <http://www.marketplace.org/topics/business/news-brief/study-cell-phones-could-be-killing-bees> ; <http://www.safelandforbees.org.uk/bees-and-microwave-radiation.html>

-Around the U.S., there have been reports of smart meters starting buildings on fire and ruining electrical equipment: http://emfsafetynetwork.org/?page_id=1280

-Many highly educated people are speaking out about the health implications of our modern-day constant exposure to RFR waves: <http://electromagnetichealth.org/quotes-from-experts/>

-The Alliance for Human and Environmental Health has put together an informative site with some good links regarding smart meters: <http://www.allianceheh.org/smart-meterswireless-safety.html>

-The Utility Reform Network has many interesting articles pertaining to smart meters: <http://www.turn.org/search.php?fulltext=smart+meter&Search=Search&x=0&y=0>

-"The Council of Europe, based in Strasbourg (France), now covers virtually the entire European continent, with its 47 member countries. Founded on 5 May 1949 by 10 countries, the Council of Europe seeks to develop throughout Europe common and democratic principles based on the European Convention on Human Rights and other reference texts on the protection of individuals

[<http://www.coe.int/aboutCoe/index.asp?page=quisommesnous&l=en>]." The Council of Europe has issued a report called entitled "*The Potential Dangers of Electromagnetic Fields and Their Effect on the Environment*," which concludes in part that, "the precautionary principle and the right to a healthy environment, particularly on behalf of children and future generations, must be key factors in all economic, technological and social development of society

[<http://assembly.coe.int/main.asp?Link=/documents/workingdocs/doc11/edoc12608.htm>]."

-The "European Parliament resolution of 2 April 2009 on health concerns associated with electromagnetic fields [<http://www.europarl.europa.eu/sides/getDoc.do?type=TA&reference=P6-TA-2009-0216&language=EN>]" shows that European regulators consider RFR exposure a clear and present danger . . . unlike the U.S.!

NOTE REGARDING COPYRIGHT: All are free to copy and distribute this article, per the author. Please share with your neighbors, so that they too may make an informed decision regarding smart meters. Help keep your neighborhood safe from radiofrequency radiation "electrosmog!"

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NOTE: The author has no background in engineering, physics, or any sort of electrical work. Accordingly, the work of experts who do has been used to inform her writing, as indicated by the HTML references.

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