

Smart Meters – Not a Smart Idea

Health & Safety Risks of Wireless Utility Meters

All humans, creatures, plants, and even the Earth itself are electromagnetic beings designed to live in harmony in a natural field of energy that balances, nurtures, and sustains life. The energy field in which we live consists of intertwined electrical and magnetic energy that travels as waves known as electromagnetic radiation (EMR). Low frequencies travel in long waves, while high frequencies travel in short waves. The electromagnetic spectrum is the range of frequencies of electromagnetic radiation. At the lowest end of this spectrum are extremely low frequencies, then low frequencies used to power electricity, ascending through radio waves and microwaves used for communication, to infrared, the visible light spectrum, and ultra-violet light, up to the ionizing radiation of x-rays and gamma rays at the highest end of the spectrum. Frequencies are measured in hertz (Hz).

In 1952 German physicist Winifred Schumann discovered that the Earth emits a natural extremely low frequency energy field of 7.83 Hz which coincidentally is the exact frequency of the human brain. Known as the Schumann resonance, it is this energetic frequency of the electromagnetic spectrum with which all of life must resonate in order to thrive. Research has shown that exposure to this frequency is integral to survival. It controls our mental and physical health and synchronizes our circadian rhythms. Our cells communicate and our DNA delivers instructions using electromagnetic frequencies. Our hearts and brains are regulated by internal bioelectrical signals, so any changes to our electromagnetic environment can have a significant impact on our wellbeing.

Throughout evolution humans and other life forms have had to adapt to environmental changes. However, never before in recorded history has the energetic landscape of the planet been so dramatically altered as with the invention of wireless technology in the 1980s. Since mobile phones first became popular in the 1990s, wireless devices have worked their way into the fabric of modern daily life. There are now 322 million cell phone subscribers in the U.S. and 4 billion worldwide with over 5 million cell towers and antennas scattered across the planet. 20 million Americans currently use wireless laptops, tablets, and routers, and according to the Wireless Association, that number has increased by 50% in just the last two years. Wireless devices emit radio frequency radiation (RFR) that consists of low intensity high frequency radio waves of non-ionizing radiation in the microwave range of approximately 900 MHz to 2.4 GHz. Wireless RFR now permeates most cities and rural areas and is spreading at lightning speed around the globe. Up until recently, we could choose whether or not to use a wireless device, however this has changed with the introduction of smart meters.

In 2008, fueled by \$3.5 billion in stimulus funds from the U.S. Department of Energy, smart meters began replacing the safe reliable analog utility meters (with spinning dials) used for decades to record power consumption. A smart meter is a two-way digital wireless communication device that is installed on a home or commercial building to record energy usage. The smart meter communicates this information by sending signals through a network of smart meters on other homes and buildings to collection meters which relay the information back to the utility company. This eliminates the

need for a utility worker to come by your home to read the meter each month and enables utility companies to track power consumption on a continuous basis. Smart meters have two antennas that broadcast radio frequency microwave radiation at 900 MHz (the same as mobile phones) and 2.4 GHz in approximately the same frequency range as a typical cell tower. However, depending on how close the meter is to occupied space in the home, a smart meter can cause much higher RFR exposures than cell towers. If a smart meter is located on a wall shared with a bedroom or kitchen, the RFR exposure can be the same as being within 200 to 600 feet from a cell tower with multiple carriers. Unlike a cell phone which exposes just the head and neck to RFR, smart meters and cell towers produce microwaves that go out in all directions and immerse the body in RFR which increases the risk of overexposure to sensitive organs such as the eyes and testicles. Depending on how it is programmed, smart meter emissions can reach several hundred feet to a mile or more. This means that your neighbor's smart meter may be affecting you as well.

Daniel Hirsch, an expert on nuclear policy at the University of California, Santa Cruz reported that smart meters emit 100 times more cumulative whole body RFR exposure than cell phones. People in homes with collection meters that have a third antenna sending signals for an entire neighborhood back to the utility company, receive even greater exposure as do residents in apartment buildings with multiple smart meters.

While other wireless devices can be turned off, a smart meter emits microwave radiation throughout your home and body 24/7 and cannot be turned off. Unlike other wireless devices, smart meters typically produce atypical, relatively potent, and very short pulsed microwaves that have never been fully tested for biological effects. They emit these millisecond long RF bursts on average 9,600 times a day with a maximum of 190,000 daily transmissions and a peak level emission 2 ½ times higher than the established safety signal. The figures for RFR exposure given by utilities are time-averaged numbers which hide the peak power of the smart meter and disguise the fairly continuous nature of the pulses. To date, there have been no studies published on the effects of smart meter radiation on animals or humans. However, some research indicates that pulsed radiation is more stressful to the body and induces a greater biological effect than constant radiation. The American Academy of Environmental Medicine has called for "immediate caution regarding smart meter installation" citing studies showing harmful biological effects from wireless RFR.

Smart meters are not certified for safety by the Underwriters Laboratory and have been responsible for numerous electrical fires. (See www.emfsafetynetwork.org for more information.) They are also vulnerable to hacking which poses an individual and national security threat.

During the second phase of smart grid implementation, homes will have a Home Area Network which transmits usage information from appliances that are equipped with smart chips (wireless transmitters) that enable utility companies to track which appliances you are using and when you turn them on and off. This personal data could then potentially be sold to other companies for marketing purposes.

In the U.S. smart meters have been deployed in 40 states thus far and they are mandatory in most states. This is key to a system that enables utilities to track and control energy usage in homes and commercial buildings across the nation through a network of smart meters referred to as Advanced Metering Infrastructure (AMI), known as the smart grid. Smart grids have also been established in Canada, Europe, Australia, Asia, New Zealand, Mexico, and South America with plans to expand which will blanket the Earth in microwave radiation.

Wireless devices emit signals our bodies have never experienced before and expose us to electromagnetic fields many millions of times greater than just 50 years ago. The electrosmog from RFR fields is quickly drowning out the Earth's natural Schumann resonance frequency of 7.83 Hz and all of nature is experiencing the consequences.

In the compelling documentary, "Resonance – Beings of Frequency" James Russell covers the profound and devastating impact wireless radiation has had on humans and wildlife. Our sensitivity to electromagnetic fields is in part linked to proteins called cryptochromes which convert wavelengths of light into chemical energy that is utilized to repair DNA, control the biological clock, and along with magnetite crystals in the brain, are an integral part of the navigation system. Electromagnetic fields that alter the natural environment can interfere with these important functions. Studies show that RFR may be a major cause of bee colony collapse disorder and the decline of many species of birds and butterflies. While these species may be the "canaries in the mine", people have also been adversely affected. A Swedish study showed that 35% of the population has a condition called electrohypersensitivity (EHS) from continuous exposure to RFR.

To date, there have been no long term studies on the safety of wireless technology, yet there have been thousands of studies over the last 50 years showing adverse biological effects of RF radiation on humans. The industry claims that wireless devices are safe based on outdated standards established in 1996 by the FCC which tested short term thermal (heating) effects of RFR on tissue of adult men for 5 minutes and 30 minutes. They do not take into account the damaging long term non-thermal effects of RFR on a cross section of the population. Of the few studies that claimed wireless devices are safe, most were flawed and funded by the wireless industry.

The 2012 Bioinitiative Report is an analysis of 1800 studies that cover a wide range of biological effects of low intensity RF and ELF electromagnetic radiation on human health. The report was prepared by 29 authors including PhDs and MDs from 10 countries. The conclusions of the report were astounding, reporting a myriad of damaging effects from RFR including: abnormal gene transcription, stress response indicating exposure to a toxin, DNA damage leading to increased cancer risk, loss of DNA repair capacity in human stem cells, cell membrane leakage, reduction in free-radical scavengers (particularly melatonin), sperm damage, neurotoxicity, seizures, abnormal brain and bone development in offspring from exposure to cell phones during pregnancy, behavioral and learning disorders, autism, sleep disturbances, infertility, thyroid damage, hearing problems, cataracts, memory loss, headaches, heart problems, increased risk of stroke and Alzheimer's, high blood pressure, leakage of the protective blood-brain barrier, and more.

The report states that bioeffects of wireless radiation occur within the first few minutes of exposure at levels of RFR deemed safe by the FCC. Prolonged exposure to RFR from wireless devices can result in more serious illness due to interference with normal body processes. Authors of the report concluded that the current FCC public safety standards set by engineers based on thermal effects are irrelevant for protection of human health and should be revised.

Children are much more vulnerable to EMR and RFR due to their developing nervous and immune systems, their thinner, softer craniums, and greater absorption of radiation into their brains and eyes. A 2012 study at Yale University showed in-utero exposure to RFR from cell phones caused hyperactivity and impaired memory. Dr. Dietrich Klinghardt, MD, PhD performed a study that showed that pregnant women who gave birth to autistic children slept in a location in which EMR was on average 20.7 times higher than pregnant mothers who gave birth to non-autistic children.

In May, 2011, the World Health Organization classified radiofrequency radiation emitted by wireless devices as a 2B, possible human carcinogen, in the same class as lead and DDT. A Swedish study reported in 2012 a 290% increased risk of brain cancer in people who used cell phones for 1 hour per day over a 10 year period. There are also reports of breast cancer and leukemia clusters around cell phone towers. Exposure to RFR interferes with the production of melatonin, the hormone that induces sleep and is essential for strong immunity. Low levels of melatonin have been reported in cases of breast cancer, prostate cancer and autism. Despite all of these reports, the smart meter roll-out continues.

Numerous health complaints have been reported by residents after smart meter installation including anxiety, depression, vertigo, elevated heart rate, arrhythmia, ringing in the ears, headaches, tremors, seizures, increased blood pressure, nosebleeds, rashes, fatigue, muscle spasms, stiffness, pain, inflammation, eye problems, nausea, insomnia, brain fog, hyperactivity, hormonal disorders, respiratory distress, urinary problems, autoimmune disorders, recurrence of cancer, pacemaker defibrillation and increased electrohypersensitivity. Symptoms can occur shortly after smart meter installation, while others may develop after continued exposure. Existing health conditions can worsen and be difficult to heal, especially Lyme disease and neurological disorders.

The U.S. Energy Policy Act of 2005 indicates utilities should request the customer's permission before installing a smart meter. Yet utilities continue to install smart meters without our consent and refuse to remove them when asked.

As of January, 2013, 18 U.S. states have introduced legislation to allow residents to refuse smart meter installation and to replace smart meters with the original safer analog meters. For more information on RFR and what you can do about smart meters visit www.centerforsaferwireless.org, www.stopsmartmeters.org, and www.emfsafetynetwork.org.

If you currently have a wireless smart meter on your home and wish to have it replaced with a safer analog or non-communicating (non-RFR emitting) meter, contact your utility company and request this option.