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Dirty Electricity — Stealth Trigger of Disease Epidemics and Lowered Life Expectancy

Analysis by Dr. Joseph Mercola | December 31, 2023

STORY AT-A-GLANCE

- Many diseases of civilization, especially cancer, are related to an artifact of electricity: electromagnetic interference (EMI) or "dirty electricity." Historical data also suggests electrification has lowered life expectancy
- EMI is biologically active and affects mitochondrial function, which we've now come to appreciate is at the heart of virtually all chronic disease
- Cancers appear to be frequency-specific, meaning certain frequencies cause specific cancers. Male breast cancer is a sentinel for EMI exposure

Editor's Note: This article is a reprint. It was originally published May 28, 2017.

Did you know that a significant percentage of the diseases we now face is related to an artifact of electricity? In this interview, Dr. Sam Milham, author of "Dirty Electricity: Electrification and the Diseases of Civilization," explains the health hazards of dirty electricity or electromagnetic interference (EMI).

Milham is a physician and an epidemiologist, and has spent decades (he's now 91 years old) doing pioneering research in this field. In his book, he details the extensive journey he took to uncover the link between dirty electricity and human disease. In a nutshell, dirty electricity, or more accurately stated, EMI, impacts your biology, specifically your mitochondrial function, which we've now come to appreciate is at the heart of virtually all chronic disease.

What Is Dirty Electricity?

Sunlight is a natural or native form of electromagnetic frequency (EMF). There are also four basic non-native or artificial EMF exposures: magnetic, artificial light, electrical and microwave (which includes not only your microwave oven but also cellphones, routers and portable phones).

Dirty electricity refers to the electrical component of this EMF spectrum. A more precise term is electromagnetic interference or EMI. "Dirty" is more of a descriptive layman's term. But what exactly is EMI and how is it generated? Milham explains:

> *"The electric grid began with Edison in 1892 at the Pearl Street Generating Station. It turns out that from the very second he started generating electricity, he was making dirty electricity. The way I know that is because if you read his publications, he had a big problem with his original generators … They had brush arcing. The way they made electricity was by spinning magnets that had brushes to pick up their contact points.*
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> *All electric motors have brushes. Generators have them. They're made out of graphite … Arcing and sparking makes dirty electricity, which are really high-frequency electric transients. They come and go. They're spikey. They have very short latency times.*
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> *From the outset of the grid, we've been exposed to this. It's not the 60-cycle stuff. We're talking about frequencies up in the kilohertz and higher; thousands of cycles per second."*

EMI Microwaves Travel Far and Wide

There are also microwaves, and this is not just your microwave oven, but your portable phone, cellphone and cellphone towers.

> *"All transmitters, AM, frequency modulation (FM) and especially cell towers [produce microwaves]. Your cellphone works because there's a transmitter out*

there that transmits to you. They all run on DC.

Every cell tower in the world has a huge inverter in it to make the DC to run the transmitter, and also to charge the backup batteries. They make dirty electricity by the ton. Lots of schools have cell towers on campus. What they're doing is they're bathing the kids [with EMI].

It gets back into the wires; the ground (lot)wires and power wires that service it. The grid becomes an antenna for all this dirty electricity. It extends miles downstream … [A Brazilian study] looked at deaths from cancer [and] distance of residence from the base of the cell tower.

They got effects out to 500 meters. That's 1,500 feet. I'll tell you, the cell tower can't talk that far. It's the dirty electricity — the EMI in the grid, in the wires running into your house, through the ground and through your power cords — that's doing it."

Dirty Electricity Is Biologically Active

A classic example of EMI is AM radio wave transmission interruption, as demonstrated in Milham's video above. But why exactly should we be concerned about EMI in our homes?

> *"Over the 50 years I've been doing this, it's become super clear that EMI or dirty electricity is very biologically active. I wrote the book to warn the population because nobody seemed to pay attention to it. This is the major cause of all the so-called diseases of civilization,"*[1] Milham says.

I myself am becoming quite passionate about this issue. I've known about dirty electricity or EMI for nearly two decades, but I never fully appreciated the impact it has until I read Milham's book. Then, the connections suddenly became apparent to me.

For the last year, I've been diving deep into the scientific literature of mitochondrial function, and it appears this is how EMI affects your health. In other words, it likely

increases mitochondrial free radical damage and contributes to mitochondrial dysfunction. Certainly, other variables contribute to disease as well, such as the processing of food, unbalanced nutrient ratios, pesticide contamination and so on. Still, the impact of EMI may be foolhardy to overlook.

All Solar Panels Generate Dirty Electricity

On a side note, many who use solar panels (photovoltaic panels) are completely unaware of the fact that they are a source of dirty electricity. I've had 15 kilowatt solar panels on my home for the last five years. Photovoltaic panels generate direct current (DC), which is essentially unusable in most homes.

In order to use the DC current the solar panels generate, you need to use an inverter that converts it to alternating current (AC). The problem is, the inverter used to generate AC is a phenomenal source of dirty electricity. I remediated mine and radically decreased the EMI generated when the inverters are on during the day.

Large, commercial solar arrays have a similar problem. They use inverters — sometimes thousands of them if they're really big arrays — and they all generate EMI or dirty electricity.

> *"If your utility has an appreciable wind or solar component, it is, by definition, giving you dirty electricity,"* Milham notes. *"[W]hen I first discovered this business, I went online; I studied commercial sources of photovoltaic inverters … I found this statement … [which] said that all photovoltaic inverters create amplitude modulation (AM) radio interference. What does that tell you? It says it's all dirty."*

This EMI connects or affects your biology when it's on a circuit or in the earth. For example, if you have a solar panel in your house, not all circuits in your house will be hooked up to it. The only circuits affected by EMI will be the ones hooked up to the solar panel inverter. The EMI gets into the ground and can also affect your neighbors.

Chronic EMI Exposure Raises Your Cancer Risk

Once EMI is generated, how far away must you be from the wire in question in order to avoid biological interference? According to Milham, the distance can be quite significant. In many cases, entire areas of ground can be a source of EMI, raising the current in your body.

> *"About three years ago, [the late professor] Martin H. Graham … and Dave Stetzer, who pioneered and studied this field and trained me … sent me an off-the-shelf fluke multimeter, which measures volts, amps and ohms. He showed me how to use it to measure current in my body.*
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> *That's been a mindblower … I put an electrocardiogram (EKG) patch on my chest for one lead … and the other [fluke multimeter lead] goes to an electrical outlet ground … It then measures the current in my body …*
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> *The meter comes with everything you need. All you've got to do is take a 12-gauge wire and put a three-prong plug on it, where you only contact the round plug. That's attached to your black electrode. That's for the ground. The red one goes to your EKG patch on your chest (or to your mouth).*
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> *I find that just walking on the pavement in an area, I could get very, very high, probably carcinogenic fields of current in my body. We're talking millivolts [and] microamps …*
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> *The National Institutes of Environmental Health Sciences (NIEHS) studied this years ago. They concluded that 18 microamps is sufficient to put enough voltage in your body to give you cancer with chronic exposure. You want to keep [your body current] under 18 microamps. The higher it is, the worse it is …*
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> *I find 200 to 300 microamps in lots of places, just standing on the floor … One of my favorite places is a local farmers market here. Last year, I was horrified to find out that just walking or standing in that place, I was putting 200 microamps of current into my body*[2] *…*

I was sitting at a Hewlett-Packard laptop and was measuring myself. I just touched the case of the laptop and found it was putting 80 microamps into my body. I finally got rid of it by putting a USB to an outlet ground. That fixes it."

Beware of Fluorescent and LED Lights

Milham also discovered that almost all non-incandescent lighting puts high current into your body, directly from the light. This includes fluorescents, compact fluorescent lights (CFLs) and light emitting diodes (LED) light bulbs.

Dr. Alexander Wunsch, a world class expert on photobiology, details many of the health hazards associated with LED lights, but the dirty electricity component is yet another reason to avoid these types of light bulbs in your home and office space. As noted by Milham:

"This explains a lot. I started doing occupational mortality [investigations] 30 years ago … I was puzzled as to why the highest cancer rates [occur in] teachers, professors and office workers. Why is melanoma more common in people who work indoors than outdoors?

Why is it more common in teachers and professors than in lifeguards or farmers? Why do you get it on parts of your body that never see the sun? It's due to [nonnative artificial] EMF, as I've been measuring in schools and colleges. There's just no place to hide."

In the 1950s, photobiologist John Ott studied children in a Florida school who had attention deficit hyperactivity disorder. He believed these kinds of behavioral problems were associated with the fluorescent lighting, and was able to improve the children's condition by placing an EMF-blocking wire mesh screen in front of the lights that was then grounded.

This and other findings are discussed in Ott's book, "Health and Light: The Effects of Natural and Artificial Light on Man and Other Living Things."

Male Breast Cancer — A Sentinel for EMI Exposure

Interestingly, Milham's work suggests cancers are frequency-specific,[3] meaning certain frequencies cause specific cancers. He also notes that male breast cancer is a sentinel for EMI exposure,[4] just like mesothelioma is a sentinel for asbestos exposure. Unfortunately, few are willing to take the issue seriously.

> *"In the second edition of my book I comment (willfully) that there's an epidemic of male breast cancer in Camp Lejeune in the Marine Corps. I wrote to them and said, 'Look at these 15 studies that link EMF to [male breast cancer].' They were saying it was due to the drinking water contamination. There's no way. It's due to EMF for sure. They just ignored me."*

Milham was also involved in an investigation[5] at La Quinta Middle School in Palm Springs. Teachers were convinced an environmental problem was at fault for an epidemic of cancer among the staff. In all, 18 teachers at the school had developed cancer. Other schools in the system had at most two or three cases.

The superintendent of the school hired an expert from the local tumor registry (cancer institute), who informed the teachers that their cancers were due to sun exposure. Milham initially spent months trying to contact the school, to no avail. The superintendent told him they were satisfied with the answers they'd received.

Eventually, at the request of the teachers, he was allowed into the school for two nights to investigate, yet shortly thereafter, he was accused of criminal trespass by the school district. They simply did not want him to get involved. The state teachers' association stonewalled him as well.

> *"I tried to do another school that had a cell tower on campus and an epidemic of mostly breast cancer in the staff. Once again, they hired a University of California professor to come to a school board meeting and try to shoot down my [research]. They wouldn't cooperate, so what are you going to do? You can lead these people to water but you can't make them drink."*

Historical Data Reveal Public Health Impact of Electrification

Clearly, there's a strong negative incentive against this type of information. What intrigued me is that when Milham did his initial analysis and historical review,[6] he found a strong correlation between electrification and mortality from cancer, including female breast cancer and childhood leukemia[7] — and this data dates back to 1900!

By the turn of the century, most big cities in the world had electricity, while rural areas didn't catch up until the mid-'50s. So, for half a century there were two large United States populations covered by a good vital record system of deaths and births. One population group was exposed to electricity and the other wasn't. When you compare these two groups, you discover some truly amazing differences in vital statistics.

> *"At the turn of the century, if you lived in New York City or most of the other cities in the country, your average life expectancy was low-50s. If you were Amish and didn't use electricity or if you lived in rural Mississippi or rural New York State, your longevity was in the 70s.*
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> *Fast forward to the 1930s … the urban cancer [mortality] was 50% to 80% higher than the rural cancer mortality. That's enough to blow your mind. It's internally consistent."*

Today, the risks are greater than ever before, thanks to ground currents. The electric grid in the U.S. is called a grounded Wye grid, designed for protection against lightning. The neutral center taps of their transformers are connected to the earth by a wire. In the U.S. about 80% of the current delivered to loads like motors and lights returns to the substation via the earth.

Dairy farmers were among the first to sound the alarm that something was wrong. In the 1970s, they noticed cows were dying, weren't producing milk and had trouble reproducing. "This big old BACI (before-after control-impact) is a wonderful canary in the coal mine for EMF," Milham notes.

Stetzer, Graham and others did a study in which they identified the parts of the EMF spectrum that impact milk production in cows. Interestingly, their findings reveal milk production is affected by certain harmonics at multiples of 60 Hz. At these intervals, frequencies have a harmful effect on the cows. Chances are, the same applies to human beings.

Biological Mechanisms of EMI

As mentioned, dirty electricity or EMI are high-frequency electric transients and harmonics that come and go. These aberrant peaks in frequency are emitted quite a distance, typically greater than 10 feet. This means that if you're within range, these frequencies can resonate with your body, causing some biological effect.

One suggested mechanism of harm is related to the production of a reactive nitrogen species (RNS) called peroxynitrate. Evidence also suggests it can affect mitochondrial function, which I believe is a major mechanism of harm. More generally speaking, EMI acts as a biological stressor. In one of Milham's studies, he showed that by cleaning up the electrical environment, they were able to reduce the production of stress hormones.

He's also shown that by filtering dirty electricity from a library, the levels of neurotransmitters in people spending time in the library were beneficially altered. Milham also cites a study by two German researchers, who were able to demonstrate that the installation of a cellphone tower in a previously pristine valley produced long-term changes in a wide variety of measurable hormones, including stress hormones.

More Information

If you're intrigued by this information and want to learn more, be sure to pick up a copy of "**Dirty Electricity: Electrification and the Diseases of Civilization**." You can also find more information, including copies of Milham's research papers and scientific reports on his website, SamMilham.com. I've also provided a number of those papers as supporting references throughout this article.

From my perspective, there's no doubt dirty electricity is triggering and/or exacerbating chronic disease, and if you care about your health and longevity, I urge you to face this information head on, disturbing and discouraging as it may be. While it may be impossible to avoid all EMI exposure, there are ways to limit and minimize your exposure inside your home and, potentially, at work. Doing so may go a long way toward protecting your and your family's health over the long term.

Sources and References

- [1, 6] Medical Hypotheses 2010; 74: 337-345 (PDF)
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