

## The Risks of Radiofrequency Technology – A Brief Review

In the last decade radiofrequency (RF) technology has grown at an astronomical rate, with RF signals now at very high levels in most communities. All this has happened despite considerable scientific evidence highlighting the dangers of RF exposure. On August 30, 2013, the American Academy of Environmental sent a letter to the Federal Communications Commission urging the federal government to lower acceptable limits of RF exposure to protect the public. Here is an excerpt from that letter:

It became clear to AAEM physicians that by the mid 1990's patients were experiencing adverse health reactions and disease as a result of exposure to electromagnetic fields. In the last five years with the advent of wireless devices, there has been an exponential increase in the number of patients with radiofrequency induced disease and hypersensitivity.

Numerous peer reviewed, published studies correlate radiofrequency exposure with a wide range of health conditions and diseases. These include neurological and neurodegenerative diseases such as Parkinson's Disease, ALS, paresthesias, dizziness, headaches and sleep disruption as well as cardiac, gastrointestinal and immune disease, cancer, developmental and reproductive disorders, and electromagnetic sensitivity. The World Health Organization has classified RF emissions as a group 2 B carcinogen. This research is reviewed and cited in the following attached documents . . .

One recent report has suggested that 1-3% of people have electromagnetic hypersensitivity, yet public awareness of this condition remains low—as does concern about the more subtle (yet potentially serious) effects that RF exposure has on all people. The current situation is analogous to the dramatic increase in smoking during the early to mid-20<sup>th</sup> century when a rich and powerful tobacco industry tried (successfully for some time) to shape cultural beliefs about the safety of smoking, while offering fallacious research supporting their claims. Eventually medical science turned cultural perceptions around and, with that, the politics of the problem shifted dramatically. The present day work of the AAEM and other organizations is only the beginning of an equivalent sea change in cultural understanding and practice.

Much research has already been done, and more is still to come, but what is lacking isn't the research so much as public awareness and precautionary policy-making. Many countries in Europe, especially Sweden, are far ahead of us on both fronts. For now, then, we continue to live with a silent, invisible, odorless phenomenon that has the capacity to alter our biology at a cellular level. Until a collective understanding of the issue evolves, we each are left to protect ourselves and our families as best we can.

The attached handout is offered as a list of possible first-line interventions for anyone who is concerned about RF exposure.

-- S.E. (12/14)

## Ways to Minimize Your Own Radiofrequency Exposure

In most cities and towns, RF levels are moderate to high throughout areas of greatest commercial development. Residential areas are more variable, with local levels especially dependent on where the nearest cell towers are located and/or the location of any Smart meters. Short of moving to a new home or town, or avoiding certain parts of your town, you can't do much to alter this background level of exposure. That said, the majority of exposure for most people is a result of lifestyle choices they can have control—e.g. the use of computers, phones, and other electronic devices. The following will explore these areas. Pay special attention to the closing section about how to make your bedroom safe.

Internet Connectivity: Wireless computer systems are likely the major source of RF exposure in most homes. Of note, even if you can pick up a neighbor's wifi signal on your own computer, this is likely not a major exposure for you. The proximity of your own wireless set up is much more crucial to address.:

1. Avoid exposing yourself to wifi altogether by using a corded connection to the Internet; or
2. Or if you must have it, unplug or turn off your wireless router when not in use (especially while sleeping at night).

Computers: Most newer computers have a built-in, RF-dependent capacity for internet connectivity, which is emitting radiowaves even when no connection exists. To minimize exposure:

1. Turn your computer completely off when not in use, or
2. If you are using your computer, but without needing a wireless connection, put it in "airplane mode" (some computers still emit a periodic radiowave pulse even in this setting, but much less than in normal mode).

Landline phones: Cordless phones are very RF-active, as bad or worse as cellphones, as both the phone and the base station are emitting radiowaves in the room when you are using them). To minimize exposure:

1. Have at least one old-style corded phone at home, and have it be your preferred phone, whenever possible;
2. Consider avoiding cordless phones altogether as the base station is a small "cell tower" that's emitting RF signal constantly, or
3. Unplug your cordless phone when not in use and use only when necessary.

Cell phones: Many cell phones, while switched on, are actively trying to connect to the nearest radio tower, even when you're not making a call. This means constant RF exposure throughout the day if you carry your phone with you and leave it on. Smart phones do this at a much greater intensity than old-style flip-open cell phones. To minimize exposure:

1. Use a corded landline whenever possible, using your cell phone for emergency calls only;
2. Keep your cell phone turned off when not in use;
3. If you must use your cell:
  - a. Consider getting an old-style "dumb phone" instead of a Smart phone.
  - b. Use the speakerphone feature and hold the phone away from your head and body.
  - c. Avoid Bluetooth earpieces altogether, as they add additional RF exposure;
  - d. Avoid using your cell phone while in your car (the car acts as a "Faraday cage," blocking signal and requiring the cell phone to emit at an even stronger intensity in order to stay connected);
  - e. Avoid using your cell in a low reception area as the phone will again have to emit at stronger intensity.



Smart meters: Most every home or business has a Smart meter, sometimes two—one for gas, one for electricity. Gas Smart meters only emit signal a few times a day and represent a minimal risk. In contrast, electric Smart meters are emitting a few times every minute. To minimize exposure:

1. Consider “opting out” of the Smart meter program by calling PG&E at 800-743-5000 (they will charge a one-time fee of \$75, then \$10 per month thereafter); or
2. If the Smart meter remains on, identify a “safe zone” in the house as far from the meter as possible—usually at least two full rooms away, perhaps even more;
3. RF shielding is also an option to increase the area of safety. A low cost option is to use a cardboard box, aluminum foil and duct tape to create a five-sided cube which allows the signal to go out only through the missing sixth side. Be sure to direct signal away from your house, especially your bedroom.

Microwave ovens: Despite built-in shielding, these leak very intense signal when turned on. To minimize exposure:

1. Best of all, get rid of your microwave oven. Aside from the RF exposure issue, studies have shown that microwave cooking seriously diminishes the nutritional value of food; or
2. Leave the room immediately after you’ve turned the oven on.

Other electronic devices (e.g. televisions, refrigerators, washing machines): Some newer models use wireless technology and are constantly emitting radiowaves, often even when not in use. Hard to know if yours are doing this without measuring with a meter. To minimize exposure:

1. If possible, purchase models that don’t use wireless technology; or
2. Unplug the device when not in use.
3. Of special note, streaming technology (e.g. Netflix) typically employ wireless technology to connect with the nearest cell tower. Unplug the transmitter box when not in use.

A Special Note About Bedrooms: Making your home “safe” should begin with your bedroom. You likely spend more time there than anywhere else in your house. Moreover, your brain uses sleep as a time of deep healing, rest and recovery. Things to do might include:

1. Choose a place to sleep as far from any Smart meter as possible (including the meters by your neighbors’ houses);
2. Never bring your cell phone or a cordless phone into the bedroom at night;
3. Switch off or unplug your wireless computer router at night;
4. Avoid sleeping in close proximity to any major electromagnetic source (e.g. a refrigerator, stove/oven, fuse box, PG&E meter, a cellphone tower, or power lines). Bear in mind that a wall in between provides no protection.
5. Use a battery-powered bedside clock.

**For more information, visit these websites:**

[www.electricsense.com](http://www.electricsense.com) [www.emfcenter.com](http://www.emfcenter.com) [www.emfsafetynetwork.org](http://www.emfsafetynetwork.org)