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Brampton: 220 Wexford Road Unit 2 Brampton, ON L6Z-4N7  
Ph: (905) 840-WELL Fax: (905) 840 -LIFE  
www.drjustineblainey.com  
www.blaineywellness.com

## **Hidden Dangers of Cell Phone Radiation & Other On-the-Go Technology**

By Ty Bollinger | March 5<sup>th</sup>, 2017

### **What Are EMFs?**

The National Institute of Environmental Health Sciences (NIEHS) classifies EMFs as “invisible areas of energy, often referred to as radiation, that are associated with the use of electrical power and various forms of natural and man-made lighting.” Except for the part about “often referred to” because EMFs are, in fact, radiation, this is a pretty good definition. Where NIEHS fails though is in its estimation of the dangers associated with so-called “non-ionizing,” or low-level radiation, which is the primary type of radiation we’re discussing here. NIEHS claims that non-ionizing radiation is “generally perceived as harmless to humans.” However, that is not the case. The fact is that this type of radiation causes negative biological effects, as evidenced throughout scientific literature. Polish researchers actually discovered back in 1998 that non-ionizing radiation directly alters cellular function, exerting both stimulatory and inhibitory effects on the physiological cellular framework. The most common effect is heat generation (though non-thermal biological harm has also been demonstrated), which can alter the characteristics of various bodily tissues depending on the amount of radiation present and its ability to penetrate the body. Tissue damage can promote the cellular mutations and increase your long-term risk of developing cancer. So, which sources of EMF exposure are the worst, and what can you do to minimize their irradiating damage to your cells, tissues and organs?

### **Cell Phone Radiation**

In today’s mobile-centric society, nearly everyone has a cell phone, and many people now have smart phones that act as mini handheld computers. Mobile phones can be major emitters of radiation, depending on both your phone model and the network on which it runs. A panel from the International Agency for Research on Cancer (IARC), an arm of the World Health Organization (WHO), determined in 2011 after reviewing dozens of peer-reviewed studies that mobile phones are “possibly carcinogenic,” posing similar dangers as dry-cleaning chemicals and pesticides. This is why it’s important to always use either your phone’s speakerphone or an appropriate wired earpiece whenever possible, avoiding direct contact between your phone and your ear or hand. The best earpieces are those equipped with hollow tubing between the antenna in the wire and the earpiece, as these help maximize the distance between the radiation-emitting antenna and your head. The World Health Organization (WHO) says the intensity of radio frequency (RF) radiation from cell phones decreases exponentially the further the device is held away from the body. Therefore your safest bet is to keep your cell phone as far away from your ear and body as possible at all times. Don’t carry it in your pocket, tucked into a bra strap, and definitely don’t sleep with it next to your head. When talking on your phone, take advantage of the speakerphone function whenever possible, as this will minimize the amount of radiation hitting your body compared to putting your phone directly against your ear.

### **California Health Officials Forced by Judge to Make Cellphone Radiation Dangers Public**

In a breaking news story... CBS reported on Mar 3, 2017, that California's Department of Public Health has just released a draft document outlining health officials' concerns about cellphone radiation exposure – after keeping it under wraps for over seven years! A member of UC Berkeley's School of Public Health sued the state in 2016 under the California Public Records Act to get the document released, and at long last the state has complied – but only after the judge indicated she would order the documents be disclosed. The hidden fact sheet provides essentially the same information I'm sharing in this article about the risks of cellphone radiation, as well as some tips to minimize cellphone dangers. One can only speculate as to why California Public Health officials felt it necessary to keep this information from the public for so long.

### **A Warning About Bluetooth® Technology**

Be sure too to avoid Bluetooth headsets. These pose serious radiation hazards due to the fact that they act as mini wireless antennas that blast EMFs directly into your ear and head. The average radiation level of a Bluetooth earpiece is 0.23 watts per kilogram (W/Kg) according to RF Safe. This is 10 to 100 times higher than the amount of radio frequency (RF) exposure needed to create “leaks” in the blood- brain barrier, allowing for toxins (not to mention the radiation itself!) to pass through into the brain. It's best to just say NO to Bluetooth!

### **Laptop and Tablet Computers**

As you might have already guessed, laptops and tablet computers such as the Apple iPad® are another primary source of radiation. These devices generate three different harmful types of radiation:

1. Extremely low frequency (ELF) radiation, which is generated by a computer's internal electrical equipment and wiring, including the power plug.
2. Radio frequency (RF) radiation, which occurs when wireless technologies such as Wi-Fi and Bluetooth are in transmission mode.
3. Heat radiation, which is evidenced by the rise in temperature that's felt when a device is powered on.

Affirming research conducted back in the 1970s that brought to light some of the dangers associated with EMFs, scientists from the Environmental Protection Agency (EPA) more recently warned that ELF radiation alters calcium ion activity in cells, which regulates energy production, membrane function and integrity, and both central and peripheral nervous system health. Wi-Fi radiation, which falls into the RF category, is similarly damaging – particularly for men who stand to suffer reproductive damage when RF-emitting devices such as laptops are positioned too closely to the groin area. Like with the issues caused by cell phone radiation, it's best to keep laptop computers off your lap and away from your body as much as possible. Laptop computers are best placed on a table at as much of an arm's length away as possible to minimize radioactive contact. If you must use your laptop on your lap, you can purchase a laptop cooling pad which will add a bit of extra space between the device and your body. Since Wi-Fi radiation loses its potency exponentially the further the source of it is away from your body (this is known as the inverse square law), every bit of distance counts! Another thing that many people fail to realize is that EMF-emitting devices such as laptop computers are exceptionally more harmful when plugged in as

opposed to when they're operating on battery power alone. Tests have shown that working on a laptop that's plugged in can result in up to 100 times more radiation exposure than using one that's operating on battery power. Rather than using Wi-Fi, connect your laptop to the internet using a hard-wired ethernet cable (when possible), and preferably one of a higher category such as a CAT 6a SFTP (screened shielded twisted pair) ethernet cable, which traps more radiation than a typical CAT 5 ethernet cable. Although common sense, spending as little time on your computer as possible, and when you're not using it, disabling the Wi-Fi connection or even turning your computer off completely, is recommended to help keep EMF pollution to a minimum. These devices emit a constant stream of EMFs when plugged in and "synced" up to a router or other wireless device.

### **Wearable Tech Emit EMFs Too**

Wearable tech such as the Apple Watch might as well be called a wearable EMF device. These watches are even worse than mobile phones in that they remain in constant, direct contact with your skin. New York Times columnist Nick Bilton covered this issue in March 2015, noting that constant, low-level radiation from such devices can trigger the formation of cancerous tumors, blood abnormalities, and more. The best way to avoid EMFs from these devices is to not wear them. If you choose to use wearable tech, be sure to remove it at night when going to sleep, and maybe even while you are working at your desk. As with your other EMF-emitting tech devices, always power it off when not in use and don't sleep with it near your body – especially your head. Regular battery-powered watches (and all other battery-powered tech, for that matter) also produce some level of EMFs, but that level is far lower than the amount emitted by tech devices that are plugged in, or that receive and transmit information wirelessly. The same rule applies however; if you can turn it off and keep it away from your body, then do so whenever possible. There's no question that portable phones and computers offer many conveniences and have made our lives easier in countless ways. For many people this convenience outweighs the worry of EMFs. My hope is that by becoming aware of the sources and dangers of cell phone radiation and EMFs, you'll take steps to minimize exposure for both you and your family.