

# Hormones, Breast Cancer

by Sherrill Sellman, ND

## EMFs, Cell PHONES

**H**ormones are powerful substances. They pack a big wallop considering the tiny amounts that are produced by the endocrine glands. Most hormones, such as estrogen, progesterone, testosterone, insulin, and melatonin, are made in parts per billion or parts per trillion. Even small hormonal fluctuations can create major physiological changes. As profound orchestrators of all of life's processes, maintaining hormonal balance is imperative for optimum health. When delicate hormonal balance and rhythms are altered, the body's ability to regulate fundamental systems goes haywire.

Our modern lifestyle poses many threats to optimal endocrine function. Stress, toxicity, poor quality food, lack of sleep, and pharmaceutical medications are all known hormone disruptors. However, there is one particular kind of hormone disruptor that is often the most overlooked: electromagnetic energy fields generated from cell phones and a variety of electrical sources and devices.

### Electromagnetic Fields—The 21st Century Smog

Modern physics has confirmed what Eastern philosophy has been based upon for thousands of years—the human body is fundamentally a coherent, highly sensitive electrical system, emanating its own electromagnetic field, known as a biofield.

All physical matter, including the earth itself, radiates electromagnetic energy. The electromagnetic frequencies (EMF) found within the natural world are harmonious with and supportive of life.

On the other hand, artificially created EMFs are 100–200 million times greater than what existed just two generations ago. Every minute of every day, whether we are awake or asleep, we are exposed to a constant barrage of man-made electromagnetic frequencies.

Constant interference with our natural energy fields from external sources of EMFs can eventually damage our own fields, resulting in many physiological imbalances, most notably the hardening of the cell membrane. When this happens, waste products can't get out and nutrients can't get in. This leads to free radical damage that alters the DNA and causes cell mutation. Such serious imbalances will also adversely impact hormone production and neurological processes.

This massive infusion of artificial energy overwhelms the system and leads to more rapid aging, elevated blood glucose levels, elevated lipid levels, high blood pressure, increased neuro-regulatory disturbances, and it compromises the central nervous, cardiovascular and immune systems.

Robert O. Becker, M.D., researcher and author of *Cross Currents: The Perils of Electropollution*, explains that our bodies and immune systems are being adversely affected by man-made electromagnetic fields from sources that include power lines, cell phones, radar, microwaves, satellites, ham radios, computers, video display terminals, electric appliances, and Wi-Fi hot spots. He believes that radiation, once considered safe, is now correlated with increases in cancer, birth defects, depression, learning disabilities, Chronic Fatigue Syndrome, and Alzheimer's disease.

### Melatonin, Breast Cancer and EMFs

Perhaps, one of the most serious consequences of EMFs exposure is its effects on our hormonal systems.

The pineal gland is a light-sensitive gland about the size of a pea located deep within the center of the brain. Once dismissed as a useless gland, it is now considered to be perhaps the most important gland in the body. The pineal gland produces the hormone melatonin.

Researchers are increasingly surprised at the extent of the physiological processes that are either controlled or influenced by melatonin: it regulates our circadian rhythms (governing our waking/sleep cycle), and it is one of the most efficient destroyers of free radicals, thereby allowing DNA synthesis and cell division to occur. Melatonin not only inhibits the release of estrogen but also actually suppresses the development of breast cancer. Melatonin's other anti-cancer property is its ability to increase the cytotoxicity of the immune system's killer lymphocytes. It is even able to enhance the immune system and counteract stress-induced immunosuppression.

In 2001, Masami Ishido, at Japan's National Institute for Environmental Studies, showed that breast cancer cells treated with melatonin would resume growing when exposed to power-frequency EMFs. He found that magnetic fields disrupt the cells' signaling system, their internal communications



network, which determines how they respond to their environment. This mechanism has helped to explain why reduced melatonin levels from EMFs have shown to cause a number of cancers, including breast cancer, prostate cancer, melanoma, and ovarian malignancies.

It is now known that melatonin suppression occurs at frequencies not far above those of the common household ranges of 50–60 Hz. If we sleep next to a cordless phone base station or a digital clock, or we have faulty electrical wiring, enough continuous EMF exposures are emitted to suppress nighttime melatonin production.

The correlation between breast cancer and EMFs continues to strengthen. Dr. Patricia Coogan, at the Boston University of Public Health, reported a 43 percent increased risk in women with a high likelihood of occupational exposure to magnetic fields such as those given off by mainframe computers. In fact, women who work in electrical jobs, including electricians, telephone installers, powerline workers, and electrical engineers, have a greater risk of dying from breast cancer. This increased incidence has been directly linked to the suppression of melatonin from EMFs.

But it's not just women who should be concerned about EMFs' causal link to breast cancer. In five studies, elevated EMFs have been implicated in an increased incidence of male breast cancer. Men who worked as telephone linemen, in switching stations, or in the utilities industry were found to have as much as a sixfold increase in breast cancer.

### More Hormone Disruption

Experimental physiologist, Charles Graham conducted research that found that magnetic fields had an effect on two other hormones: they increased estrogen levels and reduced testosterone, a risk factor for testicular and prostate cancer. He also believes that EMFs may actually fit the definition of an endocrine disrupter better than many hormone-mimicking environmental pollutants because magnetic fields appear to elicit their effects by acting on and through hormones rather than as hormones.

Tamoxifen, the most popular drug given to prevent recurrence of breast cancer, lost its ability to halt the proliferation of cancer cells when exposed to EMFs. The level of EMFs that produced this effect (12mG) is found in common sources, including hair dryers, vacuum cleaners, or appliances with large motors, such as refrigerators.

Neurotransmitters, a special class of hormones, include serotonin and dopamine. Neurotransmitters play a major role in moods, especially depression. Evidence has now shown a link between EMF exposure and altered serotonin and dopamine levels.

EMFs also increase the levels of adrenaline, the flight or fight hormone, released from the adrenals glands. B. Blake Levitt, author of *Electrical Fields*, states: "Prolonged chronic stress is detrimental to every anatomical system, including the reproductive one. Subliminal stress may affect fertility and elevate blood pressure, which can lead to heart disease and strokes, as well as suppressed immune function. . . . Even short EMF exposures, like the use of a cordless phone on and off throughout the day, could cause spikes in such hormone levels."

### What About Cell Phones?

Cell phones present a double whammy to our body. The microwave energy which radiates in a circular plume about 6–8 inches from the cell phone's antenna, penetrates directly into our brain, breaking down the protective blood brain barrier and causing DNA damage, free radical production and even brain tumors. Since the master glands of the body are located in our brain, massive disturbances to the hormonal signaling capacities may be generated from continual cell phone use.

Then there's the electrical circuitry from cell phones, which generates a competing energy that interferes with one's own biofield, or energy field. This kind of pervasive, or ambient, EMF compromises many physiological processes. When a cell phone is clipped onto the belt or kept in a pant pocket, this ambient field most powerfully affects the tissues and organs it is closest to, particularly the pelvic area. One study has already shown a 30 percent reduction in sperm count of mobile phone users. As more women clip their cell phone to their belts, female reproductive organs may also be at risk.

A word of caution also needs to be mentioned about the dangers caused by ambient radiation from headsets. It is now acknowledged that headsets, far from being protective, can actually increase radiation exposure into the brain by as much as 300 percent. Bluetooth technology is especially dangerous.

### Solutions—One, Two, Three

Protection from EMFs, whatever the source, involves a three-tiered approach. Ideally, all three layers of prevention should be utilized.

The primary intervention is to reduce exposure as much as possible. One excellent alternative is to use a safe, hollow air-tube headset when using a cell phone.

The secondary intervention is to minimize the effect of radiation. BioPro Technology is a company with proprietary proven technologies to address EMF pollution. One solution, the BioPro Harmonization chip, effectively "harmonizes" the stressful EMFs from cell phones. The QLink pendant is also recommended to balance or strengthen one's biofield.

The third intervention is directed at strengthening the body systems. This is where a healthy, organic diet and balanced lifestyle is imperative. In addition, antioxidant supplements improve the immune system and fight against free radical damage. Some of the most effective include melatonin, N-Acetylcysteine (NAC), SAME, lipoic acid, green tea, lycopene, coenzyme Q10, acetyl-L-carnitine, selenium, and vitamins A, C and E.

Ginkgo biloba is the first supplement to be tested against cell phone radiation. Pretreatment with this brain-protective supplement reversed cell phone-induced oxidative stress and depletion of antioxidant enzymes in rodents. Resveratrol and grape seed extract both protect against the type of oxidative stress induced by cell phones.

Love them or hate them, cell phones, and the ever expanding and intrusive EMF world are here to stay. The responsibility lies with each of us to take proactive steps that will protect us, our family and future generations. ■

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