

[Electric Fields, Melatonin from the Pineal Gland, and a Deep Night's Sleep: What's the Connection?](#)

written by Oram Miller | 21 March 2021

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This is the **third** in a series of **Articles on EMFs** written by Oram Miller, BBEI. The series is inspired by fellow building biologists [Ron & Lisa Beres](#), based in Irvine, California. Ron and Lisa have invited Oram to write articles on EMFs for their blog, [Healthy Home Dream Team](#). This article appeared on their blog on September 2, 2010. The original blog entry can be viewed by clicking [here](#).

This third article discusses one of the unknown causes of restless sleep, electric fields, and its connection to melatonin.

When was the last time you tossed and turned in the middle of the night for no good reason, unable to fall back asleep? Do you have all the latest gadgets plugged in by your bed: clock radio, cordless telephone, cell phone charger?

If you are savvy about EMFs, you probably moved your clock radio away from your head, but did you know that another type of EMF comes from your lamp cord? "But it's turned off when I sleep," you say. "There's nothing there." You also may say, "I checked my bedroom with a gauss meter and found no EMFs."

"Yes, but did you measure *electric fields*," I ask? It turns out there are several kinds of EMFs. We already talked about radio frequencies in previous articles. There are two more types of EMFs caused by house wiring, magnetic and electric fields. Both occur at 60 cycles per second, or Hertz (Hz), but they differ from one another in their effects on our health.

Magnetic fields are produced by current running through a wire—and anything else metallic, including water and gas pipes. They also come from “point sources” such as transformers (clock radios) and motors (refrigerators). Magnetic fields from electric current are like water flowing out of a garden hose.

Electric fields, on the other hand, come from voltage, not current. Voltage is the pressure of electricity in circuits and AC power cords in your house, much like the pressure of water in your garden hose. The trick is, you can have the water spigot open and pressure in the hose but no water spraying out. That’s like having the circuit breaker on and the lamp plugged in but turned off. Voltage is still there so that when you turn the lamp back on, the bulb lights up.

Yet when you turn the lamp off, the voltage (or electrical pressure) remains, and so does its field. Electric fields extend six to eight feet from all plastic-jacketed wires, including those in walls (called Romex) and those plugged into the wall. That field, which is present whether the lamp is turned on or off, oscillates between positive and negative charge 60 times a second (the frequency of 120 Volt AC electric power in North America) (Actually, the field oscillates back and forth between positive and negative 120 times per second, but there are 60 full cycles, with a positive phase and a negative phase, per second.)

How does all this affect your health? When you try to sleep, all the cords and plastic Romex circuits in your bedroom walls within a six to eight foot radius around your bed affect every cell in your body. The electrically charged particles in your cells—ions, protons and electrons—are constantly attracted and repulsed from these wires, sixty times a second, causing a subtle (or not so subtle) agitation when you try to sleep. Now you understand one big reason why you may toss and turn while you sleep and awaken every morning feeling fatigued.

The best attempts to induce good sleep, from warm milk to pills, fail to overcome this agitating influence. As a result, you don’t get enough deep Stage Three and Four sleep in the four to five sleep cycles we experience every night. Your pineal gland also doesn’t produce its normal dose of melatonin while you sleep, no matter how dark the room.

Once electric field levels have been reduced in the bedroom, many clients report how well they sleep. How do we accomplish that? We’ll discuss that in the next article.

Oram Miller, BBEI, is a Certified Building Biology Environmental Inspector. He provides EMF (electromagnetic field) evaluations for homes and offices locally in Southern California and nationwide over the telephone. You can contact Oram at 310.720.7686 or www.createhealthyhomes.com.

*To view the **next article in the series**, entitled, “Finally, a Good Night’s Sleep!”, click [here](#). It discusses the steps to take to protect yourself from harmful electric field exposure.*

*To view an extensive **list of links** to web sites documenting the health effects of exposure to EMFs caused by wireless devices, including cell phones, cordless telephones and wireless Internet (Wi-Fi) routers, click [here](#).*

*To view an extensive **list of links** to web sites documenting the health effects of exposure to EMFs in general, click [here](#).*

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