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Reduce Your Exposure to Electric Fields, Magnetic Fields and Radio Frequencies (EMFs)

These tips for a healthy home are based upon recommendations taught by the International Institute of Bau-biologie and Ecology (IBE), Clearwater, Florida (727-461-4371; www.buildingbiology.net) and comprise the material covered in the author's Healthy Home lectures. They are also based upon his experience from over thirteen hundred environmental home and office inspections conducted in California, Minnesota and ten other states over the past eight years.

The Twenty-Five Principles of Bau-biologie are presented at the end of these recommendations, as taught by the IBE.

For tips on creating healthy indoor air quality and protecting yourself from mold in your home and office, go to Oram's website, www.createhealthyhomes.com and click on "Tips for a Healthy Home," then click on "Improve Indoor Air Quality."

For tips on ways to remodel an existing home or office in a healthy way without making you or your family sick, or to design and build a healthy new home, go to Oram's website, www.createhealthyhomes.com and click on "Tips for a Healthy Home," then click on "Recommendations for Healthy Renovations and New Home Construction."

The information provided in this section covers a significant health risk that most people are not yet aware of. This unfortunately includes health care practitioners as well as industry and government agencies in this country responsible for oversight of the public's exposure to electric, magnetic and radio frequency fields.

The information presented below is somewhat detailed, but if you take the time to read it carefully and implement the recommendations it contains, you will be reducing a serious health risk and may very well provide yourself with the opportunity for a significant improvement in your health.

The scientific research that documents the harmful health effects from EMF exposure, especially from power lines, cell phones and Wi-Fi routers (see below) is abundant and growing. You do not hear about it in the American media, but the European and Asian press is covering this in detail. New studies from the State University of New York at Albany, called the BioInitiative Report (www.bioinitiative.org), say that the so-called "safe exposure limits" by the American and other governments is thousands of times too lenient, and they recommend setting new, much lower limits. Go to "EMF Research Citations" (www.createhealthyhomes.com/emf_research.php) and "Cell Phone and Radio Frequency Risks" (www.createhealthyhomes.com/cellphone_risks.php) on my website to read the latest articles and research studies on this issue and link to sites where you can purchase products to protect yourself.

Reduce Your Exposure to Harmful Electric Fields in Your Home by Doing the Following:

Take steps to identify and reduce your proximity to electric fields in your home and office, particularly at night when you sleep.

Why is it necessary to reduce exposure to harmful electric fields? Because doing so reduces exposure to a health risk that, according to European research, suppresses the body's hormonal function, immune system function, vitality levels and the ability to properly heal from illness and stay healthy.

Electric fields coming from wires in your bedroom walls and floor and power cords create an agitating, disruptive influence that interferes with deep rest and the rejuvenation capacity of the body. Avoiding electric fields at night provides a much deeper sleep and increases levels of melatonin produced by the pineal gland, which is severely suppressed when we are in the proximity of high electric (and magnetic) fields.

Sleeping in a high electric field environment keeps you from having deep, restful "Stage Four" sleep. This is because the polarity of Alternating Current (AC) electricity in the wires in your bedroom walls and floor and power cords changes from positive to negative 60 times a second (60 Hz). This causes a rapid, powerful alternating attraction and repulsion of each one of our body's trillions of cells, all night long. We are actually exposed to this harmful field wherever we are within a house all day and night because electric fields extend up to six to eight feet, but its harmful effect is especially disruptive when we try to rest and rejuvenate during the night.

This repeated attraction and repulsion of the cells of our body causes a subtle agitation, never letting us fully rest. As mentioned above, it also causes the pineal gland, located behind the pituitary in the brain, to make less melatonin, a very necessary hormone. The pineal gland normally makes a healthy spike of melatonin at night, but this spike in production has been suppressed at night for millions of people in homes throughout the industrialized world for the past one hundred years, ever since AC electricity was invented.

Chronic fatigue, fibromyalgia, depression, and many other illnesses have been the result of sleeping in the proximity of electric fields caused by lack of deep Stage Four sleep and reduced melatonin production.

When the levels of electric field exposure, however, are reduced in sleeping areas, you have a deeper, more refreshing sleep, allowing many chronic health problems to clear up. Melatonin levels come back to normal. Chiropractic treatments hold better and treatments provided by other health care practitioners are more effective. See “Comments from Clients” (www.createhealthyhomes.com/comments_clients.php) on this website for reports of improvement in health after clients have had their home or office evaluated and electric and magnetic field levels reduced.

Most people are unaware that electric fields exist in their home because electric fields are different than magnetic fields. Electric fields are not detected by a Gaussmeter, which only measures magnetic fields.

What’s more, electric fields can extend up to six to eight feet in every direction from plastic-jacketed, unshielded wiring (called “Romex”) running through your walls, floors and ceilings. This type of wiring is generally used throughout your house to power your switches and outlets.

Electric fields also extend up to eight or more feet from electric power cords, even if the lamp or radio is turned off, because, like most wiring in your walls, the cord is also not shielded. Electric fields are even greater and more harmful if a bedside lamp or floor lamp has a heavy metal base. This is because the metal acts as an inducer and amplifier of electric field levels, pushing them even higher.

European research has shown that nighttime exposure to electric fields greater than several hundred millivolts (or a few tenths of a Volt) as measured by the “Body Voltage Test,” is harmful. This research shows that prolonged exposure to electric fields can cause depression, restless leg syndrome, allergies, insomnia, and chronic fatigue, all due to disruption of cellular bioelectric function. This has unfortunately been the case for most of us since the beginning of the 1900s. Homes with knob and tube wiring, used before the 1940s, have even higher electric (and magnetic) field exposure, and pose a particularly significant health risk.

Building Biologists perform the Body Voltage test during a healthy home evaluation to precisely measure levels of electric field exposure, and we recommend ways to correct it to safe levels. We routinely find levels many times higher than those considered by our profession to be an “Extreme Biological Risk,” that is, 1,000 millivolts or greater. The fact is, in most homes in America, levels of 2,000 to 3,000 mV are not at all uncommon. Now you can begin to understand how widespread this problem is and how it has indeed contributed to ill health in the industrialized world over the decades. Yet this problem is identifiable and correctable, at least in individual homes.

The goal is to reduce electric field exposure to levels found outdoors when you are away from electric power lines; that is, 100 milliVolts (0.10 Volts) or less. What everyone needs is a space devoid of electric voltage up to six to eight feet around your bed in all directions at night while you sleep, above, below and beside you, where electric field levels are ideally measured down at a safe level of 100 milliVolts or less.

There are several ways you can move in this direction on your own, where you can at least create a safer exposure level of perhaps one thousand to a few hundred milliVolts, by doing the following:

First of all, I strongly recommend that you never use an electric heating pad or electric blanket. Also do not sleep on a waterbed while the electric heating element is plugged in, even if it is not turned on. These devices cause astronomical electric field levels that are quite harmful, up to twenty to fifty times the “Extreme” or “Critical Biological Risk” levels, as measured by our profession. Avoid them at all costs.

Secondly, purchase shut-off switches that plug into the wall, called an “inline switch” or “current tap with switch.” These are available from smaller hardware stores for about \$6.00. Plug each appliance located next to your bed, such as a lamp, into one of these and use it to turn the lamp off at the wall, not at the switch on the lamp, before you go to sleep. Otherwise the light may be off, but the power cord will emit an unhealthy electric field right next to your body, preventing you from having a deep, restful sleep.

A third way is to purchase special grounded and shielded power cords from www.lessemf.com, 518-432-1550, for \$4.50 each. Have an electrician replace the unshielded plastic power cord that comes with your lamp and other electric devices with this shielded cord, but they have to be sure that they ground the metal in the lamp to the two ground wires in the shielded power cords. Do this for all lamps and other electric appliances located near your bed as well as any metal floor lamps near your easy chair. Contact Oram Miller, BBEI at 310.720.7686, or info@createhealthyhomes.com, for details.

A fourth way is to purchase special grounded and shielded extension cords (not available in stores) for portable fans and heaters that need to be kept on in your bedroom through the night. Do not run a regular extension cord to these appliances, because they will increase your electric field exposure while you sleep. You can purchase these shielded extension cords from Less EMF. They have 20-foot shielded and grounded extension cords with a 3-pronged plug at one end, and 3 receptacles at the other end, enabling you to plug in 3 separate electrical items. The cost is about \$40 per extension cord. Contact 518-432-1550, 888-537-7363 or www.lessemf.com.

The best way to protect yourself from harmful electric field exposure at night is to turn off the circuit breaker(s) that power your bedroom and adjacent rooms, including those rooms above and below your bedroom. Remember the goal is to create a sphere of reduced electric field exposure levels within ten to fifteen feet around your bed at night in all directions, even above and below you, and on the other side of the walls by your bed.

You must make sure, however, that any hard-wired smoke detectors in the ceiling of your bedroom or hallway are not on one of the circuits you need to turn off. If so, do not turn this circuit off. Contact Oram Miller for how to handle this situation.

Also make sure your refrigerator, deep freeze, furnace and any other 120 Volt critical appliances that need to be on at night are still operational. This also includes your security system, a water softener timer, electric water heater exhaust fan (if you have one), a radon fan, and a sump pump. If any essential appliances are not operational when you shut off any of the circuit(s) to your bedroom and adjacent rooms, do not shut these circuits off at night before you consult me or a local Building Biologist.

The ideal solution is to have a healthy home evaluation conducted by a Building Biologist to find and reduce levels of electric and magnetic field exposure. This provides the healthiest reduction of electric (and magnetic) field levels, particularly in sleeping areas. The evaluation takes a few hours but is worth having, as we are generally able to reduce your home's levels of electric field exposure in most cases down to 100 millivolts or less in sleeping areas by identifying all the circuits in proximity to each bed. This allows you to sleep as deeply as you would if you were camping outdoors, but you are still in the comfort of your own bed.

We also assess areas you occupy during the day, such as eating and sitting areas, children's play areas, and home computer work stations (see below) to keep your exposure to this harmful influence as low as possible.

We have found, on the other hand, that if clients try to do this for themselves, in some cases they do not know about the presence of circuits hidden within the floor or wall near their bed that can still produce unhealthy electric field exposure while they sleep. This is because these circuits may run from the breaker panel to provide power to other rooms in the house, far removed from their bedroom, but they run in the floor or wall right under their bed, hidden from view, within the six to eight foot bubble around your body that needs to be electric field-free. (Plus they may disable their smoke alarm system). You may think you are reducing your electric field exposure to safe levels by shutting off the power to certain rooms, but in many cases the levels of electric fields are still in the harmful range. This harmful influence could be reduced even further, however, through a professional evaluation by Oram

or a local building biologist.

For these reasons we cannot emphasize strongly enough how important it is to have a professional evaluation of EMF levels in your home and office to properly insure the lowest levels of this important health risk and to provide the safest environment possible. Many health problems clear up when you do.

Contact Oram Miller, BBEI if you live in southern California to have this evaluation conducted personally onsite. If you are outside this area, you can go to www.buildingbiology.net and click on "Find an Expert" to see if a Building Biologist is located near you. If not, Oram can assist you in doing this long distance over the telephone. I do consultations for clients nationwide by phone, fax and email. Call 310.720.7686 to set up an appointment.

Read "Articles on EMFs" on my website, www.createhealthyhomes.com, to learn more about why reducing exposure to electric, magnetic and radio frequency fields is so important to your health.

Reduce Your Exposure to Harmful Magnetic Fields in Your Home by Doing the Following:

Besides protecting yourself from harmful electric field exposure, you also need to keep a safe distance from sources of harmful magnetic field exposure, particularly while you sleep.

Electro-magnetic fields, as they are called, which come from AC electric current, are different than geo-magnetic fields, which come from the earth and from earth magnets. Geomagnetic fields are healthy and much weaker than electro-magnetic fields. Electro-magnetic fields, on the other hand, are unhealthy for people, according to European research, at levels above 1-2 milliGauss during the day, and at levels above 0.2-0.3 milliGauss at night.

These standards are stringent and are adhered to by the Building Biology profession in our evaluations and recommendations.

Exposure to harmful magnetic field exposure has been linked, according to European research, to increased risk of cancer and other serious health problems, including immune system dysfunction, chronic fatigue, allergies, and depression.

Therefore do as much as possible to reduce exposure to magnetic fields, especially while you sleep. Ways to accomplish this include:

Keep electronic appliances that are “always-on” (such as an electric clock radio) away from the head of your bed. The transformer in a digital clock radio (which steps 120 Volts AC current down to low voltage DC to run the radio and digital clock) is located inside the plastic case and has a very strong but concentrated magnetic field, extending up to a foot or more. An electric clock with a motor in it has an even larger magnetic field, extending three feet or more, encompassing your head on the pillow. Get rid of any motor-driven clocks. Move any digital electric clock radios with an LED digital readout several feet away from your head to keep this magnetic field away from you while you sleep. Better yet, eliminate the problem altogether and get a battery-operated alarm clock, which you will need anyway if you turn off the circuits to your bedroom and adjacent rooms to reduce electric field exposure at night.

Locate all beds away from a wall that has a refrigerator or deep freeze on the other side. Also do not locate a child’s bed on the other side of the wall from a home entertainment center if you stay up watching TV in one room while your child is asleep in the other. Their head will be in the large magnetic field exposure extending several feet out the back of any older-style cathode ray tube television set, right through the wall (newer flat screen LCD or LED television sets are not as harmful and have a much smaller magnetic field, extending less than one foot).

The same goes for a fluorescent light in the ceiling of a room beneath your child’s bedroom. Do not turn the fluorescent light on while the child is asleep in the room right above it because the magnetic ballast in the lamp fixture produces a large magnetic field, extending two to three feet up into the bedroom above it.

Likewise do not sleep with your bed right against the wall where the electric meter is mounted outside or where the electric wires come to the house from the utility pole. Keep your bed at least six feet or more away from this source of strong magnetic field exposure.

A professional healthy home evaluation by a Building Biologist can help locate these and other hidden sources of magnetic field exposure in your home and office and provide you with ways to reduce your health risk. This includes finding and reducing high magnetic field levels caused by such hidden sources as electric current carried on the water pipes, and also by what are known as “wiring errors” in the branch circuits in the walls. These sources can be found and corrected with the help of experienced electricians and plumbers that we work with.

Make Your Computer Work Station at Home or at the Office More Safe by Doing the Following:

Move all electric power cords that carry 120 Volts as far away from your feet as possible,

including surge protectors. This reduces electric field exposure. Surge protectors also usually have several transformers plugged into them, which are considered “point sources” of magnetic field exposure that extend up to two to three feet. This is another reason to move the surge protector away from your feet. Also move any in-line transformers in power cords as far away from your feet as possible.

Purchase a flat screen computer monitor if possible. If you own an older model cathode ray tube monitor, push it back as far on the desk as possible. Older monitors are really a VDT (Video Display Terminal) containing a CRT (Cathode Ray Tube), and are nothing more than a special television set. Would you sit two feet in front of your TV for several hours at a time? Push your monitor back and find the setting on the screen to increase the pixel size. This way you can increase the size of the icons and font on your screen to see them from farther away. You can purchase radiation screens and anti-static shields from www.lessemf.com and www.safelivingtechnologies.com (remember you need to ground the shield).

Move the CPU (Central Processing Unit), or computer tower, away from your knees if it is sitting under (or in) the desk. Move it outside the desk as far away from your legs as possible because it contains a fan motor, hard drive motor, and a transformer, all point sources of magnetic fields. Once you move the computer, purchase extension cables from Radio Shack or Best Buy if your existing cables do not reach between the computer and your keyboard, monitor and peripheral equipment, such as a printer.

You can further reduce electric field levels at your computer workstation by replacing the electric power cords of most computers, monitors and some printers with a shielded AC power cord available at Radio Shack for \$9. If the existing power cord pulls out from the back of your computer, monitor or printer, take it to Radio Shack and show it to the clerk. Ask for AC Shielded Power Cord, Part # 61-206. The word “shielded” will be embossed on the plastic cord. Use it instead of the cord that came with the computer. (This is not possible with most power cords that plug into an inline transformer, such as with a laptop computer).

Do not use your laptop computer right on your lap while you are using the AC power adapter. This can cause very high electric field level exposure, especially when the computer is connected to a printer (when the printer is also plugged in). If you do keep the laptop plugged in, place it on a table rather than on your lap. If you do use it on your lap, unplug it and run it on the battery and have the printer disconnected. When you print, take the computer off your lap, reconnect it to your printer (power down first if the connection is not USB) and set the laptop somewhere else.

Protect Yourself from Harmful Radio Frequency Field Exposure from Cell Phones,

Wi-Fi Routers and Cordless Telephones by Doing the Following:

Read “Cell Phone and Radio Frequency Risks”

(www.createhealthyhomes.com/cellphone_risks.php) on my website to see articles from European newspapers about the latest research on the harm of these technologies on human health, and links to sites with products you can purchase to protect yourself.

Electro-magnetic fields in the higher frequency range produced by wireless communications have been proven to be harmful to the bioelectrical activity of the human nervous system because they emit pulsed digital radio frequencies. Cell phones, wireless Internet (Wi-Fi) routers and cordless telephones produce these harmful fields when they are transmitting, even when they are on stand-by. See an eye-opening series of articles by European doctors and researchers on these dangers at the website for the Association for Comprehensive Neurotherapy, http://www.latitudes.org/articles/electrical_sensitivity_articles.html

These researchers report an alarming increase in serious health problems, particularly in children. They worry about an epidemic of dementia and Alzheimer’s Disease in the current group of teenagers worldwide when they reach middle age.

You will also find a host of important articles about the health hazards of cell phone use on Dr. Mercola’s website. Dr. Mercola comments on this recent finding and gives additional information on cell phone hazards and how to protect yourself, including the use of an air tube headset.

Furthermore, health care practitioners here and in Europe are now reporting that patients are complaining of health problems they have never had before, including anxiety, insomnia, depression, growing unresponsiveness to medications, stroke, and high blood pressure. These symptoms clear up when people remove Wi-Fi routers and reduce the use of wireless personal digital assistants (PDAs). Entire companies are seeing a drastic reduction in the health of their employees after the entire office building is set up with “Wi-Fi;” that is, when wireless Internet routers are installed throughout the building. Hospital administrators are reporting an unusual upsurge of ER admissions of 20 year olds with sudden onset of stroke, thought to be associated with wireless communication use.

The problem with all wireless technologies is that the harmful wave is not the carrier wave in the microwave range of 0.8 to 5.8 Gigahertz (GHz). The real problem is the low-frequency, information-carrying radio wave way down at 219-230 cycles per second, or Hertz (Hz), not up at 0.8 to 1.9 billion cycles per second, or GigaHertz (GHz), which is the frequency of the carrier wave for cell phone companies in the US, nor the 1.9, 2.4 or 5.8 GHz frequencies of cordless telephones. The low-frequency wave carries the actual voice data but it does not transmit very far. That is why it has to be piggy-backed onto the much faster carrier radio

wave up in the Gigahertz microwave range, which carries the voice data for miles from your cell phone to the cell tower and back again or from the cordless telephone base unit within your house to the handset and back again. Likewise, a Wi-Fi router sends Internet data at 219-230 Hz from the router to your laptop and back again on a carrier wave in the 2.4 GHz range.

It is the low-frequency information-carrying radio wave that is causing most of the health problems and causes most concern among researchers. This is because unlike the carrier wave, which has a safe exposure limit called the “Specific Absorption Rate” or “SAR” by the cell phone industry, the low-frequency information-carrying radio wave has no safe exposure level and causes harm to human tissues and cells down to almost zero exposure levels. Plus, its harmful effects are cumulative over the decades. These include damage to the blood brain barrier, formation of harmful micronuclei within cells, which are markers for cancer, and damage to cellular calcium metabolism, which is the way cells talk to each other. The question I ask my clients to ask themselves is, “How many cigarettes have I smoked today?” See www.createhealthyhomes.com/cellphone_risks.php on my website for more details.

In summary, don’t rely on industry or government to fully protect you against the proven dangers of wireless technologies. The research connecting use of wireless technologies and ill health is there. It is just not published in the American media. The Building Biology profession bases its recommended safe exposure levels and safe practices on the standards adopted by our counterparts in Europe, where the standards are much more stringent than those allowed by the FCC or EPA in this country. Besides the European research cited above, consult The EMR Network for further information at <http://www.emrnetwork.org>; 866-213-1202, pin 7802.

Avoid holding a cell phone right next to your head at all costs while making a call. Use a headset with a plastic air tube in the last few inches. You can purchase these air tube earphones from several sources, including www.lessemf.com and www.mercola.com .

In general, whenever you have a choice, use a corded telephone on a landline rather than your cell phone. By all means keep your landline at home. Don’t give it up to save money. You will be penny wise and pound foolish, as the research is showing that you could develop cancer, memory loss and/or Alzheimer’s Disease over ten to twenty years. When someone calls you at home on your cell phone, get the number and ask if you can call them back, and then do so from your corded landline.

To know why this is so important, read the articles, based on European research, on the dangers of cell phone use mentioned above at http://www.createhealthyhomes.com/cellphone_risks.php .

Use the speakerphone, as this keeps the phone away from you. Also text more, as the EMF exposure only occurs after you compose a message and hit “send.”

The Bluetooth headset may have a significantly reduced power output in terms of its microwave carrier frequency, because it only transmits a few yards within a room, letting the cell phone to which it is wirelessly connected somewhere else in the room transmit the miles to the nearest cell tower. Unfortunately, however, it still has the low-frequency information-carrying radio wave that causes so much harm. Avoid use of the Bluetooth headset.

Limit cell phone use in your car, since the metal cage of the passenger compartment, called a “resonant chamber,” makes the cell tower tell the cell phone to boost its power output to stay connected to the tower at the same level as when you used the cell phone outside the car. Plus the microwave radiation put out by the cell phone bounces off the inside of the passenger compartment and concentrates inside, affecting everyone like second-hand smoke.

To avoid this, purchase a car rooftop antenna from Alternative Wireless at www.alternativewireless.com/cellular-antennas; 888-399-4932. These attach to a metal car roof with a magnet and can be put inside the car when you go shopping. Most importantly, you don’t have the harmful microwave radiation inside the car from the cell phone’s antenna when you are on a call because the cell phone’s onboard antenna is disabled when you plug in the cord to the rooftop antenna. You are also now seated below the “ground plane” of the rooftop antenna, which is mounted above you outside the passenger compartment of the car. The microwave frequencies reflect off the roof of the car as they broadcast and don’t get inside the car where you and your passengers are sitting.

You will have to have a cell phone with an external antenna jack. Most cell phones on the market today do not have this, however some models are still made with this jack. You will need to ask the clerk at the cell phone retailer for one if you talk on the phone a great deal while in your car.

Have younger children avoid cell phone use altogether, and try to limit the use of cell phones by teenagers (good luck!! — at least buy them an air tube headset). Read the articles noted above to discover why cell phone use impairs children’s brain development. See how researchers in Sweden have found that the risk of brain cancer is now fivefold higher when children use cell phones. Young people in Britain in their early 20s who have used cell phones heavily for ten or more years now have enough cognitive impairment and memory loss they cannot hold a job.

Men: If you carry your cell phone on your belt or in your pants pocket, definitely invest in one of the shields at www.lessemf.com. Even when in standby mode, your cell phone is sending a homing signal to the nearest cell tower every one minute or so and your internal organs are continuously exposed to this microwave radiation. This is particularly worse when a call is in progress.

Women: If you are pregnant, you should be nowhere near a cell phone. When carrying an infant in your arms, avoid use of a cell phone for your sake and for the sake of your growing child. Avoid exposing them to “second-hand smoke.”

Be sure not to encase your phone in a protective pouch, because this will encase the antenna. When you then make a call with your cell phone in a protective pouch covering the antenna, the cell tower detects a weaker signal from the phone and actually instructs the phone to increase its power output to stay well connected. This means that the strategy you used to protect yourself from harm is actually having the reverse effect, by making the phone put out even more radiation.

Regarding cell phone EMF reduction chips and discs that you affix to your phone, the manufacturers of these products claim that they protect you from harm. While this may be true on a subtle energy level, these devices do nothing to the field strength itself. We are cautious about their effectiveness and strongly advise you not to use them as your sole means of protection. Don't stick one of these chips on your phone and then continue to use it next to your head. Dr. George Carlo, who initially endorsed these products, eventually found that people actually ended up with a relapse of their symptoms after six to eighteen months of use. We recommend that people avoid and reduce use of cell phones in the first place and keep them at arm's length away from your head and body, following the steps recommended above.

Living in proximity to cell phone towers is also a problem (cell phones are covered later in this section). Studies in France are showing reports of ill health in people living near cell towers (see the latitudes.org reference on the next page), and cell towers are actually being decommissioned in Spain. The cell phone industry in this country, on the other hand, has forced the FCC to disallow citizen groups from bringing up health concerns as a reason to oppose construction of cell phone towers near residential neighborhoods, making it harder to prevent their installation.

In the home, it is particularly imperative that you keep wireless Internet routers out of your bedroom and rooms where you spend much time during the day and evening. We recommend you avoid their use altogether and have all your computers, including laptops, hardwired by Ethernet cables and Category 5-e cable in your walls to your Internet router. Then the wireless function of your router is disabled and functions solely as a hardwired local

area network (LAN). Oram can discuss with you how to set this up.

The deployment of wireless Internet (wi-fi) routers is a serious and growing problem, because the technology is thought to be harmless and is considered to be the wave of the future. It is popping up everywhere, even in elementary schools and hospitals. Municipalities want to broadcast it from light poles throughout an entire city so that every neighborhood is blanketed and the signal comes into every home, through the walls. The signal is scrambled and a decoder, provided by the city, must be used for a fee.

The problem is this technology bothers electrically-sensitive people, who will not be able to get away from it. Furthermore, it is a cause of ill health for many others who do not yet know the connection of exposure to these wireless technologies to their vague, growing symptoms. The wireless industry cannot prove that wireless Internet use is safe, and citizens are beginning to take a long, hard look at the effects that city-wide deployment of Wi-Fi would have on everyone's health. Many school systems in England and Austria have taken Wi-Fi out of their school buildings ("DANGER ON THE AIRWAVES: IS THE WI-FI REVOLUTION A HEALTH TIME BOMB?" news.independent.co.uk/health/article2472140.ece). According to the Canadian TV network CTV, Lakehead University in Thunder Bay, Ontario, has "recently banned wireless Internet from most of its campus because the health impact of Wi-Fi technology is not yet known."

(http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/20060329/electricity_allergies_060329/20060329/)

In addition, when these points are brought to the attention of city planners and the public, some cities have taken action to protect their citizens. The city of Edina, Minnesota has recently put a stop to this movement by passing a resolution banning Wi-Fi from being deployed citywide because of concerns of residents. Other cities want to deploy this technology, yet many in America are unaware of the health threat. It is akin to tobacco and asbestos, which were harmful yet decades passed before industry responded. It took public pressure to bring the dangers to light. See

www.createhealthyhomes.com/cellphone_risks.php.

The solution to citywide Wi-Fi deployment is that individuals can install a wireless router in their home or business if they choose, though we do not recommend it. We certainly do not recommend this technology be deployed throughout an entire city. Use hardwired connections instead.

Unfortunately, cordless telephones also emit the low-frequency information-carrying radio wave that cell phones do. For that reason, researchers are very concerned about the long-term health effects of cordless phone use because of the hours that people spend using them, since there is no restriction in terms of minutes compared to airtime with cell phones.

(Granted cell phones have long-distance service at no extra charge while many landline contracts have minute-by-minute charges for long-distance service.)

The solution is to swap out your cordless telephone with a corded one and set up unlimited long distance service on your landline so you are not tempted to pick up your cell phone to make an outgoing long distance call while at home.

Cordless telephones have another problem. That is, the base units of all newer models are "always on." That means they continuously emit harmful pulsed digital frequencies. Do not have these base units in your bedroom or where you spend most of your time during the day. Better yet, avoid their use altogether and switch back to a good old-fashioned corded telephone with a long cord pick it up and take it with you as you move about your room, if you need to be mobile.

If you have the base unit on your desk and then place or answer a call, you would then be exposed to the radiation from both the cordless telephone handset and from the base unit, sitting only a couple of feet away from you when you are talking. Again, use a corded telephone, especially by your bed (which, by the way, is low voltage and emits no harmful electric or magnetic fields).

In general, the higher the frequency of a cordless telephone, the higher the output of harmful pulsed digital radio frequencies and the deeper the penetration of harmful effects into the brain. Stay with 900 MHz analog cordless telephones if you still have one and absolutely need to use a cordless phone at home. Better yet, dust off your old corded telephone and connect it to the wall telephone jack with a long cord if you need to walk around while talking on a call.

Concerning compact fluorescent lamps (CFLs), while they are good for the environment, Building Biology recommends you avoid their use. This is because they contain an electronic ballast, which emits high frequencies into occupied rooms along the entire length of the branch circuit that they are screwed into. Electronic ballasts have passing 60 Hz in and can emit up to 25,000 - 30,000 Hz on the wires the leave the ballast. These higher frequencies broadcast off the circuits in the ceiling and wall and are not well tolerated by electrically sensitive individuals. We consider them to be a health challenge to all people.

This is in contrast to older magnetic fluorescent lamp ballasts, which take 60 Hz in and emit only 60 Hz out. These are safe from a radio frequency standpoint (although they do emit a localized magnetic field up to one to three feet out from the lamp fixture).

Likewise halogen lamps also emit a radio frequency as well as a magnetic field.

CFLs also emit a magnetic field because, like all fluorescent and halogen lamps, they run on

low voltage DC current that needs to be stepped down from 120 Volt AC current by a transformer. The transformer causes the magnetic field.

In general, stay with incandescent bulbs, and choose full spectrum bulbs whenever possible. Watch for LEDs (Light Emitting Diodes) that will have the same or better energy-efficiency as compact fluorescent lamps. Ask for line-voltage LEDs that operate directly from 120 Volts into the light socket without emitting radio frequencies, because a ballast (transformer) is not necessary. Like CFLs, they will use less electricity than incandescent bulbs but they will be safer, and unlike CFLs, they contain no mercury, which is released when a CFL falls on the floor and breaks.

Consultations are available from Oram Miller, BBEI for healthy home EMF evaluations conducted both personally onsite as well as long distance over the telephone. Contact him at 310.720.7686 or at info@createhealthyhomes.com. You can also go to his website, www.createhealthyhomes.com for more information.

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The Twenty-Five Principles of Bau-Biologie

Building Biology, translated from the word “Bau-biologie,” was pioneered in Germany over thirty years ago and is taught in the U.S.A. by the International Institute for Bau-biologie and Ecology (IBE), Clearwater, Florida (727-461-4371; www.buildingbiology.net). The principles upon which the teachings of Building Biology are based are as follows:

1. A building site shall be geologically undisturbed.
2. Residential homes are best located away from industrial centers and main traffic routes.
3. Housing shall be developed in a decentralized and loose manner interlaced with sufficient green space.

4. Housing and developments shall be personalized, in harmony with nature, fit for human habitation and family oriented.
5. Natural and unadulterated building materials shall be used.
6. Walls, floors and ceilings shall be diffusible and hygroscopic.
7. Indoor air humidity shall be regulated naturally.
8. Air pollutants need to be filtered and neutralized.
9. An appropriate balance of thermal insulation and heat retention is needed.
10. The air and surface temperatures of a given room need to be optimized.
11. A heating system shall feature radiant heat using as much (passive) solar heat as possible.
12. The total moisture content of a new building shall be low and dry out quickly.
13. A building shall have a pleasant or neutral smell. No toxins shall outgas.
14. Light, lighting and color shall be in accord with natural conditions.
15. Protective measures against noise pollution as well as infrasonic and ultrasonic vibrations need to be human oriented.
16. Only building materials with little or preferably no radioactivity shall be used.
17. The natural balance of atmospheric electricity and ion concentration shall be maintained.
18. The Earth's natural magnetic field shall not be altered or distorted.
19. Man-made electromagnetic radiation shall be eliminated (or reduced as much as possible).
20. Cosmic and terrestrial radiation is essential and shall be interfered with as little as possible.
21. Interior and furniture design shall be based on physiological findings.

22. Harmonic measures, proportions and shapes need to be taken into consideration.
23. The production, installation and disposal of building materials shall not contribute to environmental pollution and high energy costs.
24. Building activities shall not contribute to the exploitation of non-renewable and rare resources.
25. Building activities shall not cause a rise in social and medical costs.

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