

EMF Dangers and EMF Effects on Health

EMFs (electromagnetic fields) can penetrate buildings and the human body. Today, everyone is exposed to man-made, artificial, EMFs from electrical power lines, radio and TV broadcast towers, cell phones and cell towers, tablets, baby monitors, surveillance devices, Wi-Fi routers, utility meters, and even satellites. These sources bombard us with both low frequency and high frequency radio waves.



Photo by [JeepersMedia](#) 

We are increasingly concerned about the myriad of EMFs we are exposed to every day. Radio frequency radiation produces biological effects at very low intensity levels. Damage does not require ionizing radiation to break molecular bonds. Significant biological effects occur at exposure levels much lower than current public safety levels.

Epigenetic changes that alter gene activation and expression are of increasing concern. Of particular interest is the effects EMFs have on young people, including the fetus, infant and young child.

Children exposed to electromagnetic radiation exhibit functional changes similar to autism and attention deficit hyperactivity disorder. Adolescents experience problems with memory, learning, attention, concentration, behavior problems and sleep quality.

What is Electromagnetic Radiation?

Electromagnetic fields (EMFs) are caused by the movement of electrons. Even within atoms, electrons moving in a circular fashion create static, non-changing, magnetic fields. This is why certain substances can be magnetized.

But, most man-made EMFs are generated by alternating currents moving in wires or antennas. This creates changing electric and magnetic fields that radiate out at the speed of light. Electromagnetic radiation covers a broad range of frequencies from around 10 Hz (10 oscillations per second) to 300 GHz (300 billion oscillations per second).

Absorption of electromagnetic radiation depends on several factors. These factors include the strength of the radiation, the distance one is from the

source or radiation, as well as one's orientation to the radiation. The water and mineral content of your body also plays a role.

Children are more susceptible to damage from radiation than adults. The tissue composition and anatomy of a child differs from that of an adult. A child's head, bone marrow and eyes absorb more energy than those of an adult. And, children's bodies are still developing and are, thus, more sensitive to long term effects.

Typical Man-made Causes of Electromagnetic Fields (EMF)

Man-made electromagnetic fields result from the movement of electrons, electrical currents, in wires and antennas. It is almost impossible to avoid exposure to these fields.

- Electrical wiring and transmission lines
- Radio or television broadcast antennas
- Radar installations
- Satellites
- Medical devices such as magnetic resonance imaging (MRI)
- Household appliances such as microwave ovens
- Cordless telephones
- Cell phones and cell towers
- Television and computer screens
- Wireless local area networks and WiFi
- Smart electric and gas meters

EMF Dangers in Animals

Clinical studies of EMFs are typically done on animals. After all, deliberately exposing humans to EMFs is not exactly ethical.

One study exposed pregnant rats to 2.4 GHz Wi-Fi EMFs showed that the Wi-Fi exposed offspring impaired spatial learning and motor function. The study also found that exercise could help reduce the deficiencies of both cognitive and motor function.

Other mice or rat studies have shown the following effects of cell tower EMF radiation:

- Change in immunological functions
- Decrease in reproductive function (After five generations of exposure the mice were not able to produce offspring.)
- Increases in neurodegenerative diseases
- Increase in serum testosterone levels
- Increase in the permeability of the blood-brain barrier
- Increased DNA damage in cells
- Increase in DNA strand breaks in brain cells
- Decreased DNA repair
- Animals become more sensitive to radiation after long-term exposure

A study of cell tower electromagnetic radiation in India looked at the effects cell tower electromagnetic radiation had on birds. The researchers found that under the influence of cell tower radiation they became *disoriented* and flew in all directions. Also animals living near the towers had *more still births*, *spontaneous abortions*, *birth deformities*, and experience more *behavioral problems* with a general *decline in overall health*. The authors of the study indicate that because the cell phone industry do not admit any dangers, it is "becoming another cigarette industry."

Symptoms of Electromagnetic Field Dangers to Humans

While we do not experiment on humans in a clinical setting, the environment is causing some humans to be exposed to higher levels of electromagnetic radiation. A number of studies have been done to compare the health of people living near cell phone towers with the health of those living far from cell phone towers. Some scientific findings about people living close to cell towers include:

- Significant increases for all cancers and malignant melanoma in both men and women
- Adult leukemia and lymphoma clusters
- Elevated rates of mental illness
- Higher rates of brain tumors
- Sleep disorders
- Decreased concentration
- Anxiety
- Elevated blood pressure
- Headaches
- Memory impairment
- Increased white cell counts
- Decreased lung function in children
- Motor, memory, and learning impairment in children

In addition to studying the effects of cell phone towers, a number of studies were conducted when digital TV was introduced. Three German physicians wrote to the President of the United States warning about the results of digital broadcasting in Germany. They indicated once digital broadcasts were begun there was a noticeable increase of headaches, sleep problems, fuzzy thinking, chest tightness, shortness of breath, irritability, nervousness, depression, anxiety, burning skin, and weight gain.

When people moved away from the area into nearby valleys where the radiation did not penetrate they symptoms quickly went away.

Another study showed that children born to mothers who used cell phones have more behavioral problems than children born to mothers who did not use cell phones during pregnancy. Children of cell phone using mothers had 25% more **emotional problems**, 49% more **conduct problems** and 35% more **hyperactivity**.

Eight out of ten epidemiological studies indicate that living within 500 meters (nearly a third of a mile) of a cell tower increased risks of neurobehavioral symptoms or cancer.

Wireless wake-up call | Jeromy Johnson | TEDxBerkeley

A Silicon-valley engineer turned technology health advocate, Jeromy Johnson discusses our attachment to technology and the health hazards such an addiction may hold.

Legal Remedies Regarding Utility Transmission Lines

A number of lawsuits have been brought to halt construction of transmission lines (as well as cell towers) or to seek monetary damages for loss of property value when utility transmission lines and their effect are placed close to an owner's property.

Transmission lines are high voltage lines (often from 230kV to 12kV) from the generating plants to local neighborhoods where the voltage is stepped down and delivered to homes.

The basic legal theories used in most lawsuits regarding transmission line include:

- **Trespass:** The idea is that electromagnetic fields constitute an "intrusion that invades the possessor's protected interest."
- **Nuisance:** The claim is that there is unreasonable and substantial interference caused by the EMFs that could cause more than trivial harm. This could be either a public or private nuisance.
- **Strict Liability:** This requires that electricity transmission lines be considered a defective product that causes harm or presents a high degree of risk.
- **Personal Injury:** Here a legal causation must be established.
- **Damages:** The claim here is that transmission lines cause emotional distress from fear of cancer or other injuries, on an increased risk of harm.

While some people have won cases against utility companies, most people struggle in legal battles. The utilities have nearly unlimited resources to defend themselves and the scientific evidence for harm is not readily demonstrable.

It will take time for the scientific community to isolate high voltage EMFs as the source of injury on humans.

Conclusions You Can Use

The evidence is accumulating that exposure to electromagnetic radiation does cause harm to human beings. This exposure is, unfortunately, increasing as more wireless devices proliferate in our society.

While most people cannot eliminate such exposure from their lives, many people can take steps to limit such exposure. Some steps you can take to reduce exposure include:

- Turn off wireless devices (cell phones, routers, ect.) during sleeping hours
- If you have a “landline” phone, forward your cell phone to your landline while you are home and turn off your cell phone.
- Children and pregnant women should avoid using cell phones
- Use “old-fashioned” flip-phones that emit less electromagnetic radiation than smart phones
- Carry cell phones in a purse or backpack as far from your body as possible
- Use tablets in “airplane mode” whenever possible and shut them off when not in use
- Use cell and mobile phones in “speaker” mode to avoid close contact with the phone’s radiation
- Connect your computer to your modem with an Ethernet cable and turn off Wi-Fi
- When looking for a new home, try to be at least a third of a mile from the nearest cell tower, broadcast antenna or high tension transmission lines
- Check at school to try to reduce wireless devices in an around the classroom

In short, try to limit your exposure to artificial, man-made electromagnetic radiation.

References

- [Microwave frequency electromagnetic fields \(EMFs\) produce widespread neuropsychiatric effects including depression](#) as published in the *Journal of Chemical Neuroanatomy*
 - [Physical activity as an option to reduce adverse effect of EMF exposure during pregnancy](#) as published in *International Journal of Developmental Neuroscience*
 - [Causes of Action for EMF Harm](#) as published in *Fordham Environmental Law Review*
 - [Cell Phone Towers as Visual Pollution](#) as published in *Notre Dame Journal of Law, Ethics & Public Policy*
 - [Biological effects from exposure to electromagnetic radiation emitted by cell tower base stations and other antenna arrays](#) as published in *Environmental Reviews*
 - [EFFECT OF MOBILE TOWER RADIATION ON BIRDS IN BIJAPUR DISTRICT, CHHATTISGARH](#) as published in *WORLD JOURNAL OF PHARMACY AND PHARMACEUTICAL SCIENCES*
 - [Electromagnetic Fields, Pulsed Radiofrequency Radiation, and Epigenetics: How Wireless Technologies May Affect Childhood Development](#) as published in *Child Development*
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[Do You Have a Magnesium Deficiency?](#)

Magnesium plays important roles in the body. It is needed for enzyme activity by over 300 different biological processes. All enzymes associated with ATP require Magnesium. And, you may know that adenosine triphosphate (ATP) provides energy to all cells.

Depending on just how much magnesium in the blood is considered normal, anywhere from 4.8% to 47% of all patients in hospitals are deficient in magnesium. Up to 65% of patients in intensive care are deficient, and low levels of Magnesium are associated with a higher mortality rate.

How Much Magnesium is Required?

The daily dietary allowance for magnesium set by the National Academy of Science and the Institute of Medicine is 6 mg per kg of body mass. On average, this means about 400-420 mg per day for men and 310-320 mg per day for women.

It is estimated that **between 50% and 85% of those living in the United States fail to reach these levels of magnesium intake.** A major reason for this is the high consumption of refined and processed foods that are deficient in magnesium. One study, for example, showed that **refining and processing** wheat to white flour, rice to polished rice, and corn to starch **removes from 82% to 97% of the magnesium.**

What Are the Symptoms of Magnesium Deficiency?

Because magnesium is used in all energy producing systems as well as other systems, the symptoms of magnesium deficiency are widespread and varied. Here are some conditions to look for:

- Hypertension
- Insomnia
- Generalized weakness
- Apathy
- Depression
- Muscle cramps
- Nervousness
- Arteriosclerotic vascular disease
- Atrial or ventricular arrhythmias
- Atrial tachycardia
- Atrial fibrillation
- Exercise-induced chest pain
- Osteoporosis
- Neuromuscular irritability
- Tremor
- Convulsions
- Anorexia

- Delirium
- Hallucinations
- Psychosis
- Vomiting
- Sudden death

Magnesium Deficiency: 8 Warning Signs

According to Norman Shealy, MD, Ph.D, an American neurosurgeon and a pioneer in pain medicine, **“Every known illness is associated with a magnesium deficiency and it’s the missing cure to many diseases.”** Not only does magnesium help regulate calcium, potassium and sodium, but it’s essential for cellular health and a critical component of over 300 biochemical functions in the body.

Even glutathione, your body’s most powerful antioxidant that has even been called “the master antioxidant,” requires magnesium for its synthesis. Unfortunately, most people are not aware of this, and millions suffer daily from magnesium deficiency without even knowing it.

A major problem with many of these milder symptoms is that people often think that their condition is “normal.” They do not ask their doctor to test their magnesium levels so they do not take corrective action.

What Foods Contain Magnesium?

A hundred years ago, most people drank water just as it came from a water well. Water from a well contains minerals from the soil that our bodies absorbed. Today we call this “hard” water. Now we typically remove these minerals from our water, or use a water “softener” to get more pure water. So, we have to look to food sources for our minerals, including magnesium.

Magnesium is plentiful in natural foods. Some good sources of magnesium include:



Photo by [creating in the dark](#) 

- Dark leafy green vegetables (as a component of chlorophyll)
- Coca derivatives, especially dark chocolate
- Nuts (almonds, pecans, cashews, Brazil nuts) and seeds
- Whole grains (like wheat with its bran and germ)
- Legumes
- Soy products like soy flour and tofu
- Seafoods (fatty fish like salmon, mackerel and halibut)
- Meats

Of course, these sources of magnesium need to be grown and cultivated from soils that have sufficient magnesium so the plants can draw magnesium into their cells. The website [Ag Professional](#) shows the concentrations of magnesium in Kansas soils ranges from 38 centimoles per kg of soil down to 4 centimoles per kg. Since Kansas grows a great deal of wheat, corn, soybeans, grain sorghum, and hay, both people and animals consuming their produce may not be getting the expected amount of magnesium.

This is of particular concern where farmers may only fertilize their crops with nitrogen, phosphorus, and potassium (NPK). These elements make the plants grow strong roots with tall and strong stalks, and plentiful produce. But, on low magnesium soils, the farmer should add magnesium to the soil (with products such as dolomitic limestone, Epsom salts, potassium magnesium sulfate).

Unfortunately, we don't know the condition of the soil used to grow food products we buy in the store.

How We Deplete Our Bodies of Magnesium

Magnesium is absorbed into the blood stream along the entire intestinal tract. Ionic magnesium is most efficiently absorbed in the small intestine.

But some substances can bind to the magnesium ion, preventing it from being absorbed. High dietary fiber, phytate foods (like bran and seeds), high oxalate foods (like Spinach bran and rhubarb), and high phosphate foods (like dairy, fish and meat) can reduce the absorption of magnesium.

Your kidneys are the primary exit point for magnesium. The kidneys control the blood magnesium level within a narrow range. Kidneys can remove excess magnesium and conserve magnesium when you are depleted. Diuretic drugs that increase urine flow can prevent re-absorption in the kidneys and cause unwanted magnesium loss. Lipid-lowering drugs also cause excess magnesium loss.

Also, alcohol, caffeine and sugar accelerate magnesium loss. Within minutes of consuming alcohol magnesium excretion can increase above normal by as much as 260%.

Organic Source of Magnesium and Other Minerals

Whole leaf wheat grass powder when grown, processed and stored under optimal conditions is considered one of the most potent leafy green vegetables

available. Consider organic wheat grass as a source of your daily magnesium.

References for Further Reading

- [Magnesium Deficiency: A Cause of Heterogenous Disease in Humans](#), published in the *Journal of Bone and Mineral Research*
 - [Magnesium Deficiency: Pathophysiologic and Clinical Overview](#), published in the *American Journal of Kidney Diseases*
 - [Implications of Magnesium Deficiency in Type 2 Diabetes: A Review](#), published in *Biological Trace Element Research*
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[Eating Fish May Reduce Arthritis Symptoms](#)

In a recent study, individuals with rheumatoid arthritis who consumed fish twice weekly had lower disease activity (swollen/tender joint counts along with other assessments) than those who ate fish never to <1/month.

[Nutrition Research News – ScienceDaily](#)

Managing Your Arthritis Symptoms

Arthritis comes in different forms, but a doctor can help you diagnose it. The data that follows goes over the advantages and disadvantages associated with different relief techniques available for arthritis symptoms.



Photo by [handarmdoc](#) 

When you have osteoarthritis, working out your joints is an essential step in managing your condition. Experts have found that exercise helps relieve stiffness and keeps your joints more flexible. Stretching exercises along with light weight training may also improve your endurance and help you rest more soundly, leading to less discomfort and a better quality of life.



Despite the fact that doctors have no **cure for arthritis**, there are many actions you can take to **reduce arthritis symptoms**. Be sure to talk about alternative treatments with your doctor that can give you more control over your arthritis symptoms. A feeling of empowerment can help you get the most out of your arthritis therapy.

In case you suffer from arthritis, do your best to use healthy diet plan and moderate exercise to reduce kind unnecessary weight. Excess fat puts more stress on bones and joints and causes these to wear out more quickly. Losing weight will not only reduce the stress on your back, hips and knees, but also make it easier to participate in more physical exercise.

Dr Joel Wallach talks about Youngevity Bone and Joint Pak & Arthritis

Dr Joel Wallach discusses the mighty 90 nutrients and how people can benefit from this **natural arthritis treatment**. Knees, hips, joints.

Check out [Dr. Wallach's Healthy Bone and Joint Pak](#)

Make sure you don't smoke cigarettes. Smoking has been shown to increase your danger of developing rheumatoid arthritis. Not only that, in case you do develop it, smoking has been demonstrated to worsen the joint damage. Patients who smoke most often possess more severe arthritis symptoms than those sufferers who don't smoke.

Be careful with herbal remedies you take for arthritis and be sure you speak with your physician before taking them. People believe that because herbal remedies are natural, they are healthy for you. This is not always the case. Actually certain herbal remedies can make your arthritis worse.

You cannot forecast when your arthritis symptoms will flare, so plan your own activities with this in mind. If you plan for potential arthritis problems beforehand you will not be disappointed if signs and symptoms show and you have to take a break. In case you start an activity, try to make sure you may end at any point so that if you have an arthritis flare up you can stop your activity.

Keeping an arthritis record can actually help you control your signs and symptoms. Each time your arthritis is disturbing you, write about what you do that day time in your journal. This way, you can start to get a pattern as to what is causing your own arthritis pain so you can slow down on that will activity.

It is important that you take care of your pain in the best way possible so you can function as long as possible. Do what you can before the condition

gets out of control.

Arthritis symptoms are a common “umbrella” expression that is used to refer to many types of joint pain and swelling. The above suggestions discuss the pros and cons associated with some common treatments available for people with arthritis pain. The safest approach frequently involves consulting with your physician before contemplating any of the treatments considered above.

Check out [Dr. Wallach's Healthy Bone and Joint Pak](#)