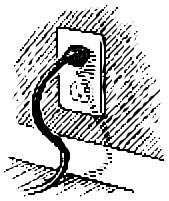
Wings of Eagles Healthy Living (WEHL)
Indoor Environmental Specialist



Magnetic Fields

Information Sheet

Scientific Background

In the course of evolution, all living organisms have adapted themselves to this very unique radiation climate prevalent on planet earth. This natural balance is being threatened now because over the last 100 years humans have been very busy adding their own versions of electromagnetic energies without giving due considerations to the biological implications.

The belief that low-level electric, magnetic and other electromagnetic fields, such as those emanating from electric home wiring systems and common appliances, have biological effects is an established scientific fact. The "only" question that remains is how great and how harmful those health effects are, especially in the long run. Since technical advancements tend to develop much faster than the scientific research proving their safety or harmfulness, the following discussion is based on the motto: *Prevention is better than a cure!*

> "To estimate more accurately the risks of leukemia in children from magnetic fields resulting from power lines, researchers pooled (combined) data from many studies. In one pooled study that combined nine well-conducted studies from several countries, including a study from the NCI, a twofold excess risk of childhood leukemia was associated with exposure to magnetic fields above 0.4 µT. In another pooled study that combined 15 studies, a similar increased risk was seen above 0.3 µT. [1]

Similar studies have been done for adult cancer and leukemia, as well as, depression, sleeping disorders, etc. Alternating magnetic fields occur whenever current is drawn. The movement of current requires a complete circuit - electricity moving from the electricity supply to the return. Something has to be "turned on" in order to let a current flow. It is worse when near high voltage transmission lines, but household appliances and wiring can also create problems. The good news is that the field strength, and therefore health impact, decreases with distance.

Discovery

*Several homes, about half of those surveyed, have elevated levels (>0.3*µT*) of magnetic fields.*

AC electric and magnetic fields occur wherever there is electricity. Most often increased AC magnetic fields come largely from unpaired internal building wiring, incorrect bonding or frayed insulation. Contrary to popular belief, power transmission lines and transformers do not generally contribute as much magnetic field as does internal wiring. Other magnetic sources include video displays, motorized clocks and other equipment, electric blankets and heaters, fluorescent lights and light dimmers, and the transformers that are inside consumer devices.

When heavy appliances such as refrigerators are located right behind the wall of an adjoining room, their AC magnetic field will pass right through that wall. Even old wiring, which is cut off from the new wiring system, may pick up electric fields by means of capacitive coupling and drag it into areas that are thought to be free of electric power, or it may have currents induced by inductive coupling from adjacent energized wiring. In a worst-case scenario, unintentional currents may travel along metal piping for water, gas or heating, causing rather strong AC magnetic fields.

Measuring: magnetic fields are measured with a Gaussmeter

Fixing the Problem

In those places where we spend most of our time, we should avoid exposure to power frequency fields. This is especially true for sleeping areas, when the human body is particularly vulnerable to external electromagnetic stressors. All wiring, lighting and electronic equipment in close proximity to a person should ideally be unplugged and panels shielded. If this is not feasible, it is highly recommended to cut off as many electric circuits and devices affecting the selected area as possible.

[1] http://www.cancer.gov/cancertopics/factsheet/Risk/magnetic-fields (National Cancer Institute)