

The Health Dangers from EMF's and Indoor Protection

Reetu Gautam, Gaurav Sharma

Abstract— EMFs which is Electromagnetic fields not only emits from our computer screens but also from electric appliances as well as several other household products. As such, the kitchen of a home is often considered a “hotspot” for EMFs; however, all of the rooms in a house are affected. These produce toxic radiations. This heightened exposure to electromagnetic radiation through household products, power lines, and other electrical devices has toxic effects on the body and overall health. Initially, EMFs stresses the pineal gland, which controls the hormonal balance in the body. As the pineal gland is affected, it makes an individual more susceptible to environmental sensitivity. This issue has an effect on sleeping habits, emotional health, and cognitive ability. Due to this high exposure, many people undergo chronic fatigue or fibromyalgia. Increased stress levels are also associated with EMFs, causing headache, muscle pain, chest pain, anxiety, restlessness, stomach upset, and change in sex drive, lack of focus and motivation, and depression. Especially high EMFs can even be linked to brain tumours and chronic diseases including cancer. However some preventive measures can be used like to grow an indoor plant which absorbs the harmful radiations, use of salt lamp and others.

Index Terms—EMF's, toxic effects, harmful radiations

I. INTRODUCTION

Highlight a section that you want to designate with a certain Today, most of people's are spending more and more time in front of computer screens, touch screen mobiles, tablets and other such electronic devices which produce EMF (electro magnetic field) of different ranges. Studies have shown that EMF exposure above 2 milligauss (mG) begins to harm biological organisms. Prolonged exposure to higher levels, from 2 mG and above, has been associated with cancer and immune system effects. Radiation exposure at these levels can result in skin burns, dry wrinkled skin also known as “photo aging. Countless epidemiological studies, from The British Medical Journal to the World Health Organization (WHO) to the California Department of Health, have linked EMFs to lymphoma, leukaemia, autoimmune system deficiencies, birth defects, tumours, insomnia, heart problems and more. EMF gives rise to Carpel Tunnel Syndrome in which disorder pressure creates on the median nerve in the wrist. A person who frequently uses their thumbs to type text messages on cell phones and touch screen mobiles sometimes develops De-Quervain Syndrome. In most of the cases eyestrain is very common also termed as Computer Vision Syndrome by some

Reetu Gautam, Ess Ess College of Education, Dr. B.R. Ambedkar University, Agra

Gaurav Sharma, Department of NMR, All India Institute of Medical Sciences, New Delhi

ophthalmologists in which there is eye pain or redness, blurred or double vision and headaches appears. As most computers now have Wi-Fi functionality which means we are being exposed to another layer of radiation from two sources. Firstly from the laptop itself; most laptops are configured by default to be in Wi-Fi mode, so even if we are on a hard wired Internet connection our laptop is still emitting and receiving RF radiation

Thus, an attempt has been made to study the harmful effects of such electro-magnetic radiations and to find best indoor protection to minimize the radiation effects.

II. MATERIALS & METHODOLOGY

Electromagnetic fields of various electronic devices can be measured through EMF meter. A meter assesses the level of emission from individual electrical devices as well as the room as a whole. Determining and avoiding the highest emitting items is crucial for overall health.

III. OBSERVATION & DISCUSSION

Most of all electronic equipments emit electromagnetic fields (EMFs) on many different frequencies. These EMFs can be extremely harmful to our health. The use of laptops (especially when situated on the lap near the reproductive organs) has been connected to male infertility. (Journal of Human Reproduction). However some precautions can be taken to avoid EMF radiation as follows –

1. **Do not use Laptops on Laps** – This is in common trend in the present generation which affects the health adversely. Always keep the laptops far away from your body and use effective shields to protect from EMF.
2. **House Plants** -NASA scientists have found that houseplants, like spider plants, and flowers like mums and gerbera daisies can remove up to 87% of toxic indoor air all in one day; this includes carbon monoxide and cigarette smoke. Plants naturally have a built in filtration system that suck in hazardous particles and then neutralize them. Rooms with plants are said to contain half the amount of airborne microbes as rooms that do not have plants. Also many plants protect from EMF like –
 - a. **Cactus** -. Scientist in Switzerland have discovered that employees who suffer from tiredness and headaches feel more energized if a cactus is placed near their monitors. It is thought that cacti have compounds that counter the effects of electromagnetic pollution and radiation emitted from the screen.
 - b. **Bamboo** -. People in Korea, as well as China and Japan have used bamboo in briquette form for

hundreds of years to eliminate odors from kitchens, bathrooms, closets, shoes, etc. It is an effective EMF radiation absorber.

- c. **Cinnamon** – Studies have shown that the scent of cinnamon reduces fatigue, makes you feel happier, and increases your attention in any work.
3. **Water Fountain** – According to some researcher water fountain are proved to be very effective in cleaning air and reducing EMF radiations.
4. **Salt Crystal Lamp** –It helps to reduce EMF to some large extent. It also neutralizes pollutants and toxins from the air. When the salt gets heated by the low wattage bulb, salt crystals are released into the air and attach to impurities, weighing them down so they cannot circulate and settled down.
5. **Distance from Computer Screen** – EMF exposure decreases significantly with increasing distance from the monitor screen. We should always sit atleast 3 feet away from the screen to protect our health.

These are few effective ways to reduce EMF and to protect our health.

REFRANCES

[1] Cross Currents. The Perils of Electropollution. The Promise of Electromedicine, Robert O. Becker, M.D.Jeremy P. Tarcher, Inc.,1990.

[2] Currents of Death-The attempt to cover up the threat to your health. Paul Brodeur, Simon and Schuster, 1989.

[3] Electromagnetic Man Health & Hazard in the Electrical Environment. Cyril W. Smith & Simon Best, St. Martin's Press. Inc.1989.

[4] Otterskog M, Madsén K. Cell phone performance testing and propagation environment modelling in a reverberation chamber. Austin (Texas): The 2003 Reverberation Chamber, Anechoic Chamber and OATS Users Meeting; 2003.

[5] Vian A, Roux D, Girard S, Bonnet P, Paladian F, Davies E, Ledoigt G. Microwave irradiation affects gene expression in plants. *Plant Sign Behav.* 2006.

[6] Roux D, Vian A, Girard S, Bonnet P, Paladian F, Davies E, Ledoigt G. Electromagnetic fields (900 Mhz) evoke consistent molecular responses in tomato plants. *Physiol Plant.* 2006;128:283–288.

[7] Beaubois E, Girard S, Lallechere S, Davies E, Paladian F, Bonnet P, Ledoigt G, Vian A. Intercellular communication in plants: Evidence for two rapidly-transmitted systemic signals generated in response to EMF stimulation in tomato. *Plant Cell and Environ.* 2007;30:834–844.

[8] Tafforeau M, Verduis MC, Norris V, White G, Demarty M, Thellier M, Ripoll C. SIMS study of the calcium-deprivation step related to epidermal meristem production induced in flax by cold shock or radiation from a GSM telephone. *J Trace Microprobe Techn.* 2002;20:611–623.

[9] Tafforeau M, Verduis MC, Norris V, White GJ, Cole M, Demarty M, Thellier M, Ripoll C. Plant sensitivity to low intensity 105 GHz electromagnetic radiation. *Bioelectromagnetics.* 2004;25:403–407.

[10] Haneda T, Fujimura Y, Iino M. Magnetic field exposure stiffens regenerating plant protoplast cell walls. *Bioelectromagnetics.* 2006;27:98–104

[11] Trebbi G, Borghini F, Lazzarato L, Torrigiani P, Calzoni LG, Betti L. Extremely low frequency weak magnetic fields enhance resistance of NN tobacco plants to tobacco mosaic virus and elicit stress-related biochemical activities. *Bioelectromagnetics.* 2007;28:214–223.

[12] Hallé F. Voyage au pays de la forme. Éloge de la plante. Pour une nouvelle biologie. Paris: Seuil; 1999. pp. 90–128. (Fre).

[13] Besset A, Espa F, Dauvilliers Y, Billard M, De Seze R. No effect on cognitive function from daily mobile phone use. *Bioelectromagnetics.* 2005;26:102–108

[14] Davies E. Electrical signals in plants: Facts and hypotheses. In: Volkov AG, editor. *Plant Electrophysiology - Theory and Methods.* Berlin: Springer-Verlag; 2006. pp. 407–422.

[15] The Natural Resources Defense Council. <http://www.nrdc.org/air/default.asp>

[16] Indoor Air Quality, Causes of, Testing and monitoring indoor air pollution

<http://www.treehugger.com/files/2007/10/green-basics-indoor-air-pollution.php>

[17] <http://www.treehugger.com/files/2007/10/green-basics-indoor-air-pollution.php>

[18] What Are Electromagnetic Fields? World Health Organization. <http://www.who.int/peh-emf/about/WhatisEMF/en/>

[19] 19.Electromagnetic Hypersensitivity. *IEEE Eng. Med. Biol.* Sept/Oct 173-175, 2002. <http://ewh.ieee.org/soc/embs/comar/Hypersensitivity.htm>

[20] 20.Electromagnetic fields, A Clear and Present Danger. <http://www.beinginbalance.com/environment.shtml>

[21] 21. Reducing Electromagnetic frequency Exposure May Improve Your Health, <http://www.naturalnews.com/022926.htm>

[22] 22.Emmerson, Kassidy. Prevent Indoor Air Pollution And Protect Your Health! Associated Content. May 2006.

[23] 23.Electromagnetic Fields. Consumer Health Organization of Canada. <http://www.consumerhealth.org/articles/display.cfm?ID=19990303163909>