



American Academy of Environmental Medicine

6505 E Central • Ste 296 • Wichita, KS 67206

Tel: (316) 684-5500 • Fax: (316) 684-5709

www.aaemonline.org

Executive Committee

President

A.L. Barrier, M.D., FAAO-HNS
One Hospital Drive
Columbia, MO 65212

President-Elect

Amy Dean, D.O.
1955 Pauline Blvd Ste 100D
Ann Arbor, MI 48103

Secretary

Charles L. Crist, M.D.
3009 Falling Leaf Ctr, Ste 1
Columbia, MO 65201

Treasurer

James W. Willoughby, II, D.O.
24 Main St.
Liberty, MO 64068

Immediate Past President

Robin Bernhoft, M.D., FAAEM

Advisor

Gary R. Oberg, M.D., FAAEM

Board of Directors

Craig Bass, M.D.
Amy Dean, D.O.
Stephen Genuis, M.D., FAAEM
Martha Grout, M.D., MD(H)
Janette Hope, M.D.
W. Alan Ingram, M.D.
Derek Lang, D.O.
Glenn A. Toth, M.D.
Ty Vincent, M.D.

Continuing Medical Education

Chairman
James W. Willoughby, II, D.O.
24 Main St.
Liberty, MO 64068

Executive Director

De Rodgers Fox

American Academy of Environmental Medicine Recommendations Regarding Electromagnetic and Radiofrequency Exposure

Physicians of the American Academy of Environmental Medicine recognize that patients are being adversely impacted by electromagnetic frequency (EMF) and radiofrequency (RF) fields and are becoming more electromagnetically sensitive.

The AAEM recommends that physicians consider patients' total electromagnetic exposure in their diagnosis and treatment, as well as recognition that electromagnetic and radiofrequency field exposure may be an underlying cause of a patient's disease process.

Based on double-blinded, placebo controlled research in humans,¹ medical conditions and disabilities that would more than likely benefit from avoiding electromagnetic and radiofrequency exposure include, but are not limited to:

- Neurological conditions such as paresthesias, somnolence, cephalgia, dizziness, unconsciousness, depression
- Musculoskeletal effects including pain, muscle tightness, spasm, fibrillation
- Heart disease and vascular effects including arrhythmia, tachycardia, flushing, edema
- Pulmonary conditions including chest tightness, dyspnea, decreased pulmonary function
- Gastrointestinal conditions including nausea, belching
- Ocular (burning)
- Oral (pressure in ears, tooth pain)
- Dermal (itching, burning, pain)
- Autonomic nervous system dysfunction (dysautonomia).

Based on numerous studies showing harmful biological effects from EMF and RF exposure, medical conditions and disabilities that would more than likely benefit from avoiding exposure include, but are not limited to:

- Neurodegenerative diseases (Parkinson's Disease, Alzheimer's Disease, and Amyotrophic Lateral Sclerosis).²⁻⁶
- Neurological conditions (Headaches, depression, sleep disruption, fatigue, dizziness, tremors, autonomic nervous system dysfunction, decreased memory, attention deficit disorder, anxiety, visual disruption).⁷⁻¹⁰
- Fetal abnormalities and pregnancy.^{11,12}
- Genetic defects and cancer.^{2,3,13-19}
- Liver disease and genitourinary disease.^{12,20}

Because Smart Meters produce Radiofrequency emissions, it is recommended that patients with the above conditions and disabilities be accommodated to protect their health. The AAEM recommends: that no Smart Meters be on these patients' homes, that Smart Meters be removed within a reasonable distance of patients' homes depending on the patients' perception and/or symptoms, and that no collection meters be placed near patients' homes depending on patients' perception and/or symptoms.

Submitted by: Amy L. Dean, DO and William J. Rea, MD

Approved July 12, 2012 by the Executive Committee of the American Academy of Environmental Medicine

Bibliography

1. Rea WJ, Pan Y, Fenyves EJ, et al. Electromagnetic field sensitivity. *Journal of Bioelectricity*. 1991; 10(1 &2): 243-256.
2. Xu S, Zhou Z, Zhang L, et al. Exposure to 1800 MHZ radiofrequency radiation induces oxidative damage to mitochondrial DNA in primary cultured neurons. *Brain Research*. 2010; 1311: 189-196.
3. Zhao T, Zou S, Knapp P. Exposure to cell phone radiation up-regulates apoptosis genes in primary cultures of neurons and astrocytes. *Neurosci Lett*. 2007; 412(1): 34-38.
4. Nittby H, Brun A, Eberhardt J, et al. Increased blood-brain barrier permeability in mammalian brain 7 days after exposure to the radiation from a GSM-900 mobile phone. *Pathophysiology*. 2009; 16: 103-112.
5. Awad SM, Hassan NS. Health Risks of electromagnetic radiation from mobile phone on brain of rats. *J. Appl. Sci. Res*. 2008; 4(12): 1994-2000.
6. Leszczynski D, Joenvaara S. Non-thermal activation of the hsp27/p38MAPK stress pathway by mobile phone radiation in human endothelial cells: Molecular mechanism for cancer - and blood-brain barrier - related effects. *Differentiation*. 2002; 70: 120-129.
7. Santini R, Santini P, Danze JM, et al. Study of the health of people living in the vicinity of mobile phone base stations: 1. Influences of distance and sex. *Pathol Biol*. 2002; 50: 369-373.
8. Abdel-Rassoul G, Abou El-Fateh O, Abou Salem M, et al. Neurobehavioral effects among inhabitants around mobile phone base stations. *Neurotox*. 2007; 28(2): 434-440.
9. Hutter HP, Moshammer H, Wallner P, Kundi M. Subjective symptoms, sleeping problems, and cognitive performance in subjects living near mobile phone base stations. *Occup. Environ. Med*. 2006; 63: 307-313.

10. Kolodynski AA, Kolodynska VV. Motor and psychological functions of school children living in the area of the Skrunda Radio Location Station in Latvia. *Sci. Total Environ.* 1996; 180: 87-93.
11. Magras IN, Xenos TD. RF radiation-induced changes in the prenatal development of mice. *Bioelectromagnetics.* 1997; 18:455-461.
12. Ingole IV, Ghosh SK. Cell phone radiation and developing tissues in chick embryo - a light microscopic study of kidneys. *J. Anat. Soc. India.* 2006; 55(2): 19-23.
13. Phillips JL, Singh NP, Lai H. Electromagnetic fields and DNA damage. *Pathophysiology.* 2009; 16: 79-88.
14. Ruediger HW. Genotoxic effects of radiofrequency electromagnetic fields. *Pathophysiology.* 2009; 16(2): 89-102.
15. Lee S, Johnson D, Dunbar K. 2.45 GHz radiofrequency fields alter gene expression on cultured human cells. *FEBS Letters.* 2005; 579: 4829-4836.
16. Demsia G, Vlastos D, Matthopoulos DP. Effect of 910-MHz electromagnetic field on rat bone marrow. *The Scientific World Journal.* 2004; 4(S2): 48-54.
17. Lai H, Singh NP. Magnetic-field-induced DNA strand breaks in brain cells of the rat. *Environmental Health Perspectives.* 2004; 112(6): 687-694. Available from: <http://ehp03.niehs.nih.gov/article/info:doi/10.1289/ehp.6355>
18. Mashevich M, Foldman D, Kesar, et al. Exposure of human peripheral blood lymphocytes to electromagnetic fields associated with cellular phones leads to chromosomal instability. *Bioelectromagnetics.* 2003; 24: 82-90.
19. Ban R, Grosse Y, Lauby-Secretan B, et al. Carcinogenicity of radiofrequency electromagnetic fields. *The Lancet Oncology.* 2011; 12(7): 624-626. Available from: [http://www.thelancet.com/journals/lanonc/article/PIIS1470-2045\(11\)70147-4/fulltext?_eventId=login](http://www.thelancet.com/journals/lanonc/article/PIIS1470-2045(11)70147-4/fulltext?_eventId=login)
20. Lubec G, Wolf C, Bartosch B. Amino acid isomerisation and microwave exposure. *Lancet.* 1989; 334: 1392-1393.

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

6/16/2016 4:39:15 PM

in

Case No(s). 16-0921-GA-CSS

Summary: Testimony Document 4 electronically filed by Mrs. Allison Adams on behalf of Adams, Allison Mrs.