

University of Albany, New York– August 31 / **Serious Public Health Concerns Raised Over Exposure to Electromagnetic Fields (EMF) from Power Lines and Cell Phones**

An international working group of scientists, researchers and public health policy professionals (The BioInitiative Working Group) has released its report on electromagnetic fields (EMF) and health. It raises serious concern about the safety of existing public limits that regulate how much EMF is allowable from power lines, cell phones, and many other sources of EMF exposure in daily life.

Electromagnetic radiation from such sources as electric power lines, interior wiring and grounding of buildings and appliances are linked to increased risks for childhood leukemia and may set the stage for adult cancers later in life. A report from the BioInitiative Working Group ([www.bioinitiative.org](http://www.bioinitiative.org)) released on Friday, August 31<sup>st</sup> documents the scientific evidence that power line EMF exposure is responsible for hundreds of new cases of childhood leukemia every year in the United States and around the world.

The report provides detailed scientific information on health impacts when people are exposed to electromagnetic radiation hundreds or even thousands of times below limits currently established by the Federal Communications Commission (US FCC) and International Commission for Non-Ionizing Radiation Protection in Europe (ICNIRP). The authors reviewed more than 2000 scientific studies and reviews, and concluded that the existing public safety limits are inadequate to protect public health. From a public health policy standpoint, new public safety limits, and limits on further deployment of risky technologies are warranted based on the total weigh of evidence.

The report documents scientific evidence raising worries about childhood leukemia (from power lines and other electrical exposures), brain tumors and acoustic neuromas (from cell and cordless phones) and Alzheimer's disease. There is evidence that EMF is a risk factor for both childhood and adult cancers.

Public health expert and co-editor of the Report Dr. David Carpenter, Director, Institute for Health and the Environment at the University of Albany, New York says *“this report stands as a wake-up call that long-term exposure to some kinds of EMF may cause serious health effects. Good public health planning is needed now to prevent cancers and neurological diseases linked to exposure to power lines and other sources of EMF. We need to educate people and our decision-makers that “business as usual” is unacceptable.”*

Health questions about power line EMFs were initially raised by Nancy Wertheimer, a Colorado public health expert and Ed Leeper, an electrical engineer in 1979. Wertheimer noticed that children were twice or three times as

likely to have leukemia tended to live in homes in the Denver, CO area close to power lines and transformers. Now, there are dozens of studies confirming the link, but public health response has been slow in coming, and new standards to protect the public are necessary.

Brain tumor specialist Dr. Lennart Hardell, MD, PhD and Professor at University Hospital in Orebro, Sweden is a member of the BioInitiative Working Group. His work on cell phones, cordless phones and brain tumors is widely recognized to be pivotal in the debate about the safety of wireless radiofrequency and microwave radiation. *“The evidence for risks from prolonged cell phone and cordless phone use is quite strong when you look at people who have used these devices for 10 years or longer, and when they are used mainly on one side of the head.*

Brain tumors normally take a long time to develop, on the order of 15 to 20 years. Use of a cell or cordless phone is linked to brain tumors and acoustic neuromas (tumor of the auditory nerve in the brain) and are showing up after only 10 years (a shorter time period than for most other known carcinogens). *“This indicates we need research on more long-term users to understand the full risks”* says Dr. Hardell.

Dr. Hardell’s work has been confirmed in other studies on long-term users. A summary estimate of all studies on brain tumors shows overall a 20% increased risk of brain tumor (malignant glioma) with ten years of use. But the risk increases to 200% (a doubling of risk) for tumors on the same side of the brain as mainly used during cell phone calls. *“Recent studies that do not report increased risk of brain tumors and acoustic neuromas have not looked at heavy users, use over ten years or longer, and do not look at the part of the brain which would reasonably have exposure to produce a tumor.”*

Wireless technologies that rely on microwave radiation to send emails and voice communication are thousands of times stronger than levels reported to cause some health impacts. Prolonged exposure to radiofrequency and microwave radiation from cell phones, cordless phones, cell towers, WI-FI and other wireless technologies have linked to physical symptoms including headache, fatigue, sleeplessness, dizziness, changes in brainwave activity, and impairment of concentration and memory. Scientists report that these effects can occur with even very small levels of exposure, if it occurs on a daily basis. Children in particular are vulnerable to harm from environmental exposures of all kinds.

Co-editor of the report, Cindy Sage of Sage Associates says *“public health and EMF policy experts have now given their opinion of the weight of evidence. The existing FCC and international limits for public and occupational exposure to electromagnetic fields and radiofrequency radiation are not protective of public health. New biologically-based public and occupational exposure are*

*recommended to address bioeffects and potential adverse health effects of chronic exposure. These effects are now widely reported to occur at exposure levels significantly below most current national and international limits.”*

Biologically-based exposure standards are needed to prevent disruption of normal body processes. Effects are reported for DNA damage (genotoxicity that is directly linked to integrity of the human genome), cellular communication, cellular metabolism and repair, cancer surveillance within the body; and for protection against cancer and neurological diseases. Also reported are neurological effects including changes in brainwave activity during cell phone calls, impairment of memory, attention and cognitive function; sleep disorders, cardiac effects; and changes in immune function (allergic and inflammatory responses).

Sage says *“the Working Group recommends a biologically-based exposure limit that is protective against extremely-low frequency (power line) and radiofrequency fields which, with chronic exposure, can reasonably be presumed to result in significant impacts to health and well-being”.*

Contributing author Dr. Martin Blank, Columbia University professor and researcher in bioelectromagnetics says *“cells in the body react to EMFs as potentially harmful, just like to other environmental toxins, including heavy metals and toxic chemicals. The DNA in living cells recognizes electromagnetic fields at very low levels of exposure; and produces a biochemical stress response. The scientific evidence tells us that our safety standards are inadequate, and that we must protect ourselves from exposure to EMF due to powerlines, cell phones and the like.”* He wrote the section on stress proteins for the BioInitiative Report.

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Report: available at [www.bioinitiative.org](http://www.bioinitiative.org) (on August 31, 2007)

Title: BioInitiative: A Rationale for a Biologically-based Public Exposure Standard for Electromagnetic Fields (ELF and RF)