Very Weak Magnetic Fields Lower Sperm Quality

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De-Kun Li's new epidemiological study showing that extended exposure to weak magnetic fields as low as 1.6 mG (0.16 μT) can have negative effects on sperm quality was published today by *Reproductive Toxicology.*

"This is the first demonstration of a link between EMF exposure and the decline of semen quality," Li told *Microwave News.* The study, which was carried out in Shanghai, has important implications for overall fertility because approximately 40% of the Shanghai population is exposed to more than 1.6 mG for 2.4 hours on a daily basis.

The study, a collaboration with Chinese researchers, documented detrimental effects on a number of different indices of male fertility including semen morphology, motility, density and vitality. The effect on sperm quality follows a dose-response relationship: the longer the daily exposure above 1.6 mG, the greater the risk. Men who were exposed for more than six hours a day were three-to-four times more likely to have decreased fertility. The research team notes that the real risk is probably higher. "[S]ince everyone is exposed to some levels of magnetic fields, we did not have a totally 'unexposed' reference group in our study population. Therefore, the magnitude of the effect observed in this study is likely underestimated," they note.

They also comment that what they have seen is biologically "plausible" because experimental studies in China and Korea have shown that magnetic fields can affect the reproductive system of mice.

Li first announced this finding at a scientific conference a year ago last summer: see our July 3, 2008 post. Now the full details are available in the new paper. Li is with Kaiser Permanente in Oakland, CA.

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Deleterious effects have now been shown for both power-frequency EMFs and RF/microwave radiation (see "Keep That Phone Out of Your Trouser Pocket!"). The same mechanism could be at work at both high and low frequencies," Li said.

De-Kun Li, sperm quality, fertility, cell phones,

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