



Mobile towers and health hazards

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For a long time the government is forming new rules and regulations to protect health of its citizens. Recently Union government has decided to limit the radio frequency fields (base station emissions) to one-tenth of the existing level. With increasing installation of new towers across the country, the issue of mobile tower radiations causing health hazards including cancer has been a cause for concern to people. The step was taken after Ministry of Environment and Forests¹ issued an advisory to reduce the radiation and also not to have towers within 1 km radius to avoid adverse impact on birds and bees. The Department of Telecom ensured that radiation emission levels from cell-phone towers are under permissible limits. Under this notification, the Department of Telecom ensured that the exposure limits for radio frequency fields (1800 MHz) is brought down by one tenth to 0.92 Watt per square meter compared to the previous standard 9.2 Watt per square meter. But at the same time Telecom department also said: "From all evidence accumulated so far, no adverse short or long term health effects have been shown to occur from the radio frequency signals produced by based stations". The government quoted that they are taking such step to protect citizens from adverse effects of radiation in areas where the exposure limit can exceed. Different countries across the world including USA, Canada, Italy, New Zealand, Belgium etc have issued exposure standards for radio frequency fields.

A number of studies have been carried out on the topic of concern. Systematic review by Schuz J et al (2008)² on association of childhood leukemia and exposure to electromagnetic field showed no

association between exposure to radio frequency electromagnetic fields emitted from broadcast towers and childhood leukemia risk. Cleary et al (1990) carried out series of experiments on cell proliferation and cell kinetic studies under continuous wave Radio Frequency Radiation (RFR) exposures and reported increased proliferation in human peripheral lymphocytes.³ Chiang H (1998) RFR has shown to down-regulate gap-junctional intercellular communication, which plays an essential role in regulation of cell growth, differentiation and wound healing.⁴ In a study by Braune et al (1998) showed that resting blood pressure increased during exposure to RFR emitted from cell phones.⁵ In experimental animals an increase in the blood brain barrier permeability in response to exposure to RFR has been reported by Fritze et al (1997).⁶

In spite of above evidence, a major limitation of most of the laboratory studies was unable to find a direct link between exposure to RFR and the incidence of cancer. There is no convincing scientific literature to prove a direct causal association of radiation emitted from mobile towers and health hazards. No study has come out with duration of exposure necessary for the development of human health effects. The step has been taken by the Indian government as a precautionary measure only.

It is important to find an answer to this question because such regulation has an impact on the

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common man. Such regulation should not be a hurdle to access of information technology to the people. At the same time if cell-phone tower frequencies are lowered, then the mobile phones will consume higher power and emit more radiations to gain better cellular coverage. Also, with higher power consumption on the handset that would lead to lesser battery life, lesser standby time and more mobile charging energy consumption which is again a challenge for energy consumption reduction drive and financial burden on the consumer.

In light of the above, there is need of good epidemiological research studies to throw light on possible risk and strength of association of radiation from mobile towers and health hazards. Studies are

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