The studies below are all validated / replicated and published.

February 11, 2001

Vermont House of Representatives
Committee on Natural Resources
State House
Montpelier, VT

and

Central Vermont Regional Development Planning Commission
26 State Street
Montpelier VT

Dear Committee Members,

I am writing to express my opinion and concern on the possible health effects of exposure to radiofrequency radiation from wireless transmitters (base stations).

The level (intensity) of radiation from transmitters that one would be exposed to is very low, mainly because of the distance from the transmitter. The level is generally considered to be harmless. Most research in this area deals with radiation of much higher levels. However, some recent studies have suggested that exposure to similar in intensity to those from cellular phone base station transmitters is not completely safe. The following is a partial list of biological studies on low level effects (within the levels of exposure less than 200 ft from a transmitter):

(1) Persson et al. (1997): Change in blood-brain-barrier at a specific absorption rate (SAR) of 0.0004 W/kg. The blood-brain-barrier protects the brain from exogenous chemicals. [Blood Brain Barrier permeability in rat exposed to electromagnetic fields used in wireless communications, Wireless Network 3:455-461, 1997]

(2) Velizarov et al. (1999): Change in cell proliferation (multiplication) at a SAR range of 0.000021 - 0.0021 W/kg. [The effects of radiofrequency fields on cell proliferation are non-thermal, Bioelectrochemistry and Bioenergetics 48:177-180, 1999]

(3) Magnras & Xenos (1997): Decrease in reproductive functions at intensities of 160-1053 nW/sq. cm. [RF radiation-induced changes in the prenatal development of mice. Bioelectromagnetics 18:455-461, 1997]

(4) Ray & Behari (1990): Decrease eating and drinking behavior at a SAR of 0.0317 W/kg [Physiological changes in rats after exposure to low levels of microwaves. Radiation Research 123:199-202, 1990]

(5) Dutta et al. (1989): Change in calcium efflux from cells at SAR of 0.05 - 0.005 W/kg. Calcium is an important chemical that regulates cell functions. [Radiofrequency radiation-induced calcium ion efflux enhancement from human and other neuroblastoma cells in culture. Bioelectromagnetics 10:197-202, 1989]

(6) Phillips et al. have observed DNA damage in human cells exposed to very low intensity cellular telephone signals (0.0024 – 0.024 W/kg, 2 – 21 hr exposure). [DNA damage in Molt-4 lymphoblastoid cells exposed to cellular telephone radiofrequency fields in vitro. Bioelectrochemistry and Bioenergetics 45:103-110, 1998]

(7) De Pomerai et al. reported molecular stress responses in cells exposed at a SAR of 0.001 W/kg. [Non-thermal heat shock response to microwaves, Nature 405:417-418, 2000]

Furthermore, when considering the health effects of radiation from wireless transmitters, one has to consider the effect of long-term exposure. People who live close to transmitters are constantly being exposed to the radiation for months or years. Even though the level is low, it would matter if the effects of radiofrequency radiation turn out to be cumulative (i.e.,add up over time). Small doses cumulate over a long period of time will eventually lead to harmful effects. Therefore, exposure of the general public to radiofrequency radiation from wireless transmitters should be limited to a minimal.

Sincerely,

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