Radio Wave Packet

by

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Contents

SOME BIOLOGICAL EFFECTS OF RADIO WAVES

Power density ($\mu W/cm^2$)	Reported Biological Effects	References
0.0000000000001	Altered genetic structure in E. Coli	Belyaev 1996
0,0000000001	Threshold of human sensitivity	Kositsky 2001
0.000000001	Altered EEG in human subjects	Bise 1978
0.0000000027	Growth stimulation in Vicius fabus	Brauer 1950
0.00000001	Effects on immune system in mice	Bundyuk 1994
0.00000002	Stimulation of ovulation in chickens	Kondra 1970
0.000005	Effect on cell growth in yeast	Grundler 1992
0.00001	Conditioned "avoidance" reflex in rats	Kositsky 2001
0.000027	Premature aging of pine needles	Selga 1996
0.001	**100 Yards from a Cellular Phone**	
0.002	Sleep disorders, abnormal blood pressure, nervousness, weakness, fatigue, limb pain, joint pain, digestive problems, fewer schoolchildren promoted—controlled study near a shortwave transmitter	Altpeter 1995, 1997
0.0027	Growth inhibition in Vicius fabus	Brauer 1950
0.0027 to 0.065	Smaller tree growth rings	Balodis 1996
0.007	**50 Feet from a Cordless Phone**	
0.01	Human sensation	Kolbun 1987
0.016	**1 Mile from a Cellular Tower**	
0.06	Altered EEG, disturbed carbohydrate metabolism, enlarged adrenals, altered adrenal hormone levels, structural changes in liver, spleen, testes, and brain—in white rats and rabbits	Dumanskij 1974
0.06	Slowing of the heart, change in EEG in rabbits	Serkyuk, reported in McRee 1980
0.05	**10 Feet from a Wireless Computer**	
0.1	Increase in melatonin in cows	Stark 1997
0.1 to 1.8	Decreased life span, impaired reproduction, structural and developmental abnormalities in duckweed plants	Magone 1996
0.13	Decreased cell growth (human epithelial amnion cells)	Kwee 1997
0.168	Irreversible sterility in mice	Magras 1997
0.2 to 8.0	Childhood leukemia near transmitters	Hocking 1996
0.3	Impaired motor function, reaction time, memory and attention of schoolchildren, and altered sex ratio of children (fewer boys)	Kolodynski 1996
0.6	Change in calcium ion efflux from brain tissue	Dutta 1986
0.6	Cardiac arrhythmias and sometimes cardiac arrest (frogs)	Frey 1968
0–4	Altered white blood cell activity in schoolchildren	Chiang 1989
1.0	Headache, dizziness, irritability, fatigue, weakness, insomnia, chest pain, difficulty breathing, indigestion (humans—occupational exposure)	Simonenko 1998
1.0	Stimulation of white cells in guinea pigs	Shandala 1978
2.5	Breakdown of blood-brain barrier (used a digital cellular phone to provide the radiation)	Salford 1997
5.0	Leukemia, skin melanoma and bladder cancer near TV and FM transmitter	Dolk 1997

2.0 (lower threshold not known)	"Microwave hearing"—clicking, buzzing, chirping, hissing, or high-pitched tones	Frey 1963, 1969, 1971, 1973, 1988, Justeson 1979, Olsen 1980, Wieske 1963, Lin 1978
5.0	Biochemical and histological changes in liver, heart, kidney, and brain tissue	Belokrinitskiy l982
10.0	Damaged mitochondria, nucleus of cells in hippocampus of brain	Belokrinitskiy 1982a
10~0	Impaired memory and visual reaction time in people living near transmitters	Chiang 1989
10.0	Decreased size of litter, increased number of stillborns in mice	Il'Chevich (reported in McRee 1980)
10.0	Redistribution of metals in the lungs, brain, heart, liver, kidney, muscles, spleen, bones, skin, blood	Shutenko 1981
1000.0	**FCC Exposure Limit**	

INTERNATIONAL RADIO WAVE EXPOSURE STANDARDS

Country	Exposure level ($\mu W/cm^2$)
New South Wales, Australia	0.001
Salzburg, Austria (for pulsed transmissions)	0.1
Russia	2–10
Bulgaria	2–10
Hungary	2–10
Switzerland	2–10
China	7–10
Italy	10
Auckland, New Zealand	50
Australia	200
New Zealand	200–1000
Japan	200–1000
Germany	200–1000
United States	200–1000
Canada	200–1000
United Kingdom	1000–10,000

RADIO WAVE SICKNESS

Symptoms

Insomnia, headaches, dizziness, nausea, memory loss, difficulty concentrating, irritability, respiratory illness (bronchitis, sinusitis, pneumonia), flu-like illness, asthma, fatigue, weakness, pressure or pain in the chest, increase in blood pressure, altered pulse rate (usually slowed), pressure behind the eyes, other eye problems, swollen throat, dry lips or mouth, dehydration, sweating, fever, shortness of breath, muscle spasms, tremors, pain in the legs or the soles of the feet, testicular or pelvic pain, joint pain, pains that move around the body, nosebleeds, internal bleeding, hair loss, digestive problems, skin rash, ringing in the ears, impaired sense of smell, pain in the teeth (especially with metallic fillings)

Scientific Studies

Clinical studies of workers exposed on the job

Sadchikova	1960	525 workers exposed to microwave generating equipment
Sadchikova	1974	1180 workers
Klimkova-Deutschova	1974	530 workers from 29 places of employment
Baranski and Edelwejn	1975	Workers in the Military Institute of Aviation Medicine, Warsaw
Zalyubovskaya and Kiselev	1978	Study of 72 engineers and technicians
Bachurin	1979	100 television, radio and other workers
Sadchikova	1980	50 industrial workers
Chiang	1981	841 workers in 11 factories
Gorbach	1982	142 workers exposed to microwave equipment
Trinos	1982	2247 workers at two industrial plants
Markarov	1995	53 workers exposed to low-dose radio waves

Epidemiological studies

Lilienfeld	1978	Employees in the American embassy in Moscow
Flakiewicz	1992	Residents near a long wave transmitter at Konstantynow, Poland
Altpeter	1995, 1997	Residents who lived near a shortwave radio station at Schwarzenburg, Switzerland
Kolodynski et al.	1996	Residents near an early warning radar station at Skrunda, Latvia
Hocking	1998	Users of cellular telephones—includes several reports of strokes
Mild	1998	Users of cellular telephones

Reports to the Cellular Phone Taskforce

Since digital cellular phones (and towers) came to the United States in November 1996, the symptoms of radio wave sickness have become epidemic in all major cities and near most wireless facilities. The above list of symptoms includes the symptoms reported throughout the scientific literature, plus some new ones based on what we are hearing and experiencing, from throughout the world.

History of This Illness

The term “radio wave sickness” was first used by Russian doctors to describe an occupational illness developed by large numbers of workers exposed to microwave or radiofrequency radiation. The symptoms were called “neurasthenic.” “Neurasthenia” was an older term for this group of symptoms, which was coined by an American physician, George Beard, in 1868, to describe a new type of illness that followed the building of the railroads and the telegraph system in this country. The illness was particularly common among telegraph, and later among telephone operators. The term “neurasthenia” fell out of fashion in the twentieth century in this country, when this cluster of symptoms, or a large number of them, began to be referred to as “anxiety” symptoms, presumably of purely psychological origin. Illness by radio waves has been rediscovered, and is now classed with illness caused by electricity in general, under the term “electrical sensitivity.” There have been four international scientific conferences held in recent years on electrical sensitivity—one in Austria, two in Denmark, and one, for medical doctors, in Dallas, Texas. Two books exist on the subject, by Grant (1995) and Bergqvist (1997).

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For a much more extensive review of the literature on this subject, see *Microwaving Our Planet: The Environmenta1 Impact of the Wireless Revolution,* Arthur Firstenberg, 1997, $18 from the Cellular Phone Taskforce, P.O Box 100404, Brooklyn, New York 11210, or P.O. Box 1337, Mendocino, CA 95460.