Abstracts

Safety Level with Respect to Human Exposure to Radiofrequency Electromagnetic Fields (300 Khz-100 GHz)

A.W. Guy. "Safety Level with Respect to Human Exposure to Radiofrequency Electromagnetic Fields (300 Khz-100 GHz)." 1980 MTT-S International Microwave Symposium Digest 80.1 (1980 [MWSYM]): 335-336.

The development of safety guides for human exposure to radiofrequency fields (RFF) must be based principally upon the results of animal experiments since, with the exception of obvious heating effects, there is a paucity of quantitative data relating to the action of these fields on mankind. In using the results of animal experiments, one must be careful to distinguish the difference between exposure fields and the fields in the tissues that produce the biological action. This difference, which varies markedly with frequency, body size, and exposure conditions, must be accounted for in the use of animal data for predicting safe human exposure levels over a broad frequency range. Based on a critical evaluation of the world literature on the subject, it is the consensus of the ANSI Subcommittee C95.4 (charged with developing voluntary safety standards for human exposure to RFF) that fields in the tissues should be restricted to levels that would limit average specific absorption rate (SAR) of the energy to less then 0.4 W/Kg. This led to recommended exposure fielde equivalent to 100 mW/cm^2, for frequencies (f) 0.3 MHz to 3 MHz; $900/f^2$ mW/cm^2, 3 MHz to 30 MHz; 1 mW/cm^2, 30 MHz to 300 MHz; $f/300$ mW/cm^2, 300 MHz to 1500 MHz; 5 mW/cm^2, 1.5 GHz to 100 GHz.

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