

designed to study the effects of long term exposure. When considering repeated, low level irradiation, the possibility of cumulative effects have been raised. While there is presently no confirmed evidence for cumulative effect, there is little information to the contrary. Large scale epidemiological investigations should also be undertaken among the two-way mobile communication and cellular telephone users who may be exposed to varying levels of RF radiation over time. Better understanding is needed of the mechanisms of interaction between RF radiation and biological systems, and of the significance of any observed effects. Enormous progress has been made in the difficult topic of dosimetry. However, measurement of RF energy distribution in and around a subject for exposure assessment remains a challenge, more so for large populations. This type of quantitative information is also required for extrapolation from animal experimentation to human response.

The emphasis of this chapter is on the health effects of RF and microwave energy. It should be noted that many health benefits are derived from application of RF and microwave energy for biomedical purposes. Current uses include: treatments for cancer, cardiac arrhythmia, and benign prostate hypertrophy, pulsewave sensing, and diathermy [Hand and Cardossi, 1993; Huang, 1995; Lin, 1993a,b; Lin et al., 1994, 1995; Lin and Wang, 1995]. Some of the emerging applications are: bone fracture healing, cardiac ablation, treatment of uterine bleeding, and rearming of frozen organs [Phipps et al., 1990; Ikeda et al., 1994; Rho et al., 1995; Lin, 1993a; Lin et al., 1995, 1996; Lin and Wang, 1996].

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