

positive association. While these results may be interpreted as failing to indicate an excess of cancer mortality from radar or microwave exposure, they neither prove nor disprove prolonged exposures to RF and microwave radiation from wireless communication technology pose a risk to human health. An urgent need of epidemiological studies of RF effects on mobile telephone users is better dosimetry and exposure assessment.

Table 13. Recent epidemiological studies of human exposure to RF and microwave radiation

Spectrum CW/Pulse	Study Endpoint	Study Population	Results	Author Year
RF	Mortality (Cancer)	Amateur Radio Op.	SS	Milham [1988]
Microwave	Cancer	Children Near Tower	NS	Selvin et al [1992]
RF (Radio)	Cancer Leukemia	Children Near Tower	SS	Mascarinec & Cooper [1993]
Microwave/ RF(Pulse)	Brain Tumors	U.S.A.F. Personnel	SS	Grayson [1996]
RF (Cell- phone)	Mortality (Brain Tumors)	Mobile Telephone User	NS	Rothman et al [1996]

SS - Statistically significant; NS - Statistically nonsignificant

SUMMARY AND CONCLUSIONS

It is noteworthy that there is agreement in studies where higher SARs are induced by microwave exposure. Several studies have demonstrated that when the SAR is sufficiently high (CW or pulse-modulated at 165 W/kg or more) that it raises the temperature of the brain to 42°C or higher, BBB permeability increases for substances normally excluded from brain parenchyma.

For rabbits exposed to a minimum SAR of 138 W/kg in the production of lens opacities, the duration threshold for the long the duration of exposure was found to be 10 minutes.

Although the effects of microwave radiation on the eye were more prominent in the epidemiological studies of the military personnel.

The microwave radiation at the average power. The microwave produces a rapid rise in pressure that travels through the same mechanism as the middle and inner ear. The microwave pulses. The effects upon the hearing apparatus of microwave radiation.

Exposure of the eye to produce electrophysiological changes have been reported to be observed electrophysiological changes at the highest SAR was 165 W/kg.

As mentioned above, the BBB permeability findings persist at 165 W/kg). In addition, the BBB permeability. Nevertheless, these findings may be capable of causing damage to the brain.

Several *in vitro* studies showed that the BBB permeability increased in cultures exposed to microwave at an average SAR of 165 W/kg.

Two of the most recent studies gave excess findings. Grayson [1996] was the only study with a small cluster of findings as a confounding factor. Realistic measures of risk analysis. In addition, there is an urgent need for better dosimetry and exposure assessment.