

## Abstract

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# Epidemiological evidence for an association between use of wireless phones and tumor diseases.

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### Abstract

During recent years there has been increasing public concern on potential cancer risks from microwave emissions from wireless phones. We evaluated the scientific evidence for long-term mobile phone use and the association with certain tumors in case-control studies, mostly from the Hardell group in Sweden and the Interphone study group. Regarding brain tumors the meta-analysis yielded for glioma odds ratio (OR)=1.0, 95% confidence interval (CI)=0.9-1.1. OR increased to 1.3, 95% CI=1.1-1.6 with 10 year latency period, with highest risk for ipsilateral exposure (same side as the tumor localisation), OR=1.9, 95% CI=1.4-2.4, lower for contralateral exposure (opposite side) OR=1.2, 95% CI=0.9-1.7. Regarding acoustic neuroma OR=1.0, 95% CI=0.8-1.1 was calculated increasing to OR=1.3, 95% CI=0.97-1.9 with 10 year latency period. For ipsilateral exposure OR=1.6, 95% CI=1.1-2.4, and for contralateral exposure OR=1.2, 95% CI=0.8-1.9 were found. Regarding meningioma no consistent pattern of an increased risk was found. Concerning age, highest risk was found in the age group <20 years at time of first use of wireless phones in the studies from the Hardell group. For salivary gland tumors, non-Hodgkin lymphoma and testicular cancer no consistent pattern of an association with use of wireless phones was found. One study on uveal melanoma yielded for probable/certain mobile phone use OR=4.2, 95% CI=1.2-14.5. One study on intratemporal facial nerve tumor was not possible to evaluate due to methodological shortcomings. In summary our review yielded a consistent pattern of an increased risk for glioma and acoustic neuroma after >10 year mobile phone use. We conclude that current standard for exposure to microwaves during mobile phone use is not safe for long-term exposure and needs to be revised.

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