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Mobile Phone Use and Brain Tumors in Children and Adolescents: A Multicenter Case-Control Study.

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Abstract

Background It has been hypothesized that children and adolescents might be more vulnerable to possible health effects from mobile phone exposure than adults. We investigated whether mobile phone use is associated with brain tumor risk among children and adolescents. **Methods** CEFALO is a multicenter case-control study conducted in Denmark, Sweden, Norway, and Switzerland that includes all children and adolescents aged 7-19 years who were diagnosed with a brain tumor between 2004 and 2008. We conducted interviews, in person, with 352 case patients (participation rate: 83%) and 646 control subjects (participation rate: 71%) and their parents. Control subjects were randomly selected from population registries and matched by age, sex, and geographical region. We asked about mobile phone use and included mobile phone operator records when available. Odds ratios (ORs) for brain tumor risk and 95% confidence intervals (CIs) were calculated using conditional logistic regression models. **Results** Regular users of mobile phones were not statistically significantly more likely to have been diagnosed with brain tumors compared with nonusers (OR = 1.36; 95% CI = 0.92 to 2.02). Children who started to use mobile phones at least 5 years ago were not at increased risk compared with those who had never regularly used mobile phones (OR = 1.26, 95% CI = 0.70 to 2.28). In a subset of study participants for whom operator recorded data were available, brain tumor risk was related to the time elapsed since the mobile phone subscription was started but not to amount of use. No increased risk of brain tumors was observed for brain areas receiving the highest amount of exposure. **Conclusion** The absence of an exposure-response relationship either in terms of the amount of mobile phone use or by localization of the brain tumor argues against a causal association.

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