



*Institute of Environmental Medicine (IMM)  
at the Karolinska institutet, Stockholm*

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**A new thesis from IEM:**

## **Mobile phone use and risk of intracranial tumors**

*We recently reported results indicating that long-term mobile phone use increases the risk of acoustic neuroma. A parallel study about mobile phone use and the risk of brain tumors does not indicate any increased risk of brain tumors in relation to mobile phone use.*

**Stefan Lönn at the Institute of Environmental medicine (IEM)** has in his thesis investigated the association between radiofrequency exposure from mobile phone use and the risk of intracranial tumors (tumors in the head).

In close collaboration with the clinics where these patients are treated all new patients with a brain tumor or acoustic neuroma (cases) were identified during a 2-3 year period in certain parts of Sweden. Persons without the disease were randomly selected from the population registry (controls). All cases and controls were contacted and asked to participate in the study. All who agreed participated in a personal interview where detailed questions were asked about mobile phone use and other issues of relevance to the study. In total, 644 brain tumor cases (glioma and meningioma), 148 acoustic neuroma cases, and 674 controls participated in the study.

For brain tumors the results did not indicate any increased risks related to mobile phone use, regardless of duration of use or amount of use. No increased risk was observed among long-term users, neither in the analyses of all brain tumor sites combined, nor in analyses restricted to only the most exposed tissue. As was previously reported, results for acoustic neuroma indicated an increased risk related to mobile phone use of at least 10 years duration, and was confined to the side of the

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head where the phone was usually held. The lack of association for brain tumors speaks against bias in the control selection or in the recall of mobile phone use among the controls, which strengthens the finding of an increased risk for acoustic neuroma.

The thesis also includes analyses of the incidence of intracerebral tumors in Denmark, Finland, Norway, and Sweden. These results show that the incidence increased after the introduction of new diagnostic tools such as Computer Tomography, whereas the period after the introduction of hand held mobile phones is characterized by a stable or somewhat decreasing incidence.

The studies on mobile phone use and cancer risk are part of the so called INTERPHONE study, an international collaboration coordinated by WHO's cancer research institute, IARC (International Agency for Research on Cancer). The Swedish results need to be confirmed in additional studies before firm conclusions can be drawn. Other centers within the INTERPHONE study where a sufficient number of long term mobile phone users can be included – primarily the Nordic – will contribute valuable data.

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