And Now ... Tinnitus

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Users of cell phones have another reason to be cautious. An Austrian team has found that the risk of developing tinnitus, a ringing in the ears, doubled after four years. This is one of the first epidemiological studies to investigate the long-term effects of mobile phones on hearing.

Hans-Peter Hutter of the Institute of Environmental Health at the Medical University of Vienna, and coworkers (including Michael Kundi) report that the observed association is "unlikely" to be spurious and could have important implications for public health. Their new epidemiological study, based on 100 cases and 100 controls, will appear in an upcoming issue of *Occupational and Environmental Medicine*.

The "possible association of mobile phone use and tinnitus is plausible," according to Hutter, "because the cochlea [the inner ear] and the auditory pathway are located in an anatomical region where a considerable amount of the power emitted by mobile phones is absorbed." The risk of tinnitus was greatest on the side of the head the phone was used. The doubling of the incidence after long-term use is of borderline statistical significance. Hutter also raises the possibility that other factors may be responsible: For instance, blood flow near the ear could be affected when the user is in a constrained posture while on the phone.

Two large European research projects, GUARD and EMFnEAR, have investigated the possible impact of cell phones on human hearing. But both have focused on short-term exposures —mostly for just 10 or 20 minutes— and have generally found no effects (see, for example, a recent paper in *Radiation Research*.) These two projects cost a total of $3-4 million.

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