

## **The evolution of hearing in young adults: the effects of leisure noise exposure, and attitudes and beliefs toward noise, hearing loss, hearing protector devices**

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### Aim

Young people expose themselves to high levels of noise during various leisure activities, and might thus be at risk of developing hearing-related problems due to leisure noise exposure. Besides cross-sectional studies regarding hearing-related problems in young adults, longitudinal studies are needed. The aim of the study was to compare hearing-related problems, leisure noise exposure, and attitudes toward noise, hearing loss and hearing protector devices in university students at the moment of their enrolment in higher education and after approximately three years.

### Material and methods:

Thirty-four female university students were tested at the moment of their enrolment in higher education and after approximately three years. Hearing was evaluated using pure-tone audiometry and transient evoked and distortion product otoacoustic emissions, in addition to a questionnaire.

### Results:

There were significant differences after the three-year period: an increase in the occurrence of temporary tinnitus after leisure noise exposure, differences in attitudes and beliefs toward noise, hearing loss and hearing protector devices, an increase in noise exposure related to visiting nightclubs and music venues, and changes in hearing. However, there were no significant differences in hearing between subgroups with decreased, similar or increased leisure noise exposure in nightclubs and music venues.

### Discussion:

More longitudinal studies are needed to evaluate the onset and progression of hearing loss due to leisure noise exposure. In the meantime, hearing conservation programs targeting young people and preferably adolescents should be optimized, hearing protector devices should be made more attractive to young people, and behavioral change should be aimed for not only at an individual's level.

### Conclusions:

There was a significant increase in the occurrence of temporary tinnitus after leisure noise exposure in young adults during a three-year period. There were also significant differences in attitudes and beliefs toward noise, hearing loss and hearing protector devices, as well as a significant increase in noise exposure related to visiting nightclubs and music venues. However, the latter could not be firmly associated with the significant deterioration of hearing thresholds, transient evoked and distortion product otoacoustic emission amplitudes.