More research needed on health effects of airborne ultrasound that's increasingly used in virtual reality tech

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Airborne ultrasound exposure guidelines from 1984 are being revisited by the International Commission on Non-Ionizing Radiation Protection
(ICNIRP) due to their use in emerging technology.

The study, "Validity of the 1984 Interim Guidelines on Airborne Ultrasound and Gaps in the Current Knowledge" is published in *Health Physics*.

Airborne ultrasound is increasingly being used in virtual reality technology to create the experience of touch. Airborne ultrasound consists of inaudible sound waves that travel through air and are mostly produced in heavy industry, for example drilling, and in commercial products like burglar alarms.

Extremely high levels of airborne ultrasound can cause ear damage, and excessive body heating that can lead to pain and burns.

ICNIRP Vice-Chair elect and Health Impact Assessment Assistant Director at the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), Associate Professor Ken Karipidis, led the review and says the current guidelines are based on limited research and further studies are needed.

"Based on the available research, the exposure limits set in the existing guidelines are still applicable today," A/Prof Karipidis said. "However, when we assessed the evidence that has been published since 1984, we found there are significant data gaps that need to be addressed before ICNIRP can publish updated exposure guidelines.

"In particular, we'd like to know more about other health effects like effects on cognitive function and behavior and non-specific symptoms such as headaches and fatigue. This is particularly relevant given the expanded use of airborne ultrasound within the wider community.

"The effect of ultrasound on the human ear can vary according to age so
it is also important for future research to determine the distribution of exposure levels where hearing damage can occur across the population."

As Australia's primary radiation protection authority, ARPANSA works with leading international health authorities like ICNIRP to develop guidelines to protect the public and the environment from the harmful effects of radiation.


Provided by Australian Radiation Protection and Nuclear Safety Agency (ARPANSA)


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