

Noise sensitivity traced to changes in brain functions

December 19 2016

The degree to which one is disturbed by noises of everyday life may be related to how the brain processes variations in the sound stream, according to new findings published in *Scientific Reports*.

Some people experience strong discomfort of sounds around them and complain that they suffer from [noise](#).

Previous studies have shown that noise sensitive individuals are more prone to negative effects of noise on health, such as sleep disturbance and heart diseases, and that sensitivity to noise may be rooted to one's genetic profile.

In the newly published work A window into the brain mechanisms associated with noise sensitivity, researchers from the University of Helsinki and Aarhus University addressed whether noise sensitivity is manifested in the way the brain processes sounds.

They showed that the auditory system of noise sensitive individuals is less responsive to new sound features introduced among repetitive sounds, especially if the novel sound is noisier than the rest.

Seeming counterintuitive at first, this finding suggests that it may be harder for [sensitive people](#) to build a prediction about changes in a varying soundscape, and their auditory system might "tune down" its responsiveness to sounds in order to protect itself from overreacting to noise.

"We need further studies to conclude whether we've discovered something that is the reason why people are noise sensitive or is it the result of the brain's contractions against [excessive noise](#). Nevertheless, this study advances the view on noise sensitivity being more than just a negative attitude to sounds and brings us new information on the physiology of environmental sensitivity," says the first author of the study, doctoral student Marina Kliuchko from the University of Helsinki.

The contribution of this study crosses boundaries of the brain science and reaches to public and occupational healthcare. The researchers hope that their work will highlight that noise sensitivity is an important issue to be recognized in planning noise control in living and working environments.

More information: Marina Kliuchko et al. A window into the brain mechanisms associated with noise sensitivity, *Scientific Reports* (2016). [DOI: 10.1038/srep39236](https://doi.org/10.1038/srep39236)

Provided by University of Helsinki

Citation: Noise sensitivity traced to changes in brain functions (2016, December 19) retrieved 24 April 2024 from <https://phys.org/news/2016-12-noise-sensitivity-brain-functions.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.