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Low-frequency noise or low-frequency tinnitus?

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Background and purpose: An increasing number of people in the south of the Netherlands complain about low frequency noise (LFN) generated somewhere in their living surroundings (N = 301; 136 Males; 165 Females). Nineteen subjects are aware that the LFN they are experiencing is a low frequency Tinnitus (LFT) while the remaining part of the group is convinced that the annoying sound is generated in the environment.

Following the neurophysiological model of Jastreboff (1990) one could say that the actual source of the sound is not causing the annoyance, it is the subjective experience of the individual which will determine whether a sound is experienced as pleasant or not. Moreover, it is usually difficult or impossible to determine the source of the sound, let alone eliminate it from the perceivers environment. This holds for all types of auditory stimuli, whether located internally or externally. Therefore it is often difficult to separate between LFN and Low Frequency Tinnitus (LFT). In the current study it is hypothesized that underlying mechanisms and as a result efficient treatment for both LFN and LFT are equal.

Methods: A service number was made available. Information was provided and callers were enabled to file complaints and make additional comments on the sounds they were hearing. All the remarks made and the complaints registered were summarized and stored for future analysis. A thorough inventory of the complaints and comments will be made in order to obtain further information about possible similarities between LFN and LFT.

Results: Results will lead to a procedure to support individuals suffering from subjective experiences of annoyance caused by LFN, based on current treatment and support for subjects suffering from tinnitus. Preliminary results seem to indicate that respondents prefer silence and are more sensitive for sounds in general. Similar results are found in individuals suffering from Tinnitus.

Discussion and conclusion: Efficient treatment and support for LFN-sufferers based on the same model used for treatment of tinnitus will lead to significant decrease in subjective annoyance-levels accompanying the LFN. Moreover, the current study might lead to new insights for future research in this area.