

Occupational Noise-Induced Tinnitus: A Review of Auditory Behavioral and Electrophysiological Evaluations

Behieh Kohansal^{1*}, Mehdi Asghari², Mahsa Habibi¹

ABSTRACT

Background and Aim: The increasing prevalence of Noise-Induced Tinnitus (NIT) is considered one of the major occupational health threats these days. Despite the devastating effect of tinnitus on a subject's performance, auditory functions and life quality, there is a lack of standard protocol for its diagnosis and management. Furthermore, the mechanisms of NIT are not clear yet. So, this review summarized data on NIT mechanisms as well as questionnaires, behavioral and physiologic assessment tools in NIT studies.

Recent Findings: Based on the authors' research, 27 eligible articles were included in this review. NIT was mainly bilateral with moderate severity with an overall prevalence ranging from 4% to 73.7%. Self-report questionnaires, tinnitus handicap inventory, auditory brainstem response, otoacoustic emissions and speech in noise tests were the most frequent NIT assessment methods in the reviewed studies. Our review highlights increased latencies in brainstem evoked potentials in tinnitus workers, but the knowledge gap about changes at subcortical and cortical levels remains.

Conclusion: This review suggests speech in noise test as a useful extension to routine tinnitus assessment by questionnaires among workers. Due to insufficient studies and inconsistent results in NIT subjects, more electrophysiological research is suggested in large and homogeneous samples.

Keywords: Noise; tinnitus; occupational; questionnaire; physiological