

STUDY OF EXTRAUDITORY EFFECTS OF INDUSTRIAL NOISE ON THE ORGANISM

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OBJECTIVE.

Evidencing the extra auditory effects of industrial noise on the organism which is a controversial problem and establishing prophylactic measures.

METHODS.

Study carried out in experimental laboratory conditions and in the industry. In laboratory there were organized exposures of 4 hours of 10 voluntary subjects making a manual part fitting, to a continuous noise of 75, 85 and 95 dB(A): without other stressing factors, sitting at table and a control experiment without noise. There were investigated in dynamics cardiovascular and neuropsychological indicators, urinary excretion of catecholamines and the productivity. In industry, study carried out at the machine tools for splintering 74 -77 dB(A), 80-82 dB(A) and 92-96 dB (A), at mechanical presses 92-107 dB(A), in weaving mill 98-102 dB(A). Cardiovascular and neuropsychological indicators were investigated at work start and end in 30-40 workers. The morbidity was analyzed regarding the diseases that may be favored by the noise in workplaces with noise of 74- 110 dB(A) and without noise in a period of 5-10 years.

RESULTS

The experimental researches showed: heart rate (HR) increase at 75 dB(A);HR. and arterial pressure (AP) increase and performance of neuropsychological indicators and of the productivity decrease at 85 dB(A); decrease of HR, AP, neuropsychological performance and productivity and increase of urinary excretion of catecholamines at 95 dB(A). At the studied *workplaces* there are *also other* factors which may have an unfavorable influence on organism's indicators. Results showed: at 80-85 dB(A) the HR and AP increased and at the noise over 90 dB(A) these indicators decreased the performance of the neuropsychological indicators decreased also and may favor the fatigue, accidents production and decrease of neuropsychological work efficiency. The arterial hypertension was in all studied workplaces, with the frequency of 4- 10% at noise and of 8-14% without noise, especially at the ages above 40 years and a seniority at noise over 10 years. There were not a gradation of the diseases which may be favored by the noise (arterial hypertension, ulcerous disease, ischemic cardiopatia, neurosis) according to the acoustic level. Subject's complaints are more frequent at above 90 dB(A): sleeplessness, headache, fatigue, nervousness.

CONCLUSIONS.

In short exposure the noise till 85 dB(A) determines a cardiovascular activation and at 95 dB(A) there is an inhibitory effect, but the urinary excretion of catecholamines increases. Above 80 dB(A) there is an inhibitory neuropsychological effect. There was not evidenced an effect regarding some diseases because of a long time action of the noise. Measures for improving the whole working conditions at the workplaces with noise are necessary.

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