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AUDITATIVE AND EXTRAAUDITATIVE EFFECTS OF NOISE AT WORKERS IN AUTOMOTIVE INDUSTRY

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The workers in automotive industry "Zastava" are exposed to the increased noise level in relation to ISO-standards on 25 % of work posts. By noise measuring on 420 imperilled workplaces, it is found out that the span interval has been between 84-105 dB. Violations of allowed noise levels were in the zones of higher frequencies from 2000-8000 Hz.

The goal of the work was examination and demonstration of injurious noise effects on a sense of hearing and on other systems at the exposed workers. The examination included 900 workers of various occupations and 200 workers of a control group. Using the method of sample stratification in all examined groups, the average age and average exposed work period was approximate. The research results showed that the hearing perception is the most jeopardized at blacksmiths and at workers on the presses where the harmfulness of hearing in the form of reciprocal acoustic trauma is found in 60-64%. The statistically significant correlation of hearing damage in relation to the exposed work period has been established. The earliest injuries of hearing have occurred after 7 years of exposed work in noise. Frequency of neurosis, hypertension, heart illness, stomach and intestine illness and disturbance in sight are 1-3 times more represented at workers exposed to noise above the permitted values than at workers in the control group, and the differences are statistically significant. On the work posts where the noise is in the allowed limits, the frequency of hearing injury and extraauditative noise effects on other organs and systems were bigger than in the control group but the differences were not statistically significant.

On the basis of performed examination it is necessary to carry out better technical protection from noise (isolation from noise at place of appearance, automation, introduction of robots etc.) with a view of putting the noise into the limits of allowed values, and obligatory wearing of personal protective clothes in order to protect health and working capability of workers in automotive industry as long as possible.

Key words: noise, audiometria, and workers (at presses and blacksmiths) audative morbidity

AUDITATIVNI I EKSTRAAUDITATIVNI EFEKTI BUKE KOD RADNIKA U AUTOMOBILSKOJ INDUSTRIJI

Radnici u automobilskoj industriji "Zasatav" su izloženi povećanom nivou buke u odnosu na ISO-standarde na 25% radnih mesta. Merenjem buke na 420 ugroženih radnih mesta konstantovano je da se interval raspona kretao od 84-105 dB. Prekoračenje dozvoljenih nivoa buke su se kretala u zonama viših frekvencija od 2000-8000 Hz.

Cilj rada je bio ispitivanje i dokazivanje štetnog dejstva buke na čulo sluha i druge sisteme kod eksponovanih radnika. Ispitivanjem je obuhvaćeno 900 radnika različitih zanimanja i 200 radnika kontrolne grupe. Metodom stratifikacije uzoraka u svim ispitivanim grupama prosečna starost i prosečni ekspozicioni radni staž je bio približan. rezultati istraživanja su pokazali da je slušna percepcija najugroženija kod kovača i presera gde su oštećenja sluha u vidu obostrane akustične traume nađena u 60-64%. Utvrđena je statički značajna korelacija oštećenja sluha u odnosu na ekspozicioni radni staž. Najranija oštećenja sluha su se javljala posle 7 god. ekspozicije rada u buci. Učestalost neuroza, hipertenzija, oboljenja srca, oboljenja želuca i creva su 1-3 puta veća kod radnika eksponovanih buci iznad dozvoljenih vrednosti nego u kontrolnoj grupi, a razlike su statistički signifikantne. Na radnim mestima gde je buka u dozvoljenim granicama, učestalost oštećenja sluha, kao i ekstraauditativni efekti buke na drugim organima i sistemima bila je veća nego u kontrolnoj grupi ali razlike nisu bile statistički značajne.

Na osnovu izvršenog ispitivanja potrebno je sprovesti bolju tehničku zaštitu od buke (izolacija od buke na mestu nastanka, automatizacija, robotizacija i dr.) u cilju svođenja buke u granicama dozvoljenih vrednosti, kao i obavezno nošenje ličnih zaštitnih sredstava kako bi što duže očuvali zdravlje i radnu sposobnost radnika u automobilskoj industriji.

Ključne reči: buka, audiometrija, radnici (kovači, preseri), oboljenja čula sluha