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Noise sources, harmful effects of noise on human health and prevention
Noise harms human health and interferes with daily activities of people.


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In workplaces where work is performed in which daily noise exposure varies considerably from one to the another day the weekly noise exposure must not exceed 85 dB (A). Appropriate preventive measures have to be taken to reduce risk of noise exposure in accordance with the work being done.

The exposure of people to noise in the process industry is particularly significant because there are many sources of noise in the process industry. Different machines produce different sounds that can interfere with the work process. Noise may have numerous and significant harmful effects on human health. Noise may affect various organ systems and lead to serious disruption of physical and mental health. Many studies of different designs have examined the connection between noise and different diseases.
Exposure to noise may be connected with increasing prevalence of cardiovascular disease.


There is a positive relationship between noise and hypertension prevalence.

The connection between noise annoyance and atrial fibrillation was found.


Noise is positively connected with heart rate in rest.

Noise may be the risk factor for ischemic heart disease.


There is a positive relationship between levels of noise and myocardial infarction.


Hypertension prevalence is reduced by 1.4% and coronary heart disease by 1.8% by 5-dB noise reduction.

Exposure to noise is connected with obesity development.


The prospective cohort study showed positive relationship between noise and incidence of diabetes.


The relationship between exposure to occupational noise and the risk of prevalent chronic obstructive pulmonary disease was found.

There is a positive relationship between occupational noise and headache/eyestrain.


There is a positive relationship between noise and sleep disturbances and attention disorders.

Noise annoyance is affected simultaneously by noise exposure level and noise sensitivity. Also, when subjects were exposed to similar noise level different level of noise annoyance was caused by different individual noise sensitivity.


There is a positive relationship between noise annoyance and prevalence of depression and anxiety.

Hearing loss induced by noise is significant.


Workers in automotive manufacturing industry revealed hearing loss. Their hearing loss was associated with their actual working age of noise exposure.

The highest prevalence of workers with any hearing impairment, and with moderate or worse impairment was in the mining sector followed by the construction and manufacturing sectors.


Workers who had hearing loss had significantly higher rates of tinnitus. For workers exposed to noise hearing conservation programs should include tinnitus management along with other noise control and hearing protection.

In preventing cochlear damage in noise-induced hearing loss oral magnesium intake may be beneficial.


Magnesium easily crosses the hematocochlear barrier. Magnesium presents neuroprotective and vasodilatory effect. Thus, magnesium may limit the cochlear damage.

Having in mind the results of the studies, the noise should be understood as a serious problem which can seriously impair the physical and mental health. Special attention should be devoted to people in process industry where exposure to noise can be significant. Sound sources and sound transmission paths should be in the focus of interest in order to adequately plan protection and preventive measures.
Noise exposure may lead to hearing loss which needs preventive and therapeutic strategies. Environmental noise exposure should be reduced ideally at the source, exposure limits should be enforced and educational campaigns would diminish negative health consequences. The results of reduced noise exposure would be lower annoyance, enhanced learning environment, improved sleep and lower prevalence of cardiovascular disease.


To preserve quality of life of workers hearing loss prevention, early detection and intervention to avoid additional hearing loss are critical.