

Respiratory health effects of metalworking fluid among metal machining workers: review article

ABSTRACT

Background: Metalworking fluids are the most common coolants and lubricants used in metal machining industry in order to protect the machine and the products. The most common form of MWF is water based MWF. During the machining process the MWF can be splashed into workers' environment and suspended as aerosols that can be inhaled by the workers into their respiratory system. Exposure to MWF can lead to serious respiratory diseases as cough, phlegm, asthma, chronic obstructive lung disease, or hypersensitivity pneumonitis. **Objective:** To review and summarize the principle of respiratory exposure to MWF among metal machining workers and the adverse health effects on respiratory system. **Method:** A survey of the literatures concern on MWF respiratory exposure, respiratory health effects of MWF, microbial contamination of water based MWF, effectiveness of permissible exposure limits of MWF and assessment of respiratory health of workers exposed to MWF were reviewed and summarized in this review paper. **Result:** Review shows, the workers in metal machining industries and handling MWF in their daily activities are at high risk of respiratory diseases due to respiratory exposure to MWF. **Conclusion:** There is a shortage in number of related studies on exposure to metalworking fluids in Malaysia.

Keyword: Metalworking fluid; Respiratory exposure; Respiratory health; Metal machining workers