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Comparative Study      Am J Ind Med. 2005 May;47(5):411-8. doi: 10.1002/ajim.20151.

## Effects of theatrical smokes and fogs on respiratory health in the entertainment industry

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### Abstract

**Background:** Theatrical fogs (glycol or mineral oil aerosols) are widely used in the entertainment industry to create special effects and make lighting visible.

**Methods:** We studied 101 employees at 19 sites using fogs and measured personal fog exposures, across work shift lung function, and acute and chronic symptoms. Results were also compared to an external control population, studied previously.

**Results:** Chronic work-related wheezing and chest tightness were significantly associated with increased cumulative exposure to fogs (mineral oil and glycols) over the previous 2 years. Acute cough and dry throat were associated with acute exposure to glycol-based fogs; increased acute upper airway symptoms were associated with increased fog aerosol overall. Lung function was significantly lower among those working closest to the fog source.

**Conclusions:** Mineral oil- and glycol-based fogs are associated with acute and chronic adverse effects on respiratory health among employees. Reducing exposure, through controls, substitution, and elimination where possible, is likely to reduce these effects.

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