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Work-related carbon monoxide overexposures resulting from proximity to operating motorboats: Lake Havasu, Arizona, 2003

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Carbon monoxide (CO) exposure assessment of municipal employees working in the Bridgewater Channel of Lake Havasu, Arizona, revealed a previously unrecognized occupational health hazard from CO exposure in the open air near motorboats. Recent evaluations found high levels of CO in the ambient air and exhaled breath of police, fire, and emergency medical personnel amid congested motorboat traffic. Air CO measurements along the Channel were in excess of all established short term exposure criteria. Full workshift CO exposure monitoring and exhaled breath CO analyses were conducted for 36 employees working in the Channel over a holiday weekend. Of the 78 workshifts involving air monitoring, 19 (24%) had exposures equal to or exceeding the NIOSH Recommended Exposure Limit (REL). 54 of 78 (69%) had short-term exposures to CO that exceeded the NIOSH ceiling limit. Of the 63 workshifts involving nonsmokers, 42 (67%) had post-shift estimated %COHb levels at or above the ACGIH Biological Exposure Index of 3.5%. Recommendations were made that addressed boat manufacturing, boating laws, enforcement, and public awareness in efforts toward decreasing the risk of unnecessary CO exposure among employees (and vacationers) in proximity to large congregations of boats.

Learning Objectives: At the conclusion of the session, the audience will be able to

- Recognize potentially hazardous outdoor boating environments with respect to carbon monoxide exposure
- Describe symptoms of carbon monoxide poisoning
- Describe sampling methods to evaluate CO exposures
- Interpret CO exhaled breath measurements with regard to risk assessment and risk management
- Discuss options for reducing open-air CO exposures from boat exhaust

Keywords: Environmental Health Hazards, Occupational Exposure

Presenting author's disclosure statement:

I do not have any significant financial interest/arrangement or affiliation with any organization/institution whose products or services are being discussed in this session.

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