CARBON MONOXIDE – HAZARD ON THE FIRE GROUND?

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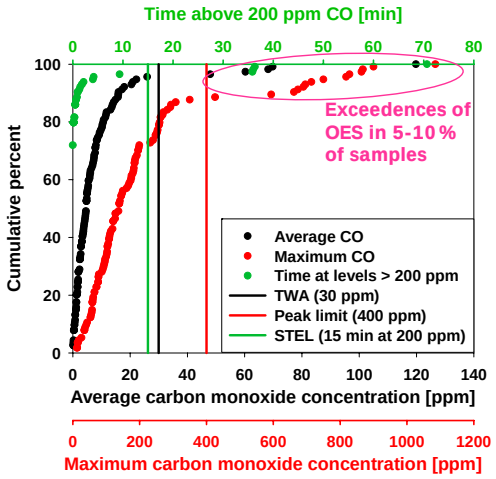
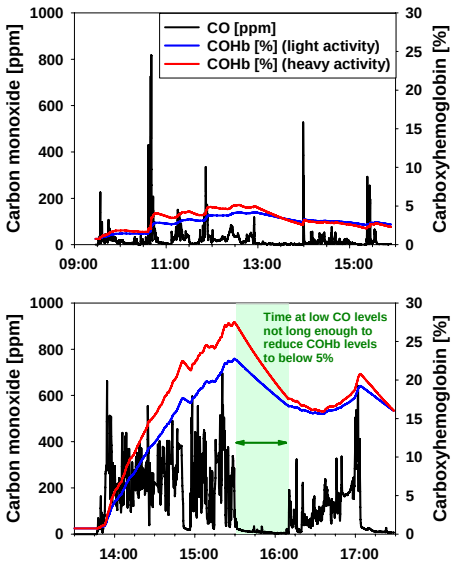
Carbon monoxide (CO) has been identified as a major air toxic in bushfire smoke. When inhaled, it forms carboxyhemoglobin (COHb), which hinders delivery of oxygen to the body. Elevated COHb levels in the blood (>5%) can cause headaches, dizziness, fatigue, confusion, disorientation, reduced reaction times and work capacity, impaired judgement, decreased vigilance, and therefore potentially pose a significant safety issue on the fire ground. Exposure to high levels of CO can also exacerbate heart or respiratory illnesses. People at higher risk include people with pre-existing heart and respiratory conditions.

How high are CO exposure levels?



What are potential COHb levels?

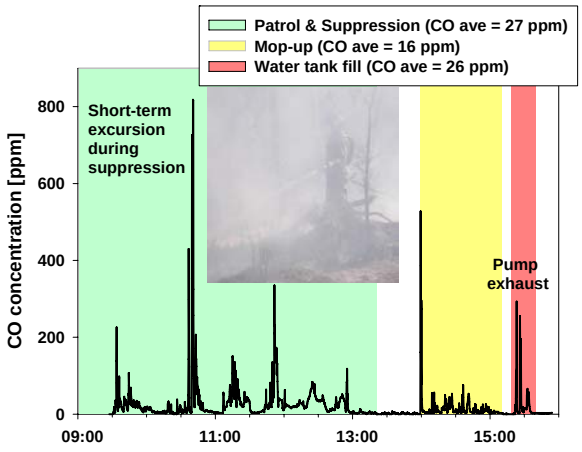


Short-term elevated peaks during suppression; moderate CO exposures overall – low risk of CO-induced symptoms (COHb < 5%)

Elevated levels over extended periods of time – high risk of CO-induced symptoms (COHb > 15%)

What causes high exposures?

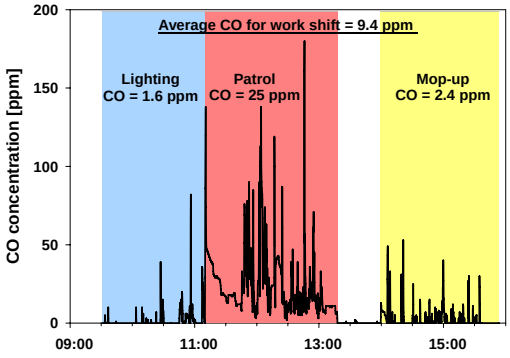
Some of the activities with high CO exposures include patrol downwind of smoke, suppression activities and pump operation



Data-logging record of firefighter's exposure to CO

How can high COHb levels be minimized?

- Task rotation
- Extended time away from smoke
- Regular monitoring of COHb levels



Data-logging record of firefighter's exposure to CO

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