

Wood Smoke Exposure Induces Inflammatory Response In Firefighters

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Biomass fuels in the form of wood and agricultural wastes are a significant source of direct human energy consumption worldwide. Household use of these fuels dominates demand in many developing countries, particularly in rural areas.

As half of the world's population still lives in rural areas, biomass fuels remain the main source of energy for most of mankind.

Furthermore, wood smoke from accidental forest fires and intentional burning of agricultural waste, forest management practices, climate change, and the rise in human population density near fire-prone areas, have resulted in several spectacular fires in southeast Asia, California, Australia and elsewhere. These long-burning fires have resulted in a growing concern about the potential health impacts of such events.

It is now well established that wood-burning stoves and fireplaces, as well as wildland and agricultural fires, emit significant quantities of known health-damaging pollutants, including several carcinogenic compounds.

In this study, Stephan van Eeden (University of British Columbia, Canada) and his colleagues demonstrate that exposure to wood smoke from forest fires elicits inflammation in the lung with resulting symptoms such as cough, sputum production and nasal congestion in young healthy seasonal forest firefighters. This lung inflammation is known to increase susceptibility to lung infections and trigger exacerbations of [asthma](#) and chronic obstructive pulmonary disease. The authors also show that this lung inflammation "spills over" into the bloodstream, and that this could activate blood vessels and trigger vascular events, such as [heart attacks](#) and [strokes](#), in susceptible subjects.

This study supports the notion that wood smoke particles and pollutants pose similar adverse health risks to those that have been documented for exposure to urban ambient particles, which predominantly come from burning of fossil fuels.

Title Of The Original Article

Wood smoke exposure induces a pulmonary and systemic inflammatory response in firefighters

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