



OCCUPATIONAL EXPOSURE AS A FIREFIGHTER

VOLUME 132

IARC MONOGRAPHS
ON THE IDENTIFICATION
OF CARCINOGENIC HAZARDS
TO HUMANS

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This publication represents the views and expert opinions of an IARC Working Group on the Identification of Carcinogenic Hazards to Humans, which met in Lyon, France, 7–14 June 2022

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IARC MONOGRAPHS

In 1969, the International Agency for Research on Cancer (IARC) initiated a programme on the evaluation of the carcinogenic hazard of chemicals to humans, involving the production of critically evaluated monographs on individual chemicals. The programme was subsequently expanded to include evaluations of carcinogenic hazards associated with exposures to complex mixtures, lifestyle factors and biological and physical agents, as well as those in specific occupations. The objective of the programme is to elaborate and publish in the form of monographs critical reviews of data on carcinogenicity for agents to which humans are known to be exposed and on specific exposure situations; to evaluate these data in terms of cancer hazard to humans with the help of international working groups of experts in carcinogenesis and related fields; and to identify gaps in evidence. The lists of IARC evaluations are regularly updated and are available on the internet at <https://monographs.iarc.who.int/>.

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About the cover: Firefighter at a wildland fire near Woss Lake, Vancouver Island, Canada. The photo illustrates the “mop-up” stage, when the active fire had been extinguished and firefighters from the British Columbia Wildfire Services had rappelled from a helicopter to the combat site.

Source: © Matthew Park

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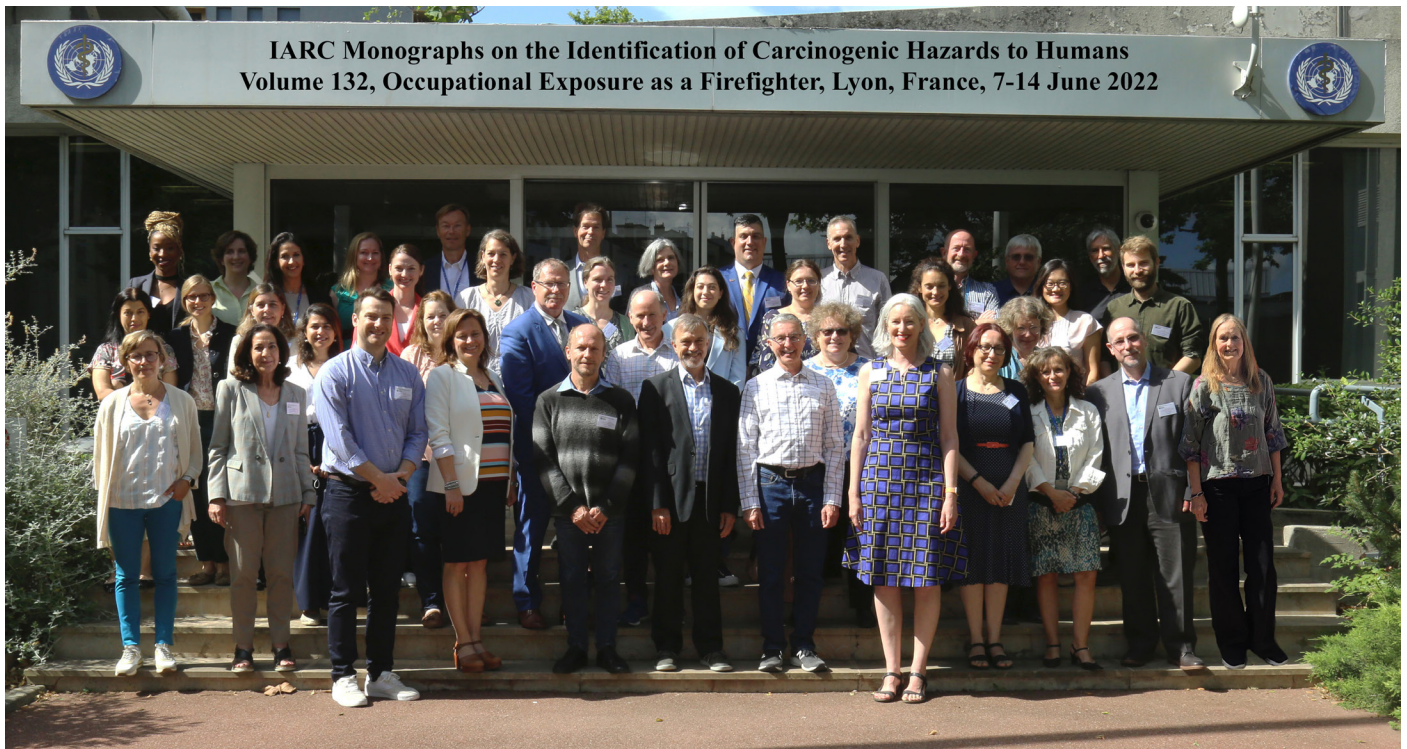
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The *IARC Monographs* Working Group and Secretariat for Volume 132, Occupational Exposure as a Firefighter, which met in Lyon, France, on 7–14 June 2022.



This volume of the *IARC Monographs* provides an evaluation of the carcinogenicity of occupational exposure as a firefighter.

Occupational exposure as a firefighter is complex and includes a variety of hazards resulting from fires and non-fire events. Firefighters can have diverse roles, responsibilities, and employment (e.g. full-time, part-time, volunteer) that vary widely across countries and change over their careers. Firefighters respond to various types of fire (e.g. structure, wildland, and vehicle fires) and other events (e.g. vehicle accidents, medical incidents, hazardous material releases, and building collapses). Wildland fires are increasingly encroaching on urban areas. Changes in types of fire, building materials, and personal protective equipment have resulted in significant changes in firefighter exposures over time.

Firefighters may be exposed to combustion products from fires (e.g. polycyclic aromatic hydrocarbons, particulate matter), building materials (e.g. asbestos), chemicals in firefighting foams (e.g. per- and polyfluorinated substances), flame retardants, diesel exhaust, as well as other hazards (e.g. night shift work and ultraviolet or other radiation).

An *IARC Monographs* Working Group reviewed evidence from cancer studies and mechanistic studies in humans to assess the carcinogenic hazard to humans of occupational exposure as a firefighter and concluded that:

- Occupational exposure as a firefighter is *carcinogenic to humans (Group 1)*.

