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Fine particulate matter and out-of-hospital cardiac arrest of respiratory origin

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Particulate matter is a potential risk factor for out-of-hospital cardiac arrests (OHCAs) of respiratory origin. The percent increase in incidence of OHCA of respiratory origin is equivalent to that of $PM_{2.5}$ exposure-related OHCAs of cardiac origin. http://bit.ly/3tDXym0

Cite this article as: Kojima S, Michikawa T, Matsui K, *et al*. Fine particulate matter and out-of-hospital cardiac arrest of respiratory origin. *Eur Respir J* 2021; 57: 2004299 [https://doi.org/10.1183/13993003.04299-2020].

To the Editor:

Exposure to ambient air pollution increases mortality and is a leading contributor to the global disease burden [1]. Epidemiological studies have elucidated a relationship between out-of-hospital cardiac arrests (OHCAs) and air pollutants, especially particulate matter (diameter $\leqslant$2.5 µm; $PM_{2.5}$) [2, 3]. The causes of OHCA are broadly categorised as cardiac and non-cardiac [4]. A 10 $\mu g \cdot m^{-3}$ increase in $PM_{2.5}$ exposure yielded a 1.6% increase in the incidence of cardiac origin OHCA [3, 5]. However, few studies on OHCAs of non-cardiac origin, including intrinsic respiratory diseases (COPD/pneumonia/asthma) are available. We examined the association between short-term exposure to $PM_{2.5}$ and bystander-witnessed respiratory origin OHCAs, including eventual prognosis. We also investigated differences between $PM_{2.5}$ exposure-related cardiac and respiratory origin OHCAs.