

Electronic cigarettes: an evaluation of exposure to chemicals and fine particulate matter (PM)

Journal Article ¹⁾

The “electronic (e-)cigarette” generates intense scientific debate about its use. Its popularity is increasing worldwide as a method to reduce/quit smoking, and to smoke indoors when restrictions on smoking tobacco are present. WHO recommends caution, until its effectiveness in helping smokers is clarified, and the possible harm evaluated.

The aim of this study was to assess the content of the aromatic liquid mixture and its vapour and the Particulate Matter (PM) emissions of an Italian brand of e-cigarette and to compare its PM emissions with a conventional cigarette.

Propylene glycol (66%) and glycerine (24%) were main components in the liquid, while the flavouring substances were less than 0.1%. The same substances were detected in the vapour in similar proportions. Fine and ultrafine PM emissions were higher for the conventional versus the e-cigarette (e.g.: PM₁₀=922 vs 52 microg/m³; PM₁=80 vs 14 microg/m³).

The e-cigarette seems to give some advantages when used instead of the conventional cigarette, but studies are still scanty: it could help smokers to cope with some of the rituals associated with smoking gestures and to reduce or eliminate tobacco consumption avoiding passive smoking. However, the e-cigarette causes exposure to different chemicals compared with conventional cigarettes and thus there is a need for risk evaluation for both e-cigarettes and passive steam exposure in smokers and non smokers.

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[Category-Efficacy](#), [Category-Health and Safety](#), [E-Cigarette](#), [Folder-E-Cigs](#), [Humans](#), [Inhalation Exposure](#), [Leans-Negative](#), [Leans-Neutral](#), [Particulate Matter](#), [RESEARCH](#), [Smoking](#)

¹⁾ Pellegrino , et al. (2012), Electronic cigarettes: an evaluation of exposure to chemicals and fine particulate matter (PM), <http://europepmc.org/abstract/MED/22913171/> accessed: 2014-02-17

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