

Suggested Uses: Aviation trade press  
Travel trade press  
Tobacco trade press  
Letters to editor

*When was  
Study made?*

**AIRLINE CABIN AIR NOT HEALTH BUT VENTILATION ISSUE**

The most extensive study of aircraft cabin air quality ever undertaken has found no health justification for banning on-board smoking.

Cabin air collected on 48 DC-9 and MD-80 commercial flights ~~did not contain levels of contamination which would cause harm.~~

*was not judge to be damaging to health.*

However relatively high concentrations of carbon dioxide, which does not result from smoking, were an indication that ventilation systems were not replacing the air as quickly as necessary to maintain air quality.

Carbon dioxide levels rise quickly in crowded areas as people breathe out, whether ~~smokers or non-smokers~~

*They are smokers or non-smokers*

"An effective ventilation system is essential for cabin air quality," concluded the study by the Center for Indoor Air Research, a US-based non-profit organisation.

**Other findings included:**

- \* Nicotine concentrations found were well below safety limits applied in working environments, approximately one-tenth of the standard set by the US Occupational Safety and Health Administration (OSHA).
- \* Carbon monoxide concentrations were about one-tenth of the standards for general indoor air set by OSHA.

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- \* Carbon dioxide concentrations were about one-fourth of the standard for the working environment but slightly above tentatively proposed new standards.

The study also found that instead of a row-by-row elimination of used air, contaminants seemed in part to drift backwards in the cabin, again pointing to inadequate ventilation systems.

The fieldwork and laboratory analyses were conducted by TNO, in the Netherlands, one of Europe's leading independent research laboratories.

Unlike previous studies, TNO had the advantage of a Portable Air Sampling System (PASS) which continuously recorded data on temperature, barometric pressure, relative humidity and respirable suspended particles (tiny material capable of being inhaled). It also collected nicotine, carbon monoxide and carbon dioxide throughout each flight.

Forty-eight commercial flights lasting more than an hour were chosen to carry four PASS units each, in Business and Tourist class, smoking and non-smoking, on seats chosen by random selection, and different in each flight.

The study concluded that the total exposure to environmental tobacco smoke - the smoke from a lit cigarette tip and exhaled smoke - was "rather small and insignificant".

Any possible long-term health effects were most likely insignificant in passengers and cabin crew with or without compromising medical conditions.

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Since even a very frequent traveller is exposed during only a small fraction of his/her time, airline cabin air most likely contributes insignificantly to the total health of indoor air pollution.

Aircraft cabin air does not have higher levels of contamination than many other indoor locations, according to the study.

The findings confirmed earlier work by Dr Larry Holcomb <sup>who is he</sup> who concluded in 1988 that measurements of ETS failed to support claims that exposure levels in aircraft affect adversely the health of non-smoking passengers or crew. The available scientific evidence did not support the banning of smoking on commercial aircraft, said Holcomb.

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SOURCE: Air Quality in Passenger Cabins of DC-9 and MD-80 Aircraft  
Environmental Technology Letters Vol 10, 1989

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