
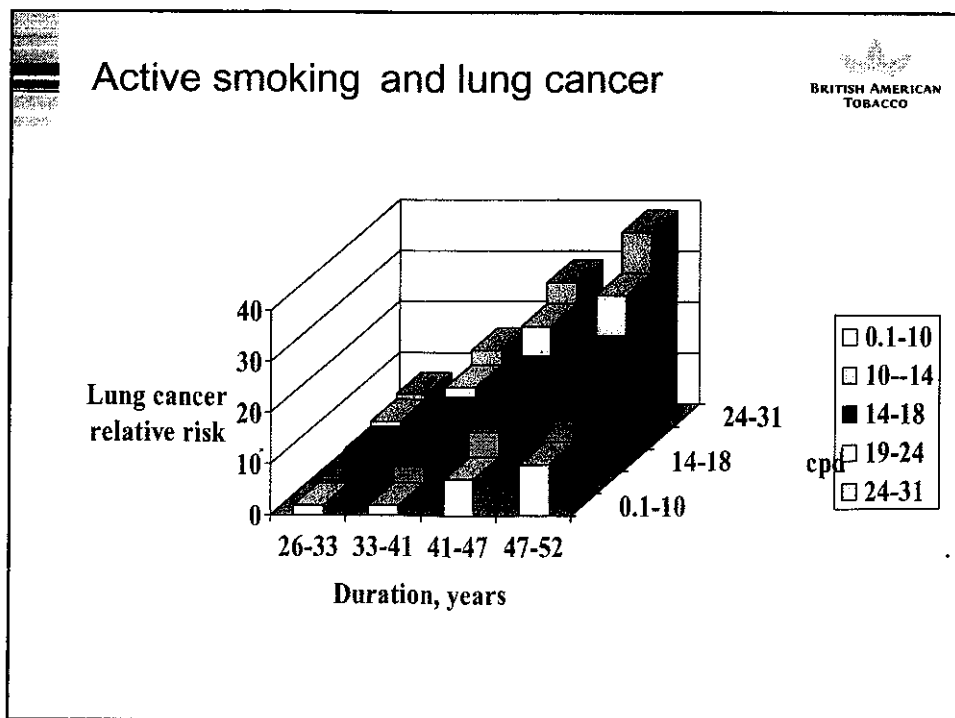



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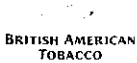
Environmental Tobacco Smoke

Chris Proctor
Head of Science and Regulation
British American Tobacco






ETS is different to active smoking




Dilute mixture of sidestream and exhaled mainstream
Chemical and physical properties different
Route of inhalation different
Exposure much lower than smoking

This is why scientists decided epidemiology was needed,
rather than extrapolations from smoking



Epidemiology on ETS



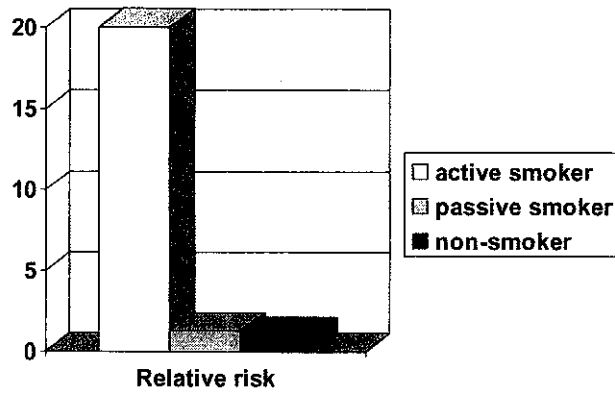
Most studies compare non-smoking women married to
smoker with non-smoking women married to non-smokers

Some look at workplaces

Little data on restaurants and bars

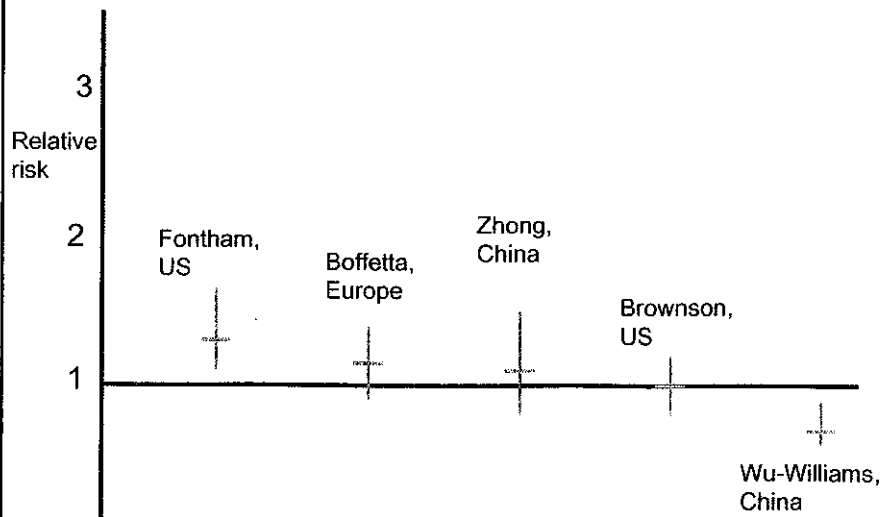
Relative risks for lung cancer


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5 largest female spousal smoking and lung cancer studies

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IARC study


Research by International Agency for Research into Cancer

IARC study was carried out in several European countries
Observed men and women and focused on lung cancer

Reported relative risks of:

- 1.16 for living with a smoker
- 1.17 for working with a smoker
- 1.14 for living and working with a smoker

IARC's 2004 Monograph reported a relative risk of 1.25



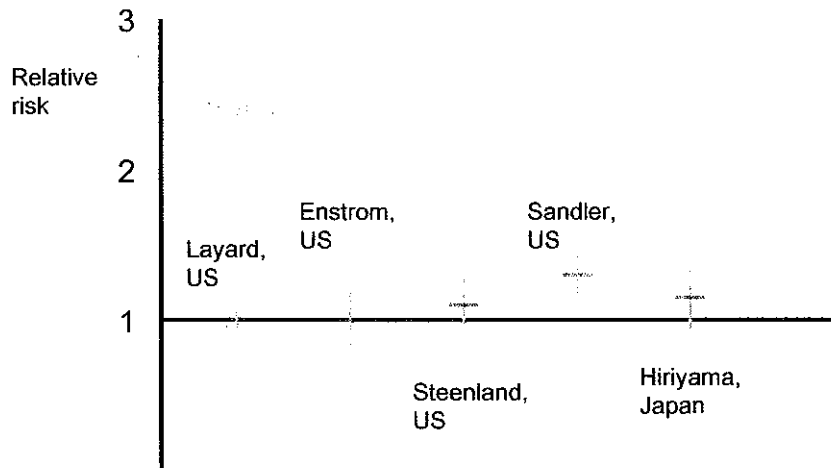
How can 25% be a small risk?

IARC reports relative risk of 1.25 for lung cancer associated with ETS exposure

| Relative risk | Absolute risk |
|---------------------------------------|--|
| Relative risk of 1.25 | 12.5 per 100,000 Versus 10 per 100,000 |
| "25% increase in risk of lung cancer" | "Increase in lung cancer incidence of 2.5 per 100,000" |

Six largest females spouse smoking and heart disease studies

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British Medical Journal

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“HAS THE HEALTH EFFECT OF PASSIVE SMOKING BEEN OVERSTATED?”

The link between environmental tobacco smoke and coronary heart disease and lung cancer may be considerably weaker than generally believed, conclude James Enstrom of the University of California, Los Angeles and Geoffrey Kabat of New Rochelle, New York, in this week's BMJ. This study will add to the already controversial debate on the health impact of passive smoking. “

Press release, British Medical Journal, May 2003



British Medical Journal

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"We must be interested in whether passive smoking kills, and the question has not been definitively answered. It's a hard question, and our methods are inadequate."

Dr. Richard Smith, editor of the British Medical Journal, *BMJ*
2003;327:505



Mortality statistics


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"There is simply no convincing evidence linking secondhand smoke to lung cancer and heart disease"


Dr Elizabeth Whelan, American Council on Science and Health, New York Post, May 16, 2003

"...she labels as "patently absurd" Mayor Bloomberg's claim that [the New York City smoking ban] would prevent 1,000 deaths of bar and restaurant workers."

New York Post, May 16, 2003



ETS is not proven to be free of health risks




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For chronic disease, if there are risks they are small and hard to measure

But ETS exposure can exacerbate asthma

And data on an increase in the incidence of respiratory illness in children associated with parents smoking is more convincing



Ventilation



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Ventilation is simply the replacement of stale air with fresh air

Ventilation can reduce particles, vapours and gases

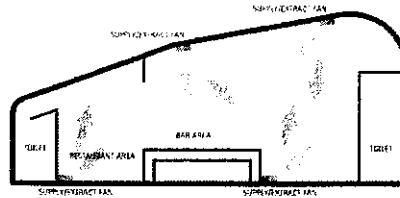
The effect of ventilation will depend on

- How clean is the fresh air
- How much
- What type

Examples of ventilation studies

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University of Glamorgan studies:



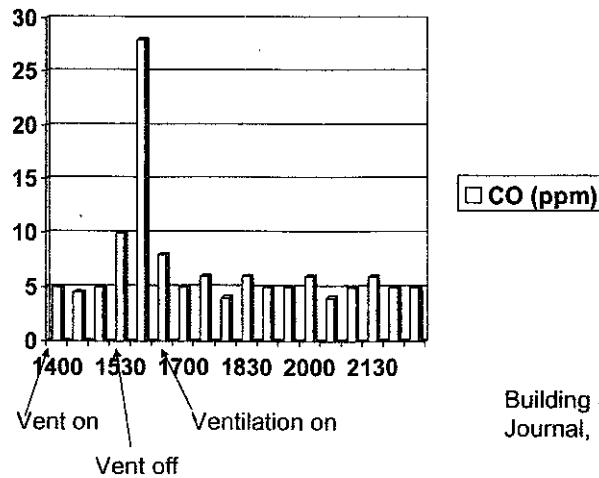
- The blue arrows indicate fresh outside air being pulled in by the supply fans
- The orange arrows show stale, smoky air being extracted from the premises.

Study in the Monageer pub reported that respirable particles and carbon monoxide was 90% higher when ventilation was switched off.

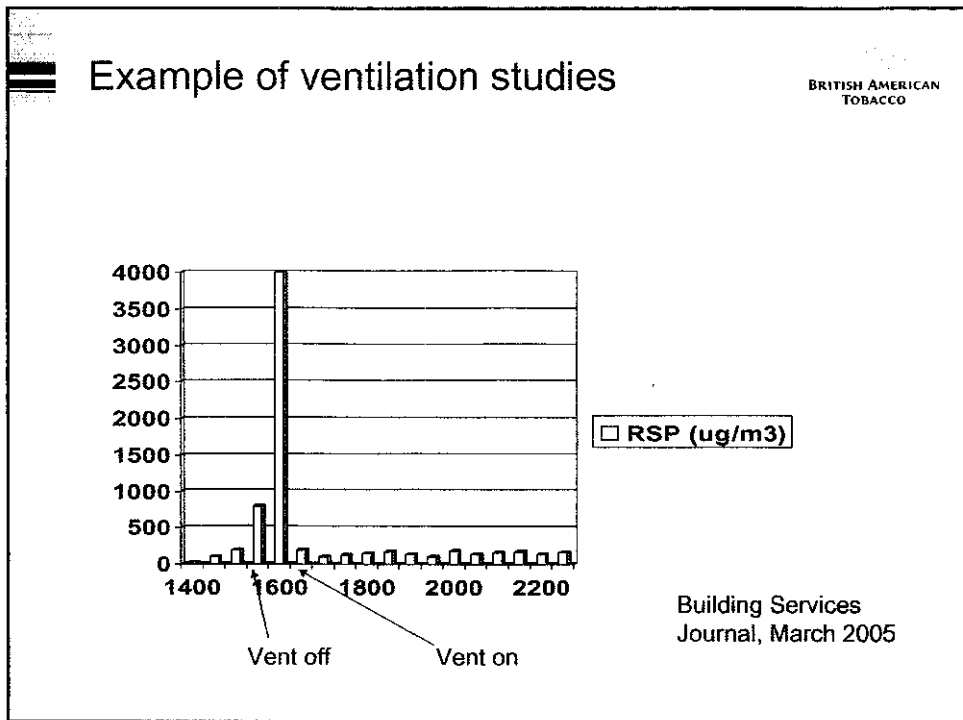
Example of ventilation studies

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The Baker Arms, Southern England



Building Services Journal, March 2005



ASHRAE view

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Currently, the only way to effectively eliminate health risk associated with indoor exposure is to ban smoking activity.

Some engineering measures may reduce that exposure and the corresponding risk to some degree while also addressing to some extent the comfort issues of odor and some forms of irritation.

Air Quality Standards

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Air Pollution Index (API) assumes a practical threshold for health risks from various air pollutants, including some constituents of tobacco smoke such as carbon monoxide .

For example, for respirable particles

Levels up to 28ug/m³ (averaged over 24 hours) are assumed to have no health effect

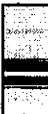
Levels between 28ug/m³ and 55ug/m³ are assumed to have no health effect on the general population, but possibly some on sensitive individuals

Levels between 55ug/m³ and 180ug/m³ thought to have no acute effects but possibly some chronic effects if exposure is long-term

US Occupational Safety and Health Administration

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“Because the organic material in tobacco doesn't burn completely, cigarette smoke contains more than 4,700 chemical compounds. Although OSHA has no regulation that addresses tobacco smoke as a whole, 29 CFR 1910.1000 Air contaminants, limits employee exposure to several of the main chemical components found in tobacco smoke. In normal situations, exposures would not exceed these permissible exposure limits (PELs)...” February 2003



BSIRA research



Currently working on research in controlled environments to assess the levels of ventilation necessary to reduce components of environmental tobacco smoke below occupational safety levels



In summary



Ventilation cannot completely remove any indoor air contaminant

Ventilation is proven to be able to significantly reduce levels of indoor air constituents, including ETS

With reasonable ventilation, constituents of ETS will typically be lower than occupational exposure safety standards