PostScript

LETTERS

Environmental tobacco smoke exposure in motor vehicles: a preliminary study

Environmental tobacco smoke (ETS) contains over 3000 chemicals of which at least 50 are known or suspected to be human carcinogens, while over 200 are regarded as poisonous.^{1,2} Although passive smoking often occurs in private and public workplaces, with extensive research already conducted in hospitality venues, casinos, airplanes, airports and homes, to our knowledge there are insufficient data (if any) published on motor vehicle secondhand smoke (SHS) levels and no comparisons have been made with other areas where people are involuntarily exposed to ETS.

Measurements of airborne respiratory particles under 2.5 µm (RSP_{2.5}) in diameter were made using the TSI SidePak AM510 Personal Air Monitor during March 2005 in Crete, Greece. Respiratory particles of this size are not specific to tobacco smoke, since background levels arising from cooking or vehicle fumes are also of this size, but elevated levels of such particles can be attributed almost solely to ETS and are used to measure it.³⁻⁵ To reduce background environmental pollution, all measurements took place in rural areas of Crete with low baseline RSP_{2.5} measurements (baseline measurements 0.013 mg/m³). During the measurements, the inlet of the machine was placed at the base of the passenger front seat headrest, approximately 0.7 m above the seat and the cigarette in the car's ashtray.

Real-time measurements were taken every 10 seconds representing the average measurements of the 10-second intervals. In each test a cigarette was left to burn inside the vehicle until it extinguished itself, usually between 10–20 minutes, depending on air circulation. In all cases all windows other than the driver's were closed, outdoor wind was not noticeable and the heating/air-conditioning fan was turned off. Weather conditions were similar during all tests.

SHS exposure was found to vary according to the vehicle's interior passenger cabin volume (PCV) and air circulation (table 1).

In all three study vehicles, SHS exposure varied according to the driver's window status. When windows were closed so as to simulate driving in a cold and/or rainy day, RSP_{2.5} levels were higher than when the

windows were left half or fully open, allowing air to circulate ($p < 0.001$). Lower RSP_{2.5} values found in the city car (with window open), compared with those of the smaller PCV utility car, could be attributed to the larger windows in the city car and therefore to larger air exchange rates. Under all other conditions and for all cars tested, RSP_{2.5} levels varied according to PCV size.

Motor vehicle SHS levels of exposure are much higher than the levels found, for example, in hospitality venues such as casinos, bars and restaurants in New York and Delaware in the United States, and in pubs and bars in the United Kingdom—up to 112 times higher than the mean levels found in the smoking areas of UK pubs and bars, and 55 times higher than the levels found in venues in Delaware, before smoking was banned.^{3,4,6}

The main limitation of our study is the fact that all measurements were taken with the car stationary, thus resembling driving with the windows closed or in very heavy city traffic. It is most likely that under normal driving conditions the measurements would differ according to air circulation, which we could not measure. Secondly, we were unable to measure mainstream smoke emitted from cigarettes, and PCV was estimated without taking into account interior seating or plastics. Even though further studies are needed to evaluate SHS exposure taking into consideration such parameters, our findings demonstrate that under the above conditions motor vehicle SHS poses a significant threat to public health.

Constantine I Vardavas, Manolis Linardakis, Anthony G Kafatos

Preventive Medicine and Nutrition Clinic, Department of Social Medicine, Faculty of Medicine, University of Crete, Heraklion, Crete, Greece

Correspondence to: Constantine I Vardavas, Preventive Medicine and Nutrition Clinic, Department of Social Medicine, Faculty of Medicine, University of Crete, PO Box 2208, Heraklion 71003, Crete, Greece; vardavas@edu.med.uoc.gr

doi: 10.1136/tc.2006.017459

REFERENCES

- 1 International Agency for Research on Cancer. Tobacco smoking and involuntary smoking. *IARC monographs on the evaluation of carcinogenic risks to humans*, vol 83. Lyon, France: IARC, 2002.
- 2 National Cancer Institute. Fact sheet on environmental tobacco smoke. 2 February 2000. http://cis.nci.nih.gov/fact/10_18.htm.

- 3 Repace J. Respirable particles and carcinogens in the air of Delaware hospitality venues before and after a smoking ban. *J Occup Environ Med* 2004;46:887–905.
- 4 Gee IL, Watson AF, Carrington J, et al. Second-hand smoke levels in UK pubs and bars: do the English public health white paper proposals go far enough? *J Public Health* 2006;28:17–23.
- 5 Invernizzi G, Ruprecht A, Mazza R, et al. Particulate matter from tobacco versus diesel car exhaust: an educational perspective. *Tob Control* 2004;13:219–21.
- 6 Travers MJ, Cummings KM, Hyland A, et al. Indoor air quality in hospitality venues before and after implementation of a clean indoor air law—Western New York. *MMWR Morb Mortal Wkly Rep* 2003;53:1038–41.

Stopping smoking: carpe diem?

A study published in *Tobacco Control*¹ reported 52% of attempts to stop smoking were unplanned and that unplanned quit attempts were more successful than planned attempts. This latter finding contradicts the traditional wisdom that many smokers fail because they do not plan adequately for their quit attempts.² Importantly, these two results have been replicated in a second study.³ The *Tobacco Control* study concluded “don’t plan dates; look for quit opportunities” and that planning quit dates “may be hindering, rather than assisting successful smoking cessation”. In contrast, the second study concluded their findings “do not necessarily imply that planning quit attempts is counterproductive”.

We believe that whether it is better to have smokers act immediately on impulses to stop smoking or to have them set a later quit date and spend time formulating a clear plan for quitting is unclear. Both of the above studies recognised that their association of impulsive quitting and increased success is based on retrospective reports of self-selected methods of quitting and could be due to confounding factors. For example, it is possible that smokers who make a spontaneous quit attempt are less dependent, more motivated smokers and it is these characteristics, not the acting on an impulse, that increases success. Both articles suggest a randomised controlled trial (RCT) is needed to clarify this. One RCT compared abrupt versus delayed smoking but both strategies involved some planning, the sample size was very small, and other confounds occurred, such that no definitive conclusions could be drawn.⁴ The optimal RCT to test abrupt versus delayed quitting may be difficult to implement in that it would need to recruit those who have made a sudden decision to quit

Table 1 Concentration of RSP_{2.5} particles (mg/m³)

Vehicle type	Fully open window	Half open window	Closed window	p Value [§]
	Mean (SD) (n)*	Mean (SD) (n)*	Mean (SD) (n)*	
Two-door pick-up utility vehicle PCV = 1.4 m ³	4.57 (1.43)†‡ (90)	4.89 (2.06)¶ (76)	12.77 (7.53) (99)	<0.001
Three-door small city car PCV = 2.5 m ³	1.33 (0.76)†‡ (82)	5.32 (3.00)¶ (86)	13.15 (6.59) (45)	<0.001
Five-door station wagon PCV = 3 m ³	5.28 (1.80)†‡ (72)	12.15 (3.63) (80)	12.37 (5.63) (68)	<0.001
Baseline measurement	0.013 mg/m ³			

*n, number of measurements; †fully open window versus half open (Mann–Whitney test, $p < 0.05$); ‡fully open window versus closed (Mann–Whitney test, $p < 0.05$); §Kruskal–Wallis test; ¶half open window versus closed (Mann–Whitney test, $p < 0.05$); PCV, passenger cabin volume; SD, standard deviation.

smoking and then quickly randomise them to either act on that decision as soon as possible or to select a later quit date and spend the intervening time planning. Nevertheless, an RCT of abrupt, unplanned versus delayed, planned quitting is greatly needed for several reasons. For example, the most common psychological treatments for smoking typically have smokers spend a few weeks preparing for quitting before their quit date.² If delaying is detrimental, this practice needs to be changed. As another example, reduction for several weeks before quitting has recently been approved as a treatment in several countries (www.ash.org.uk/html/cessation/smoking%20reduction/NRT051229.pdf). If delaying is advantageous, then perhaps much of the efficacy of reduction is due, not to reduction per se, but rather due to simply putting off the quit date till later.

In summary, we believe the findings of these two recent studies that many smokers quit spontaneously and that impulsive quitting is associated with increased success are important. We believe these data suggest clinicians should not recommend all smokers delay quitting to make plans for quitting. However, we also believe these data are insufficient to indicate that the best course for all smokers is to quit immediately. Until we have data from some RCTs, perhaps a reasonable middle ground is to discuss the pros and cons of quitting now versus later and let each smoker decide what is best.

John R Hughes

University of Vermont, Burlington, Vermont, USA

Matthew J Carpenter

Medical University of South Carolina, Charleston, South Carolina, USA

Correspondence to: John R Hughes, MD, University of Vermont, Departments of Psychiatry, Psychology & Family Practice, Ira Allen School, 38 Fletcher Place, Burlington, VT 05401-1419, USA; john.hughes@uvm.edu

doi: 10.1136/tc.2006.017863

REFERENCES

- 1 **Larabie LC.** To what extent do smokers plan quit attempts? *Tob Control* 2005;**14**:425-8.
- 2 **Abrams DB, Niaura R, Brown RA, et al.** *The tobacco dependence treatment handbook. A guide to best practices.* New York: The Guilford Press, 2003.
- 3 **West R, Sohal T.** Catastrophic pathways to smoking cessation: findings from a national survey. *BMJ* 2006;**302**:458-60.
- 4 **Flaxman J.** Quitting smoking now or later: gradual, abrupt, immediate and delayed quitting. *Behav Ther* 1978;**9**:260-70.

Clinical Evidence—Call for contributors

Clinical Evidence is a regularly updated evidence-based journal available worldwide both as a paper version and on the internet. *Clinical Evidence* needs to recruit a number of new contributors. Contributors are healthcare professionals or epidemiologists with experience in evidence-based medicine and the ability to write in a concise and structured way.

Areas for which we are currently seeking contributors:

- Pregnancy and childbirth
- Endocrine disorders
- Palliative care
- Tropical diseases

We are also looking for contributors for existing topics. For full details on what these topics are please visit www.clinicalevidence.com/ceweb/contribute/index.jsp. However, we are always looking for others, so do not let this list discourage you.

Being a contributor involves:

- Selecting from a validated, screened search (performed by in-house Information Specialists) epidemiologically sound studies for inclusion.
- Documenting your decisions about which studies to include on an inclusion and exclusion form, which we keep on file.
- Writing the text to a highly structured template (about 1500-3000 words), using evidence from the final studies chosen, within 8-10 weeks of receiving the literature search.
- Working with *Clinical Evidence* editors to ensure that the final text meets epidemiological and style standards.
- Updating the text every 12 months using any new, sound evidence that becomes available. The *Clinical Evidence* in-house team will conduct the searches for contributors; your task is simply to filter out high quality studies and incorporate them in the existing text.

If you would like to become a contributor for *Clinical Evidence* or require more information about what this involves please send your contact details and a copy of your CV, clearly stating the clinical area you are interested in, to CECommissioning@bmjgroup.com.

Call for peer reviewers

Clinical Evidence also needs to recruit a number of new peer reviewers specifically with an interest in the clinical areas stated above, and also others related to general practice. Peer reviewers are healthcare professionals or epidemiologists with experience in evidence-based medicine. As a peer reviewer you would be asked for your views on the clinical relevance, validity, and accessibility of specific topics within the journal, and their usefulness to the intended audience (international generalists and healthcare professionals, possibly with limited statistical knowledge). Topics are usually 1500-3000 words in length and we would ask you to review between 2-5 topics per year. The peer review process takes place throughout the year, and out turnaround time for each review is ideally 10-14 days.

If you are interested in becoming a peer reviewer for *Clinical Evidence*, please complete the peer review questionnaire at www.clinicalevidence.com/ceweb/contribute/peerreviewer.jsp