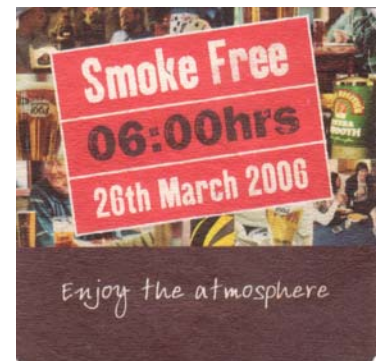


# The BHETSE study: Changes in self-reported respiratory symptoms and SHS exposure in bar workers as a result of the Scottish smoke-free legislation



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## Background

Between 1500 and 2000 non-smokers' deaths per year in Scotland are attributable to secondhand smoke (SHS) exposure<sup>1</sup>. Occupationally exposed individuals are likely at greater risk with one study suggesting 54 hospitality workers die every year in the UK as a result of their exposure to SHS<sup>2</sup>. The Smoking, Health and Social Care (Scotland) Act prohibited smoking in enclosed public and work places – including pubs, bars and restaurants – and came into force on 26th March 2006. A study of 53 bar staff in San Francisco after smoking legislation was introduced in 1998 showed significant health improvements after only a month<sup>3</sup> while the All Ireland Bar Workers' study showed a 17% reduction in respiratory symptoms at one year post-legislation, matched by a fall in non-smoking bar workers' salivary cotinine levels from 5.1 ng/ml to 0.90 ng/ml<sup>4</sup>.

## Aims

- Determine changes in bar workers' exposure to SHS.
- Examine self-reported respiratory and sensory health symptoms before smoke-free legislation and at 1-year follow-up

## Methods

- Longitudinal study of bar workers in Aberdeen, Glasgow and Edinburgh from pre-legislation to 1-year post-ban.
- 371 participants at baseline; 266 (75%) at 2 months post-legislation and 191 (51%) at 1-year follow-up.
- At all three visits participants completed a questionnaire, performed spirometry and provided a saliva sample for cotinine analysis.



## Results: exposure

- Non-smokers' geometric mean salivary cotinine level fell by 89% from 2.94 ng/ml to 0.41 ng/ml.
- Smokers also demonstrated reductions in their salivary cotinine levels of 12%.
- Workplace exposure to SHS within the last 7 days fell from 28.5 to 0.83 hours.
- Some bar workers continued to report substantial SHS exposures at work despite the legislation.

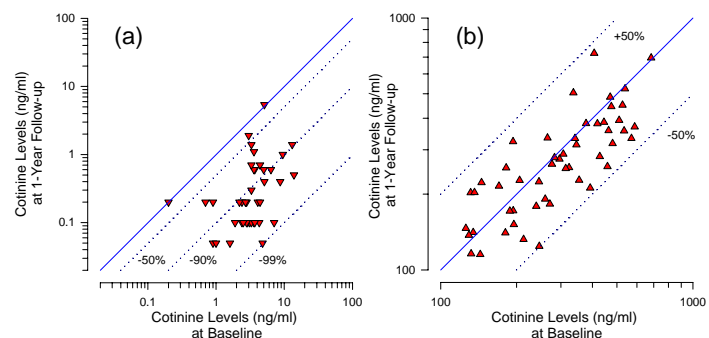


Figure 1: Comparison of salivary cotinine levels for (a) non-smokers and (b) smokers seen at baseline and 1-year follow-up. The data are presented on a log scale and the dashed lines represent the 50%, 90% and 99% reduction lines.

## Results: health

- At 1-year follow-up all respiratory and most sensory symptoms were less prevalent following reductions in SHS exposure.
- Workers with any respiratory symptom fell from 69% to 57% (p=0.02).
- Sensory symptoms reduced from 75% to 64% (p=0.02).

## Conclusions

Bar workers have experienced large reductions in their workplace exposure to SHS as a result of smoke-free legislation in Scotland. They suffer significantly fewer respiratory and sensory symptoms one year after their working environment became smoke-free. These improvements, controlled for seasonal variations, were seen in both non-smokers and smokers and indicate that smoke-free working environments may have potentially large health benefits.

## Acknowledgements

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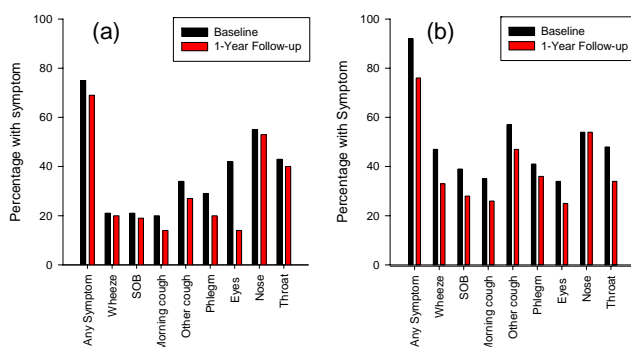


Figure 2: Percentage of bar workers reporting symptoms (a) non-smokers (b) smokers at baseline and at 1-year follow-up

## References

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