

## Smoking ban dramatically reduces air pollution in Irish pubs

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A national workplace ban on smoking in Ireland resulted in an 83 percent reduction in air pollution in pubs, an 80 percent decrease in airborne carcinogens for patrons and staff, and an improvement in the respiratory health of bar workers, according to a one-year follow-up study.

The research appears in the second issue for April 2007 of the *American Journal of Respiratory and Critical Care Medicine*, published by the American Thoracic Society.

Luke Clancy, M.D., B.Sc., Director of the Research Institute for a Tobacco Free Society in Dublin, and four associates examined the effect of the world's first national smoking ban on environmental tobacco smoke exposure in 42 Dublin pubs and among 73 male bar staff members who received pre- and post-ban lung function tests. Participants were tested prior to the March 29, 2004 national smoking ban, and again one-year later.

Among the barworkers, the self-reported workplace exposure to environmental tobacco smoke was over 40 hours per week pre-ban, but dropped to about 25 minutes post-ban, showing a 99 percent decrease in exposure.

Post-ban tests also demonstrated an 83 percent reduction in tiny particulate matter in bar air.



"These results confirm that the approach of a total ban on smoking in the workplace is successful in reducing the exposure of workers to particles," said Dr. Clancy. "We have previously shown that a reduction of particle levels in ambient air resulted in marked health benefits in terms of respiratory and cardiovascular mortality."

According to the investigators, the volatile hydrocarbon benzene was used as a marker for carcinogenic substances because cigarette smoke is a well-known source. They noted that there was an 80.2 percent reduction in benzene concentrations in pubs after the ban, having already established the ambient outdoor levels for benzene in Dublin.

Among the bar staff, pulmonary function tests improved dramatically in non-smoking barmen post-ban; the workers also showed reductions in self-reported health symptoms. In addition, the non-smoking employees demonstrated significant improvements in cough and phlegm production. Moreover, sensory irritant symptoms improved in all subgroups after the ban, although the smoking workers benefited less.

In an editorial on the research in the same issue of the journal, Fiona Godfrey, B.A., L.L.M. (Master of Laws), European Union Policy Advisor at the European Respiratory Society in Brussels, wrote:

"The article by Drs. Clancy and colleagues adds to the evidence from other studies that what smoke-free advocates have said all along is true: Comprehensive smoking bans in bars dramatically reduce the levels of fine-particulate matter, chemicals and gases in the air and improve bar workers' health."

If all European countries were to adopt a similar policy, she estimates that between 5 to 10 million premature deaths from smoking could be prevented over the next generation.



Although Dr. Godfrey admits that the impact of the Irish ban has been "enormous," she also highlights several "important caveat[s]" to the study's findings.

While the health of ex- and non-smoking barmen improved significantly, the respiratory health of smokers continued to decline, with the exception of irritant sensitivity.

"Given the known health effects of secondhand smoke exposure and the reported reduction in mean exposure from 40.5 hours pre-ban to 0.42 hours post-ban, this is a disappointing finding, especially since the reported exposure outside the workplace also decreased by 42 percent," she said.

She also noted that because the study relied on volunteers, it only involved men. Given the lack of sex-specific studies on women and occupational disease and evidence that secondhand smoke exposure levels are often underestimated in non-smoking women, she calls the absence of female subjects "unfortunate, although unavoidable."

"The significant improvement in the health of the nonsmoking bar workers is very welcome, but the findings of the study underline we still need to do much more to help smokers quit and enable them to share the benefits of smoke-free policies," Dr. Godfrey continued.

Source: American Thoracic Society

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