

factsheet no:8

Secondhand smoke

Action on Smoking and Health – March 2006

Introduction

Breathing other people's smoke is called passive, involuntary or secondhand smoking. The non-smoker breathes "sidestream" smoke from the burning tip of the cigarette and "mainstream" smoke that has been inhaled and then exhaled by the smoker. Secondhand smoke (SHS) is a major source of indoor air pollution.

What's in the smoke?

Tobacco smoke contains over 4000 chemicals in the form of particles and gases. ¹ Many potentially toxic gases are present in higher concentrations in sidestream smoke than in mainstream smoke and nearly 85% of the smoke in a room results from sidestream smoke. ² The particulate phase includes tar (itself composed of many chemicals), nicotine, benzene and benzo(a)pyrene. The gas phase includes carbon monoxide, ammonia, dimethylnitrosamine, formaldehyde, hydrogen cyanide and acrolein. Some of these have marked irritant properties and some 60 are known or suspected carcinogens (cancer causing substances). The Environmental Protection Agency (EPA) in the USA has classified environmental tobacco smoke as a class A (known human) carcinogen along with asbestos, arsenic, benzene and radon gas. ¹

How does this affect the passive smoker?

Some of the immediate effects of passive smoking include eye irritation, headache, cough, sore throat, dizziness and nausea. Adults with asthma can experience a significant decline in lung function when exposed, while new cases of asthma may be induced in children whose parents smoke. Short term exposure to tobacco smoke also has a measurable effect on the heart in non-smokers. Just 30 minutes exposure is enough to reduce coronary blood flow.

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In the longer term, passive smokers suffer an increased risk of a range of smoking-related diseases. Non-smokers who are exposed to passive smoking in the home, have a 25 per cent increased risk of heart disease and lung cancer. ⁴ A major review by the Government-appointed Scientific Committee on Tobacco and Health (SCOTH) concluded that passive smoking is a cause of lung cancer and ischaemic heart disease in adult non-smokers, and a cause of respiratory disease, cot death, middle ear disease and asthmatic attacks in children. ⁵ A more recent review of the evidence by SCOTH found that the conclusions of its initial report still stand i.e. that there is a "causal effect of exposure to secondhand smoke on the risks of lung cancer, ischaemic heart disease and a strong link to adverse effects in children". ⁶ A review of the risks of cancer from exposure to secondhand smoke by the International Agency for Research on Cancer (IARC) noted that "the evidence is sufficient to conclude that involuntary smoking is a cause of lung cancer in never smokers". ⁷ A study published in the British Medical Journal suggests that previous studies of the effects of passive smoking on the risk of heart disease may have been underestimated. The researchers found that blood cotinine levels among non-smokers were associated with a 50-60% increased risk of heart disease. ⁸

Deaths from secondhand smoke

Whilst the relative health risks from passive smoking are small in comparison with those from active smoking, because the diseases are common, the overall health impact is large. Professor Konrad Jamrozik, formerly of Imperial College London, has estimated that domestic exposure to secondhand smoke in the UK causes around 2,700 deaths in people aged 20-64 and a further 8,000 deaths a year among people aged 65 years or older. Exposure to secondhand smoke at work is estimated to cause the death of more than two employed persons per working day across the UK as a whole (617 deaths a year), including 54 deaths a year in the hospitality industry. This equates to about one-fifth of all deaths from secondhand smoke in the general population and up to half of such deaths among employees in the hospitality trades. ⁹

Risk to young children

Almost half of all children in the UK are exposed to tobacco smoke at home. ¹⁰ Passive smoking increases the risk of lower respiratory tract infections such as bronchitis, pneumonia and bronchiolitis in children. One study found that in households where both parents smoke, young children have a 72 per cent increased risk of respiratory illnesses. ¹¹ Passive smoking causes a reduction in lung function and increased severity in the symptoms of asthma in children, and is a risk factor for new cases of asthma in children. ^{12 13} Passive smoking is also associated with middle ear infection in children as well as possible cardiovascular impairment and behavioural problems. ¹⁴

Infants of parents who smoke are more likely to be admitted to hospital for bronchitis and pneumonia in the first year

of life. More than 17,000 children under the age of five are admitted to hospital every year because of the effects of passive smoking. [15](#) Passive smoking during childhood predisposes children to developing chronic obstructive airway disease and cancer as adults. [15](#) Exposure to tobacco smoke may also impair olfactory function in children. A Canadian study found that passive smoking reduced children's ability to detect a wide variety of odours compared with children raised in non-smoking households. [16](#) Passive smoking may also affect children's mental development. A US study found deficits in reading and reasoning skills among children even at low levels of smoke exposure. [17](#) For further information regarding the health risks of exposure to secondhand smoke for adults and children see the 'Going smoke-free' report by the Royal College of Physicians. [18](#)

Exposure to passive smoking during pregnancy is an independent risk factor for low birth weight.[13](#) One study has also shown that babies exposed to their mother's tobacco smoke before they are born grow up with reduced lung function [19](#) Parental smoking is also a risk factor for sudden infant death syndrome (cot death).

What protection is there for non-smokers?

A bill to ban smoking in public places and workplaces is currently being considered by Parliament. It is expected to come into effect by mid 2007. Scotland is covered by separate legislation which comes into effect from 26 March 2006. For further information see Factsheet no 14 in this series: [Smoking in workplaces and public places](#).

Reports and surveys

Public opinion surveys have shown widespread support for smoking restrictions in public places whilst support for comprehensive legislation has increased dramatically over the past 2 years. A YouGov poll commissioned by ASH and Cancer Research UK in December 2005 found that 71% of respondents across the UK said they would support a law to make all workplaces smoke-free.[20](#)

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