Information Sheet

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Passive smoking

What is passive smoking?

When a person smokes a cigarette, three different types of tobacco smoke are produced:

- **mainstream smoke** - the smoke breathed in through the burning cigarette by the smoker.
- **exhaled mainstream smoke** - the smoke breathed out by the smoker from their lungs.

These two types of smoke can contain different chemicals, because some of the compounds in the tobacco smoke stay in the smoker's body or are changed during inhalation.

- **side stream smoke** - the smoke which drifts from the end of a lit cigarette.

Environmental tobacco smoke (ETS) consists of exhaled mainstream smoke and side stream smoke. This is often called passive smoking, because people other than the smoker can breathe it in.

Passive smoking is a health hazard

Mainstream and side stream smoke both contain a larger number of chemical carcinogens and other toxic substances, but undiluted side stream smoke carries many of these compounds in far greater concentrations. The particles in side stream smoke also tend to be smaller than those of mainstream smoke, which means that they can be inhaled more deeply into the lungs.[1]

> *I'm a great believer in civil liberties, but I don't believe anyone has the right to poison someone else. A cigarette is a little toxic waste dump on fire*
> Stan Glantz (The Independent, 2001)

A wealth of scientific evidence now exists showing that the breathing of tobacco smoke polluted air by non-smokers can lead to serious harm, such as increased bronchitis, pneumonia and other chest illnesses in children, asthma, lung cancer and cardiovascular disease. This is of course in addition to the well-known irritant effects of tobacco smoke to the eyes, nose, throat and airways passages.

Assessing the evidence - the health effects of passive smoking

Until the early 1980's other people's tobacco smoke was considered to be a nuisance rather than a health hazard. A large body of worldwide research has since shown that we can no longer ignore the health hazards of passive smoking.

There have been a number of major reviews of the scientific evidence on the health effects of passive smoking.

Most important are reports from the:

- International Agency for Research on Cancer (a branch of the World Health Organisation) (1985)[2]
- US Surgeon General (1986) [1]
- Australia's National Health and Medical Research Council (1986)[3]
- Independent Scientific Committee on Smoking and Health from the United Kingdom (1988)[4]
- US Environmental Protection Agency* (1992)[5]
- Royal College of Physicians of London (1992)[6]
- National Health and Medical Research Council in Australia (1997)[7] - a new report* reviewing

the scientific research into passive smoking (see conclusions below)
- UK government's Scientific Committee on Tobacco and Health report* (1998)[8] on the impact of passive smoking
- International Consultation on Environmental Tobacco Smoke (ETS) and Child Health (1999)[9]

Those reports highlighted with an asterisk were subject to procedural litigation by the tobacco industry, which in some cases resulted in changes to the recommendations released in the final document.*

In May 2000, environmental tobacco smoke was included in a list of known human carcinogens, developed by the US National Institutes of Health. The report indicates that this listing is based on the observed causal relationship between passive exposure to tobacco smoke and human lung cancer.[10] The listing states that there are conclusive published studies that indicate increased risk of lung cancer in non-smoking women living with smoking husbands or working with smoking co-workers.

Conclusions of 1997 NHMRC report [7]

This extensive Australian review of the scientific evidence links passive smoking to many diseases, including asthma in children, lower respiratory tract illness, lung cancer, and major coronary conditions and other illnesses. As very little Australian data exists describing exposure to environmental tobacco smoke outside the home, it estimates the risk of illness from exposure to ETS at home for people who have never smoked.

This report concludes that in Australia:

- An estimated 13% of lower respiratory illness in children under 18 months (about 16,300 cases per year) is due to passive smoking
- Children exposed to ETS are about 40% more likely to suffer from **asthmatic symptoms** than those not exposed.
- About 8% of new cases of **childhood asthma** is attributable to passive smoking (about 46,500 children per year).
- It is estimated that the risk of **heart attack** or death from coronary heart disease is about 24% higher in people who never smoke but who live with a smoker, compared to unexposed people who never smoke.
- It is estimated that people who never smoke and live with a smoker have a 30% increase in the risk of developing lung cancer compared to people who never smoke and live with a non-smoker (leading to about 12 new cases of **lung cancer** and 11 deaths from lung cancer per year in people who never smoke).
- Passive smoking contributes significantly to the risk of sudden infant death syndrome.

Measuring exposure to passive smoke

Tobacco smoke is a complex mixture of gases and particles. Tobacco smoking in indoor environments increases levels of many of these, including respirable particles (particles that can be inhaled), nicotine, polycyclic aromatic hydrocarbons, carbon monoxide (CO), acrolein, nitrogen dioxide (NO2), and many other substances. How much cigarette smoke is breathed in by the non-smoker depends on a number of factors including the number of smokers in the room, how many cigarettes are smoked per hour, room size, and ventilation (the rate of exchange between the indoor air space and with the outdoor air, and the use of air-cleaning devices).[11]

Particles are most commonly used to measure indoor ETS concentration. Other, more specific markers have also been measured, including nicotine, solanesol, and ultraviolet light (UV) absorption of particulate matter. Scientists have developed models that take the factors described above into account, and use them to estimate indoor ETS concentrations, and what happens when controls such as extractor fans or air cleaners are introduced. [11]

Biomarkers of ETS

Evidence of exposure to tobacco smoke in both active and passive smokers can be found by measuring biological markers of tobacco smoke components or their metabolites (by products) in body fluids. The most commonly used, and most sensitive markers are nicotine and its metabolite, cotinine. Neither nicotine nor cotinine is usually present in body fluids unless a person has been exposed to tobacco smoke.

Levels of these markers can also be used to measure the intensity of exposure. The risks associated with passive smoking have also been estimated by comparing levels of biological markers present in the body fluids of active smokers with those of non-smokers exposed to ETS.

Because nicotine stays in the body for a shorter time, nicotine concentrations in body fluids measure more recent exposures. Cotinine stays in the blood or plasma significantly longer, and so its presence provides information about more chronic (longer term) exposure to tobacco smoke in both active and passive smokers.[12]

Passive smoking and the Tobacco Industry

Passive smoking is an important (and problematic) issue for the tobacco industry.

> *What the smoker does to himself may be his business, but what the smoker does to the non-smoker is quite a different matter….This we see as the most dangerous development yet to the viability of the tobacco industry that has yet occurred.*[13]

The tobacco industry have consistently mounted legal challenges to delay and modify publication of documents revealing the scientific evidence relating to the health effects of passive smoking. For instance, in the 1990s, Philip Morris mounted a multi-million-dollar campaign to undermine a study on the dangers of ETS, undertaken by the International Agency for Research on Cancer. The campaign was targeted at researchers, the media, and government. Its aims were as follows:

1. Delay the progress and/or release of the study.
2. Affect the wording of its conclusions and official statement of results.
3. Neutralize possible negative results of the study, particularly as a regulatory tool.
4. Counteract the potential impact of the study on governmental policy, public opinion, and actions by private employers and proprietors.[14]

(Philip Morris, 1993)

The passive smoking issue involves non-smokers in the smoking issue, with the potential for a push for legislation for smoke-free areas. Wherever such legislation is under discussion, there has been vocal opposition, often by groups closely associated with the tobacco industry.

> *The first is legislation. Over the past dozen or so years we have faced more than 1,000 public smoking bills and have defeated more than 90 percent of them. Those we have defeated are typically reintroduced year after year, often redrafted to accommodate legislators' objections. …. The Institute - as a matter of policy and practice - is organised to aggressively oppose legislation of this sort. The second category is litigation. Compared to legislation, relatively little has occurred here....The third category is the voluntary restriction of smoking by organizations.*[15]
> (Tobacco Institute, undated)

Another tactic has been to 'muddy the waters' with regard to the scientific evidence, by recruiting scientists to dispute the findings of studies.

> *Philip Morris presented to the UK industry their global strategy on environmental tobacco smoke. In every major international area…they are proposing, in key countries, to set up a team of scientists organised by one national co-ordinating scientist and American lawyers, to review scientific literature or carry out work on ETS to keep the controversy alive. They are spending vast sums of money to do so.*[16] (Philip Morris, 1988)

More information about tobacco industry tactics can be found by looking at *Trust us, we're the tobacco industry* by Ross Hammond and Andy Rowell
http://www.ash.org.uk/html/conduct/html/trustus.html

Ventilation as a solution to passive smoking exposure

Some misinformation surrounding passive smoking still occurs, including the belief that ventilation eliminates passive smoking. The tobacco industry and their associates push this solution.

In areas where smokers are isolated from non-smokers, physical barriers must be complete, and smoking areas must have a separate ventilation system if they are to be effective as a control option. Although the best ventilation, and most effective air cleaning may lower levels of environmental tobacco smoke, air cleaning systems do not prevent pockets of high concentrations of ETS developing, especially in areas of heavy smoking such as bars or nightclubs.

An analysis of the 'Proceedings of the workshop on ventilation engineering controls for environmental tobacco smoke in the hospitality industry', by international passive smoking expert James Repace[17] concluded that

> *…dilution ventilation, used in virtually all mechanically ventilated buildings, will not control secondhand smoke in the hospitality industry (eg restaurants, bars, casinos). The panelists asserted that a new and unproved technology, displacement ventilation, offered the potential for up to 90% reductions in ETS levels relative to dilution technology. However, this assertion was not substantiated by any supporting data.*

Mr Repace is adamant that smoking bans are the only suitable method of controlling exposure to ETS.

> *Although there is a scientific consensus that ETS is a known cause of cancers, cardiovascular diseases, and respiratory diseases, although ETS contains 5 regulated hazardous air pollutants, 47 regulated hazardous wastes, 60 known or suspected carcinogens, and more than 100 chemical poisons, the tobacco industry denies the risks of exposure, opposes smoking bans, promotes ventilation as a panacea for ETS control, and works for a return to laissez-faire concerning smoking in the hospitality industry. Smoking bans remain the only viable control measure to ensure that workers and patrons of the hospitality industry are protected from exposure to the toxic wastes from tobacco combustion.*

Passive smoking in the courts

(More information about this can be found in our information sheet Tobacco and the Law. For a list of legal cases on passive smoking, see NSW

Cancer Council publication *When smoke gets in your eyes…nose, throat, lungs and bloodstream* [18] http://www.nswcc.org.au/cncrinfo/cncrsmrt/tobasmok/resource_index.htm)

The Morling judgement:

The Australian Federation of Consumer Organisations Inc v Tobacco Institute of Australia Ltd [19]

In February 1991 Justice Trevor Morling of the Federal Court of Australia delivered a landmark ruling on passive smoking. The case was brought by the Australian Federation of Consumer Organisations challenging a Tobacco Institute of Australia advertisement which claimed that "...there is little evidence and nothing which proves scientifically that cigarette smoke causes disease in non-smokers".

Justice Morling's judgement determined that the statement was misleading and deceptive and in breach of the Trade Practices Act. Morling's judgement also validated research findings already accepted by medical science and gave important judicial recognition to the fact that passive smoking is a risk to health.

He concluded that:

> *"...there is compelling scientific evidence that cigarette smoke causes lung cancer in non-smokers..."*
> *"...there is overwhelming evidence that passive smoking causes some people to experience attacks of asthma..."*
> *"No rational basis...for the holding of an opinion that there is little evidence and nothing which proves scientifically that cigarette smoke causes attacks of asthma."*

The Tobacco Institute of Australia instigated an appeal against the Morling judgement. A full bench of the Federal Court subsequently upheld the Morling ruling that the advertisement disputing the evidence about passive smoking was indeed misleading or deceptive and the appeal was lost. None of Justice Morling's findings on the evidence that passive smoking causes disease were overturned on appeal. [20] , [21]

Legal actions by individuals

There have been a number of cases in Australia in which compensation has been awarded due to discomfort or disease caused by ETS. Complaints have variously attributed irritation of the eyes, nose and throat, allergy, headache, nausea, decreased lung function, chronic airways disorders, lung cancer and emphysema to passive smoking.

Most of these cases have been settled out-of-court. Payouts which have been disclosed to date include the $65,000 paid out-of-court in July 1988 by the Melbourne Metropolitan Transit Authority to Mr Sean Carroll, a bus driver who developed lung cancer after 36 years passive exposure to tobacco smoke, and the $85,000 awarded to Mrs Liesel Scholem in May 1992. Mrs Scholem was awarded damages by the NSW Department of Health in a case heard before the NSW District Court. This was the first Australian passive smoking case to be decided in a full court hearing, and publicity following the decision resulted in many major workplaces, and Australian airports announcing that they would become smoke free. [22]

More recently, a Melbourne woman successfully sued a restaurant for breach of contract. [23] She had an asthma attack when cigarette smoke drifted into the non-smoking area where she was sitting. In May 2001, Marlene Sharp, a non-smoking bar worker was awarded $450,000 when she sued a NSW RSL club for common law damages relating to her throat cancer, which she asserted was due to passive smoking. [24] A Melbourne teacher also received a substantial out of court settlement for damages relating to his chronic lung condition. [25] He asserted that the aggravation of his existing condition was due to years of exposure to passive smoking in school staff rooms.

Smoke-free areas

These cases increase the pressure on both public places and workplaces to provide a smoke-free environment. Increasing amounts of successful litigation mean increases in insurance premiums for workplaces (such as pubs and clubs) where both employees and patrons can be exposed to passive smoking.

Where they have been implemented, measures to eliminate tobacco smoking in the indoor environment have proven to be effective and acceptable in Australia.

Since the 1986 NHMRC report and the Morling judgment, restrictions on smoking have been introduced in the majority of large office buildings, in public places such as theatres and cinemas, shopping centres and on public transport.

Over the past decade in South Australia, more and more public areas have become voluntarily smoke-free. These include all major sporting and arts venues, major shopping centres and public transport.

New South Australian legislation was passed in October 2004, amending the Tobacco Products Regulation Act. Previously, this legislation banned smoking in enclosed public dining areas, and came into effect in Jan 1999. Exemptions to this ban have now been removed. Follow-up surveys have found high levels of public acceptance and compliance, and similar legislation has been implemented in most other states

The new legislation introduces phased smoking bans in pubs and clubs, including gaming areas,

which began on Dec 6 2004, with a total ban by Oct 2007.

(A summary of Australian tobacco related legislation can be viewed via the ASH Australia website http://www.ashaust.org.au)

In accordance with their responsibilities under Occupational Health and Safety legislation, many employers have smoke-free policies in the workplace. Employers' duty of care to their employees extends to providing, as far as possible, a working environment that is free from hazards to health for employees and others entering their premises. Employees also have a duty to look after their own health and safety in the workplace, and to avoid affecting the health of others in the workplace.

In Oct 2003, the National Occupational Health and Safety Commission released a new Guidance Note on Environmental Tobacco Smoke, which recommends that ETS exposure '...should be excluded in all Australian workplaces. [and]...implemented as soon as possible.'
[See NOHSC Guidance Note 3019 (2003) http://www.nohsc.gov.au]

The new SA legislation also includes a requirement for all enclosed workplaces (apart from pubs and clubs) in SA to be smoke-free from December 2004.

Economic impact of smoke-free environments

Ever since the introduction of smoke-free areas, there have been concerns raised about the economic impact of such policies. The hospitality industry has been particularly vocal in this regard. However, no credible, scientific evidence exists to support these claims. In some areas, increased patronage has occurred after the introduction of smoke-free areas.
(See the Smoke-Free Environments Law Project at http://www.tcsg.org/sfelp/home.htm for more detail.)
Surveys conducted after the introduction of smoke-free dining in South Australia, suggest that, people are dining out more frequently than before the bans were introduced. [26]

Public awareness and support

South Australians' smoking status, exposure to passive smoke and beliefs about active and passive smoking are monitored in the yearly Health Omnibus Survey which asks questions about a wide range of health issues. These surveys show consistent support for increasing smoke-free areas, as well as growing concern about the possible health effects of passive smoking. Awareness has increased over time and the majority of smokers and non-smokers believe that passive smoking is harmful to health.

In the 2002 Health Omnibus Survey [27] the key findings related to passive smoking were that:

- 88% of the sample (82% of smokers) agreed that passive smoking causes illness and/or damage to the body, with lung cancer being the most commonly mentioned health effect of passive smoking.
- Most South Australians (70%) are concerned about passive smoking, and 67% reported being exposed to someone else's cigarette smoke in the previous 2 weeks. The most exposure to passive smoking occurred in hotels and bars.
- Rates of exposure to passive smoking in the workplace have declined since 2000 [28], with 7% of workers still being exposed at work. Exposure remains the highest among workers in hospitality venues (31%), followed by home-based workers (17%), people working in stores and warehouses (14%) and workers in workshops and factories (12%).
  Almost all South Australians (99%) prefer some smoking restrictions at work.
- Rates of smoke-free homes and cars have continued to improve in South Australia compared to 2000, with 81% (77%) of homes and 83% (80%) of private cars being smoke-free.
- A 2002 study [29] has shown strong support in South Australia for smoking bans in hospitality venues. For all venue types, more than 70% of those surveyed said they would approve if the government banned smoking in drinking areas in hotels and bars, gaming venues and nightclubs.

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[25] Teacher wins passive smoking payout. July 27, 2001 Adelaide Advertiser, p2.

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Other useful web links

Quit SA www.quitsa.org.au

OxyGen www.OxyGen.org.au

Ash Australia www.ashaust.org.au

National Public Health Partnership Legislators Toolkit for National response to passive smoking in enclosed workplaces and public places
www.dhs.vic.gov.au/nphp/workprog/lrn/legtools.htm

National Health & Medical Research Council
The health effects of passive smoking
www.health.gov.au/nhmrc/publications
see Titles>Health promotion

Australian Legal Information Institute
www.austlii.edu.au
for access to Australian legislation, cases etc

Commonwealth Dept of Health & Ageing
www.health.gov.au/pubhlth/strateg/drugs/tobacco
see under Resources for
Environmental Tobacco Smoke in Australia (National Tobacco Strategy Occasional Paper, May 2001)

US National Cancer Institute Smoking and Tobacco Control Monograph 10: Health effects of exposure to environmental tobacco smoke
http://cancercontrol.cancer.gov/tcrb/monographs/10/index.html

Smoke-free environments law project
www.tcsg.org/sfelp/home.htm

Ash UK
www.ash.org.uk
see Health evidence>Passive smoking

Tobaccopedia
www.tobaccopedia.org

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