

HEALTH HARMS OF SECONDHAND SMOKE

"The evidence is clear. There is no safe level of exposure to second-hand tobacco smoke. Many countries have already taken action. I urge all countries that have not yet done so to take this immediate and important step to protect the health of all by passing laws requiring all indoor workplaces and public places to be 100% smoke-free."

Dr. Margaret Chan, Director-General, World Health Organisation, May 29, 2007.

- Secondhand smoke (also referred to as involuntary smoking, environmental tobacco smoke, and passive smoking) is a complex mixture of more than 4,000 chemical compounds, including 69 known carcinogens¹. These chemicals are released into the air as particles and gases. The particulate phase of cigarette smoke include nicotine, "tar" (itself composed of many chemicals), benzene and benzo(a)pyrene. The gas phase includes carbon monoxide, ammonia, dimethylnitrosamine, formaldehyde, hydrogen cyanide and acrolein.²
- The scientific evidence on the health risks associated with exposure to secondhand smoke is clear, convincing, and overwhelming. Secondhand smoke is a known cause of lung cancer, heart disease, low birth-weight births, and chronic lung ailments such as bronchitis and asthma (particularly in children).
- Overwhelming scientific evidence concludes that there is no safe level of exposure to secondhand smoke.

Secondhand smoke causes death, disease, and disability

- Article 8.1 of the Framework Convention on Tobacco Control (FCTC) states that "scientific evidence has unequivocally established that exposure to tobacco smoke causes death, disease and disability".³
- A 2002 report by the World Health Organization's International Agency for Research on Cancer (IARC) concluded that secondhand smoke causes lung cancer, heart disease and other health problems.⁴
- The Surgeon General's 2006 Report on The Health Consequences of Involuntary Exposure to Tobacco Smoke confirmed that secondhand smoke causes cancer, heart disease and serious lung ailments. As former Surgeon General Richard Carmona stated when releasing the report, "The debate is over. The science is clear. Secondhand smoke is not a mere annoyance but a serious health hazard."⁵
- In January 2005, the U.S. Public Health Service's National Toxicology Program issued its 11th *Report on Carcinogens*, which unambiguously states:

"Environmental tobacco smoke is known to be a human carcinogen based on sufficient evidence of carcinogenicity from studies in humans that indicate a causal relationship between passive exposure to tobacco smoke and lung cancer. Many epidemiological studies, including large population-based case-control studies, have demonstrated

increased risks for developing lung cancer following prolonged exposure to environmental tobacco smoke.”⁶

- A 2004 study published in the *British Medical Journal* found that exposure to secondhand smoke increases the risk of heart disease among non-smokers by as much as 60 percent.⁷
- In Scotland, between 1500 and 2000 nonsmoker's deaths per year are attributable to secondhand smoke exposure.⁸
- A pooled analysis of two large European and American studies found that exposure to secondhand smoke from spousal, workplace and social sources results in a 22 percent increased risk of lung cancer in people who never smoked. Those with the longest exposure had an increased risk of 32 percent.⁹
- A Japanese study concluded that wives of heavy smokers had up to twice the risk of developing lung cancer as wives of non-smokers.¹⁰
- Separation of smokers and nonsmokers within the same airspace does not eliminate the serious health effects of secondhand smoke. ASHRAE, the leading U.S. association of ventilation professionals, has concluded that ventilation technology is incapable of removing all the harmful elements of secondhand smoke.¹¹

Secondhand smoke harms workers

- Exposure to secondhand smoke in the workplace is estimated by the International Labor Organization to cause approximately 200,000 deaths per year worldwide.¹²
- A 2006 review in the *European Respiratory Journal* estimated that 7.5 million workers in the EU are exposed to secondhand smoke at work.¹³
- Prior to the introduction of smokefree legislation in England, Scotland, Wales and Northern Ireland, 54 hospitality workers died every year as a result of exposure to secondhand smoke.¹⁴
- A study in Leicestershire, England found non-smoking bar staff had levels of carbon monoxide equivalent to smoking 3-5 cigarettes a day.¹⁵
- Data from New Zealand indicates that nonsmoking hospitality workers in establishments that allow smoking have cotinine levels between 3 and 4 times those of nonsmoking workers in smokefree establishments.¹⁶
- An investigation by the British Broadcasting Company (BBC) tested bar staff prior to England's smokefree ban in 2007, and found that they had cotinine levels which were the equivalent of smoking 300 cigarettes a year.¹⁷

Secondhand smoke harms children and pregnant women

- Approximately 700 million children – nearly half of all children in the world – are regularly exposed to secondhand smoke,¹⁸ increasing their risk of developing asthma and increasing the frequency and severity of attacks in those with asthma.¹⁹

- Children exposed to secondhand smoke are at an increased risk for sudden infant death syndrome (SIDS), acute respiratory infections, ear problems, and more severe asthma.²⁰
- Numerous research studies have found that smoking and exposure to secondhand smoke among pregnant women is a major cause of spontaneous abortions, stillbirths, and sudden infant death syndrome (SIDS) after birth.²¹
- A June 2001 study published in the journal *Pediatrics* found that exposure to secondhand smoke through the mother in utero was associated with increased rates of hospitalization in infants with non-smoking mothers, and that use of tobacco products by household members has an “enormous adverse impact” on the health of children.²²

¹ This section is largely based from a document prepared by Action on Smoking and Health/United Kingdom entitled, *Fact Sheet No. 12, What's In A Cigarette?* August 2001. Available online at:

http://newash.org.uk/files/documents/ASH_117/ASH_117.html. Accessed 11.10.2007

- National Cancer Institute. Risks Associated with Smoking Cigarettes with Low Machine-Measured Yields of Tar and Nicotine. Smoking and Tobacco Control Monograph No. 13. Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, National Cancer Institute, NIH Pub. No. 02-5074, October 2001.

- Hoffman D, Hoffman I (2003). The Changing Cigarette: Chemical Studies and Bioassays.

http://dccps.nci.nih.gov/tcrb/monographs/13/m13_5.pdf. Chapter 5 of NCI Monograph 13 October 28, 2003,.

Clarification: Table 5.4 of the Monograph (that lists the 69 carcinogens) is missing a carcinogen, namely MeAaC (2-amino-3-methyl-9-*H*-pyrido[2,3-*b*]indole, which should be inserted under “under “Miscellaneous Organic Compounds”.

² For a complete list of the carcinogens in tobacco smoke, see National Cancer Institute (2001). Risks associated with Smoking Cigarettes with Low Machine-Measured Yields of Tar and Nicotine. Smoking and Tobacco Control Monograph No. 13, Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, National Cancer Institute, NIH Pub. No. 02-5074, October 2001. Available online at:

http://dccps.nci.nih.gov/tcrb/monographs/13/m13_5.pdf. See, also Health Harms from Secondhand Smoke. A Factsheet from the Campaign for Tobacco-Free Kids. Available online at:

<http://tobaccofreekids.org/research/factsheets/pdf/0103.pdf>. Accessed on 11.10.2007

³ The World Health Organization, 2003. WHO Framework Convention on Tobacco Control. Available online at:

<http://www.who.int/tobacco/fctc/text/final/en/>. Accessed 11.10.2007

⁴ World Health Organization, International Agency for Research on Cancer. Tobacco Smoke and Voluntary Smoking. Monograph Series, Volume 83. Available online at:

<http://monographs.iarc.fr/ENG/Monographs/vol83/volume83.pdf>. Accessed 11.10.2007

⁵ U.S. Department of Health and Human Services. *The Health Consequences of Involuntary Exposure to Tobacco Smoke: A Report of the Surgeon General*. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2006. Available online at: <http://www.surgeongeneral.gov/library/secondhandsmoke/report>. Accessed 11.01.07

⁶ National Toxicology Program, Public Health Service, U.S. Department of Health and Human Services (HHS) (2005). Report on Carcinogens. Eleventh Edition, January 2005. Available online at:

<http://ntp.niehs.nih.gov/ntp/roc/eleventh/profiles/s176toba.pdf>. Accessed on 11.10.2007

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