



Smoking in the workplace

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Abstract – ‘Smoking in the Workplace’

Smoking has been with us for thousands of years. It is estimated that over 1 billion people smoke throughout the world. The products of tobacco smoke are addictive and carcinogenic. Clever advertising and promotion have seen a continuation of smoking despite evidence over time as to the effects on health and mortality. Health authorities are becoming aware of the disparity in costs of caring for smokers compared with non-smokers. The tangible and intangible costs for employers are discussed. The term passive smoking is discussed. Environmental Tobacco Smoke doesn't discriminate between smokers and non-smokers and the latter are falling victim to tobacco related diseases. Organisations such as the World Health Organisation have passed resolutions to protect present and future generations from the effect of tobacco smoke. The United Nations and other International organisations have been called upon to support tobacco control programs. In Australia, a number of initiatives have commenced, including smoke-free enclosed public places, the promotion of smoke - free workplaces and bans on smoking in pubs and clubs.

SMOKING IN THE WORKPLACE

Early Days

“Smoking of tobacco is practiced worldwide by over one thousand million people.”¹

The growing of tobacco was recorded as early as 6000 BC in the Americas, the Americas, being the area, covered by the Caribbean and Central America. The Mayan civilisations of were known to have chewed and smoked tobacco. Evidence of smoking was exhibited in samples of pottery artifacts recovered by archaeologists²



www.ramshornstudio.com/

“Tobacco-producing plants are derived from the genus *Nicotiana* of the nightshade family. Other well-known nightshades in the service of mankind include food plants like potato, tomato, pepper, and eggplant; hallucinogens like thorn apple, mandrake, henbane, and belladonna; and several garden ornamentals like petunia, which derives its name from the Tupian designation *petún* for tobacco, the most notorious nightshade of them all.”³

“Not all *Nicotiana* species produce nicotine in large amounts, or even at all. The two species that have achieved widest dissemination as intoxicants are *Nicotiana Rustica* and *N. Tabacum*.”³

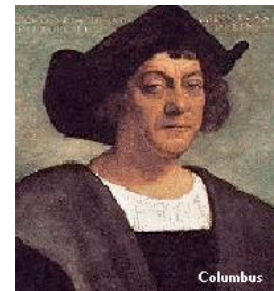


“In honor of Jean Nicot, the consul of the king of France, who in 1560 had sent tobacco from Portugal to Paris, Hermbstädt [1822] called the *causa efficiens* of nicotianas “Nicotianin” and found it present--for the first time--in tobacco smoke and rapé.”³

Christopher Columbus in 1492 visited the Americas.

Library.thinkquest.org/C007974/media/1_1tab.jp

Rodrigo de Jerez, a contemporary of Columbus has been recorded as being the first European to smoke tobacco. On his return to Spain, de Jerez was arrested and jailed for smoking in public.



Columbus

During the 16th century, Portuguese traders began planting tobacco at their various trading posts. British aristocracy adopted pipe smoking as a popular pastime. The increasing demand led to the plantations in the English colonies in North America. The Virginia tobacco created a substantial and profitable English market.

www.academic.brooklyn.cuny.edu

Smoking and Health

Jean Nicot, the French Ambassador to Portugal, in a letter to Catherine de Medici, the queen of France extolled the medicinal value of tobacco. Monardes, a Spanish doctor listed 36 maladies tobacco cures including toothache, worms, lockjaw and cancer.⁴

In 1604, King James 1 of England issued his “counterblast to tobacco” in it he described “loathsome to the eye, hatefull to the nose, harmful to the brain, dangerous to the lungs” he found it good for taxes and increased the tax by 4000%. He later reduced the amount. The working class took up pipe smoking and the aristocracy adopted snuff.



A Pinch of Snuff - 1750

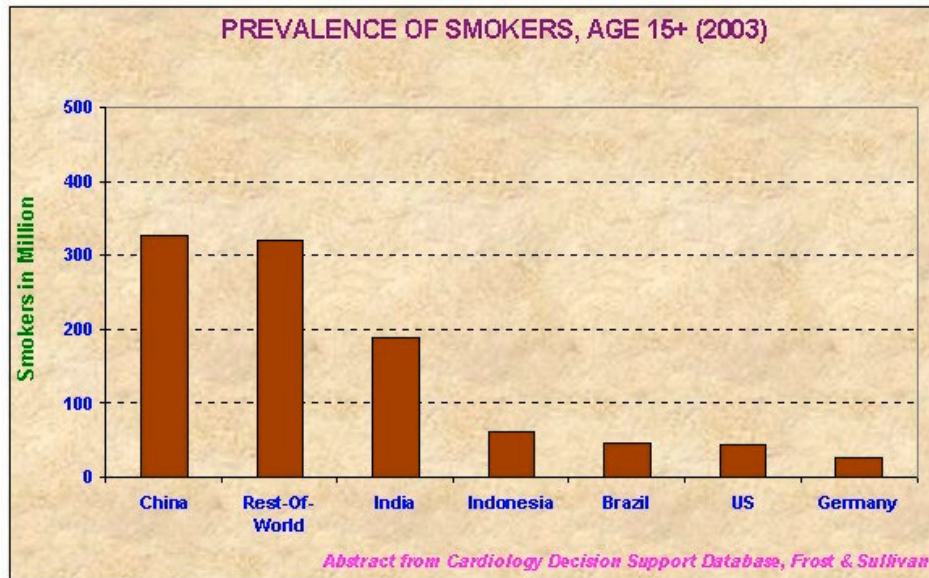
www.visitdunkeld.com/

Snuff is a preparation of finely pulverized tobacco that can be drawn up into the nostrils by inhaling. Also called smokeless tobacco.⁵ the snuff tobacco is usually fermented and perfumed. In 1761 snuff users were warned of nasal cancer.

The use of snuff declined in the 1830s because of Queen Victoria's intolerance for stained handkerchief and drippy noses.

Who smokes?

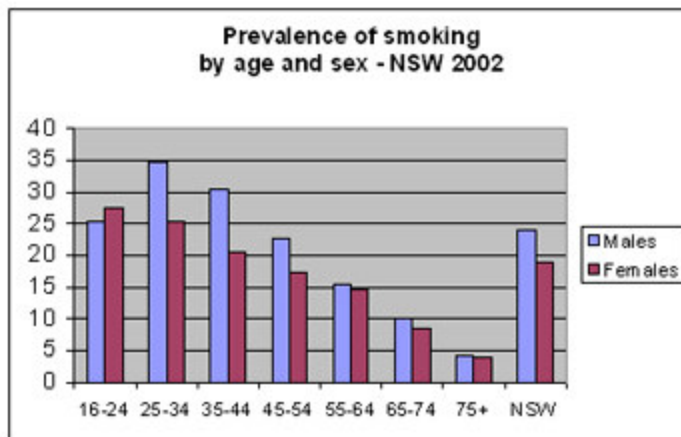
There are about 1 Billion smokers around the world.



WWW.GROWTHCONSULTING.FROST.COM/ WEB/IMAGES.NSF...

Why do people smoke?

Work by NSW Health, indicates the significant number of young people who take up smoking.⁶ It is illegal in Australia to purchase tobacco products before sixteen years, in most States before eighteen.



Data source: NSW Health Survey. Centre for Epidemiology and Research, NSW Health.

When you smoke you are likely to become addicted to the nicotine. Many claim that smoking can make them relax. Nicotine is a stimulant that is short lived. When the effect wears off, another fix is needed.

“People have many other personal reasons for smoking. Smokers may:

- ❖ use smoking as a support for when things go wrong
- ❖ enjoy smoking with others as a shared activity
- ❖ smoke to make themselves look more confident and in control

- ❖ think that cigarettes help them to keep their weight down
- ❖ have a cigarette when they're feeling bored or lonely
- ❖ smoke when they need a break or a moment to themselves.”⁶

“During the Crimean War (1854-1856) Spanish soldiers introduced tobacco to their British, French and Russian Comrades in Arms. This started a worldwide growth in tobacco consumption and one of the world's largest industries.”⁴

“In the past cigarette manufacturers have deliberately targeted children and young people. The industry spends a great deal of money on making cigarettes seem glamorous, appealing, fashionable and attractive. Most smokers started when they were young and image conscious. Young smokers often find it difficult to give up in later life.”⁷



Young smokers are a common sight in Germany. “Over the past ten years, tobacco consumption among 12-15 year-olds has almost doubled, with some 21 percent of girls and 18 percent of boys in the age group smoking regularly. For 16-19 year-olds, the figure is 45 percent. They're alarming statistics, not least because smoking in Germany is not actually legal until the age of 16. ...” In fact, the state of Berlin broke new ground this year in implementing a ban on smoking in its schools. It's a move which other states are likely to follow, but for the time being children over the age of 16 can smoke in designated areas on school premises provided they present a letter of consent from their parents.”⁸

Smoking has been the subject of very clever advertising by the tobacco companies over the years.⁶

Smoking was glorified in Western Society. Kennedy, Roosevelt, Winston Churchill, Errol Flynn, Bogart, Bette Davis, Mark Twain, etc smoked.

These people were seen as heroes and their habits were imitated. WW2 Lucky Strikes issued free – Patriotic duty, Contribute to War effort. Relieves tedium of war. The end result was that an entire generation was addicted to nicotine.



The entire production of cigarettes factories was allocated to the war effort.

Napoleon Bonaparte once said “this vice brings in 100 million francs each year. I will certainly forbid it at once—as soon as you can name a virtue that brings in as much revenue.”⁴

pocono.org/scranton/deadreckoning.jpg

Winston Churchill used his image as a smoker for his political advantage. Along with his vast hat collection, his bow ties, cane and of course his cigar, these were to become his trademarks. These were designed to make him recognised in public. These trademarks were often the subjects of political cartoonists, a technique called name recognition.⁹



www.bbc.co.uk/.../images/churchill_winston.jpg

Many of the cigarettes carried photographs of soldiers smoking. As in WW1, people who saw the advertisements took up smoking.⁴



www.wramc.amedd.arm.mil/.../tobaccohistory.htm

Passive Smoking

Passive smoking occurs when smokers and non-smokers breathe side stream and exhaled smoke. Whilst smokers are at risk from inhaling tobacco smoke directly (mainstream), both the smoker and non-smokers are at risk from the smoke from the burning tobacco (sidestream) and the exhaled smoke from the smoker (exhaled mainstream). The combination of the smoke sources is referred to as environmental tobacco smoke (ETS)

ETS is an irritant to the eyes and respiratory tract and to many people has an offensive odour. It increases the chances of contracting or aggravating a range of illnesses including:

- ❖ Cardio-vascular disease
- ❖ Lung cancer
- ❖ Asthma (particularly in children)
- ❖ Acute irritation of the respiratory tract
- ❖ Bronchitis, pneumonia and other chest illnesses in children.^{10 11}



www.cancerCouncil.com.au/.../

What's in Tobacco Smoke?

There are over 4000 chemicals in tobacco smoke.

Tobacco smoke contains around 43 carcinogenic (cancer-causing) substances.

Benzo (a) pyrene is a cancer causing substance that damages the all-important P53 gene, which plays a vital role in maintaining the body's health by preventing the growth of cells that lead to tumours and cancer¹².



www.speosphotographers.com/ Speos-photographer...

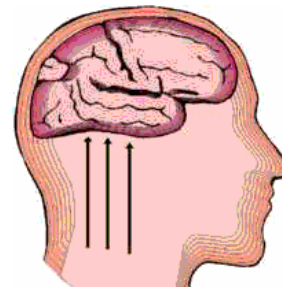


www.smokefreegwinnett.com/ parameters/smokefre...

Some of the most dangerous elements of tobacco smoke come from the burning process.

Heat from tobacco combustion causes molecules to fragment into unstable arrangements, which recombine to form carcinogenic compounds of polycyclic aromatic hydrocarbons, or PAH's.¹³

- ❖ Nicotine is carcinogenic and a drug of addiction.
- ❖ It takes 4 seconds for it to reach the bloodstream and a further 10 seconds to reach the brain.
- ❖ It causes the release of relaxing chemicals.
- ❖ However the period of relaxation is short lived.



www.drugfreesport.com/.../brainhead2.gif

A craving develops which is resolved by another cigarette. The addiction is confirmed.

- ❖ Burning tobacco generates tar.
- ❖ Tar causes throat & lung cancer.
- ❖ Tar damages the 'cilia' in the lungs.
- ❖ Tar also stains fingers & teeth

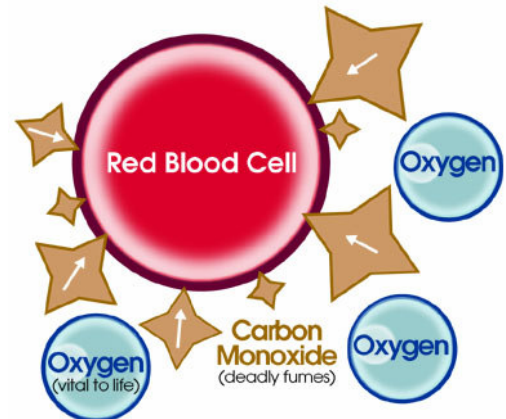
The bronchi (tubes) are lined with a mucus membrane. The hair-like cilia within the mucus create a rhythmic motion continually sweeping mucus upwards thus removing any inhaled particles.¹⁴



Tar stains this diseased lung. (Quit 2002)p.8)

Because of the damage to the cilia, the mucus remains in the lung and smokers often present with a smokers cough. The residual tar can alter the nature of cells and cancer develops.

- ❖ Carbon monoxide (CO) is a poisonous gas.
- ❖ CO binds to red blood cells and makes it harder for the carriage of oxygen (O) to muscles and organs
- ❖ Smokers have 10 times the rate of CO than Non-smokers
- ❖ Smoking during pregnancy reduces the amount of oxygen to baby



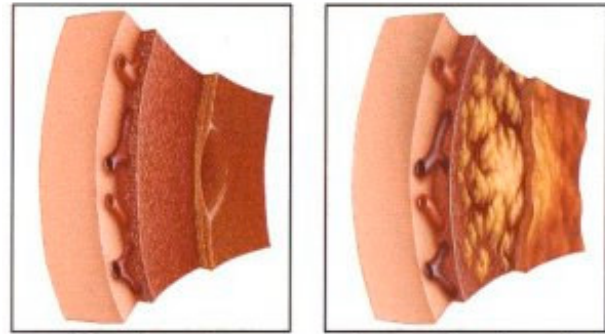
www.cdc.gov/.../blood_cells_attacked_small.jpg

Eye Damage - Macular Degeneration

- ❖ "Macular degeneration is damage or breakdown of the macula of the eye. The macula is the small, central point of the light-sensing retina in the back of the eye. It processes the sharp central vision we use for reading and other fine tasks.
- ❖ When the macula loses its ability to function fully, one may experience blurriness, darkness, or other visual distortions in the centre of vision. This makes close work, such as reading or threading a needle, difficult or impossible to the unaided eye.
- ❖ Although macular degeneration reduces central vision, it does not affect side vision. This means that macular degeneration alone does not result in total blindness."¹⁵
- ❖ Research has shown that smoking can cause the condition.¹⁶



Effect of Macular Degeneration



Normal macula

Degeneration of macula



Normal visual field



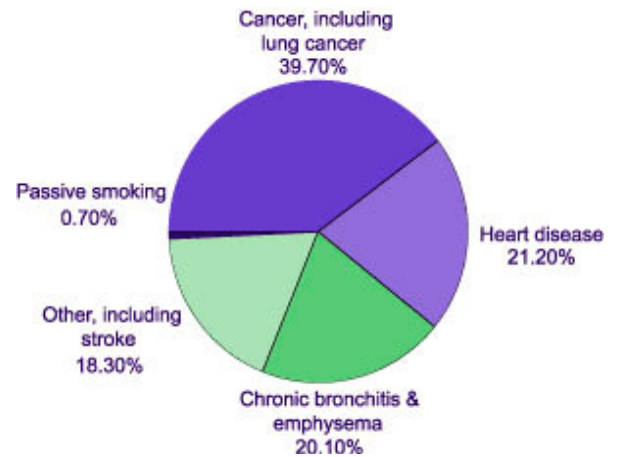
Abnormal visual field

www.stlukeseye.com/Conditions/MacularDegeneration.asp

www.colemaneye.com/services/macular...

Costs of Smoking

“Smoking-related deaths for the year 2000 were as high in developing countries than in industrialised areas of the world, with 84% of such deaths in developing countries being among male smokers. The investigators estimate that 4.8 million deaths in 2000 were attributable to smoking, with a similar toll in both developed and less-developed countries. Over three-quarters of all smoking deaths worldwide were among men-this proportion increased to 84% of men in less-developed countries. The main causes of death worldwide were cardiovascular disease, (1.7 million deaths), chronic obstructive pulmonary disease (just under a million deaths), and lung cancer and 850,000 deaths).”¹⁷



. Smoking Deaths by Disease Group: Australia 1996. CCSA.

In 1998, the estimated total number of deaths attributable to smoking in Australia was 19,019.¹⁸

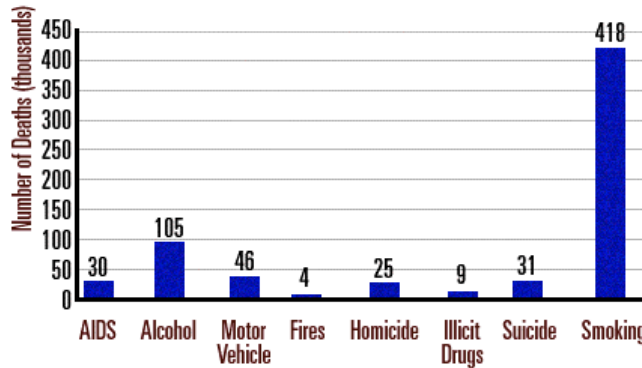
The total cost to the community for needs to be considered:

TABLE 1		
ESTIMATE OF THE SOCIAL COST OF SMOKING FOR THE FINANCIAL YEAR, AUSTRALIA, 1998-99		
	\$ million	\$ million
Tangible costs		
Lost production (net)	5,064	
Health care	1,095	
Fires *	26	
Resources used in cigarette production	1,402	
Total tangible costs		7,587
Intangible costs		
Value of loss of life	13,476	
Total intangible costs		13,476
Total costs		21,063

* Not included under lost production or health care.
Source: Collins and Lapsley, 2002.⁶

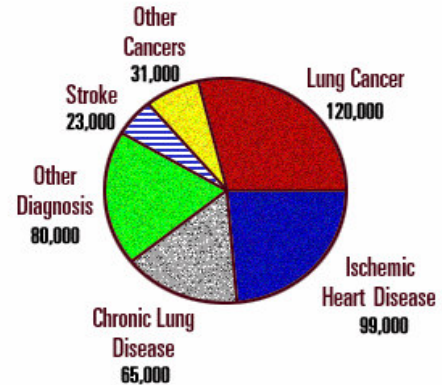
Citation: *N S W Public Health Bull* 2004; 15(5-6) 92-94

Comparative Causes of Annual Deaths
in the United States



CNN.Interactive US News Story Page www.cnn.com/us/9705/tobacco

Deaths Attributable to Cigarette Smoking
United States, 1990

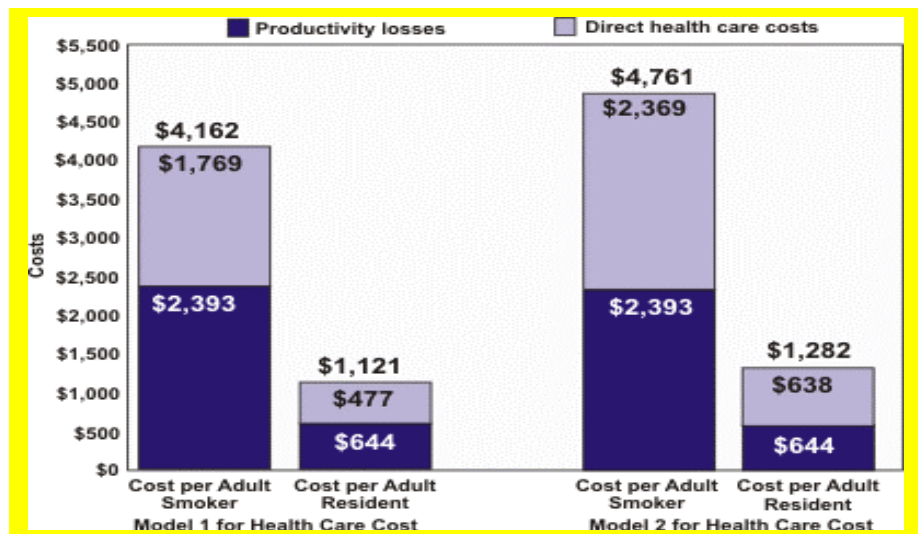


Smoking is by far the highest preventable cause of death in the United States.

Estimated Smoking-Attributable Productivity Losses plus Direct Health Care Costs -- Per Adult Smoker vs. Per Adult Resident in West Virginia: 2001,

Model 1 – Vincent Miller et al
Model 2 – Leonard Miller et al

West Virginia Department of Health and Human Resources
Bureau for Public Health
Office of Epidemiology and Health Promotion
January 2003



Estimated Smoking-Attributable Productivity Losses plus Direct Health Care Costs -- Per Adult Smoker vs. Per Adult Resident in West Virginia: 2001.

Summary of US Smoking Deaths

- ❖ 1990 – 94 an average of 430,700 Americans died of smoking related disease.
- ❖ 1 in 5 deaths occurred with cardiovascular disease (CVD) due to smoking.
- ❖ 37,000 - 40,000 non-smokers die from CVD as a result of ETS.¹⁹

Recovery of Costs

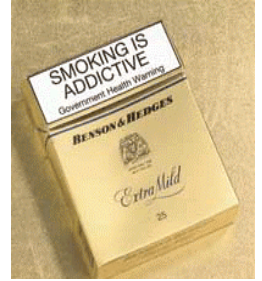
The tobacco industry in the United States since 1994 had been a frequent target of liability litigation as growing numbers of states followed the lead of Mississippi Attorney General Michael Moore by suing tobacco companies to recover the public costs of treating smoking-related illnesses. ... Under the agreement, the tobacco companies would pay \$368.5 billion over 25 years to compensate state and class-action plaintiffs for the costs of treating smoking-related illnesses and to fund antismoking programs and provide health care for millions of uninsured children.²⁰

“Four major tobacco companies October 10 announced that they had reached a \$349 million settlement with flight attendants who claimed that their health had been damaged by exposure to secondhand smoke. The case had been the first class-action suit against the tobacco industry to reach trial and the first linking liability to secondhand smoke.”²¹

Health Warnings

All cigarette packets in the US carry the Surgeon General’s warning “Smoking causes lung cancer, heart disease, emphysema and may complicate pregnancies”

- ❖ Australian cigarettes packets carry warning message
- ❖ 1971 Television advertising banned in US.
- ❖ Advertising bans eventually became universal.
- ❖ Smoking banned in most commercial airlines and transportation systems.
- ❖ 2002 British Medical Association claims ‘no safe level of environmental tobacco smoke’.
- ❖ 2002 World Health Organisation concludes exposure to ETS causes cancer.



www1.drugaware.com.au/ images/bensonandhedges.gif

Tobacco companies now use sporting events such as grand prix car racing and tennis tournaments as their advertising. Whilst there is no advertising by definition, television coverage of the event ensures the exposure of the product to the potential customers



www.wclynx.com/ burntofferings/vstennis.jpg



jensenbuttonfirstpodium.jpg

US\$300 million of tobacco money enters Formula One each year.²²

Health Benefits of Smoking Cessation²³

- ❖ Substantial immediate and long term health benefits for smokers of all ages.
- ❖ The excess risk of death from smoking falls soon after cessation and continues to do so for at least 10-15 years.
- ❖ Former smokers live longer than continuing smokers; no matter what age they stop smoking...
- ❖ For smokers who stop before age 35, survival is about the same as that for non-smokers.

- ❖ **Campaigns to prevent Tobacco use** ²³
- ❖ **increased taxation** The World Bank Group ²⁵ report that the researchers calculate that if there were a sustained real rise in the price of cigarettes of 10 percent over the average estimated price in each region, 40 million people worldwide would quit smoking, and many more who would otherwise have taken up smoking would be deterred from doing so.
- ❖ **comprehensive smoking bans.** Restrictions in public areas and transportations systems are widespread.
- ❖ **advertising and sponsorship bans.** ‘When TV advertising of cigarettes was stopped in the US, the advertising revenue of magazines went up by an average of \$5.5 million a year, and smoking actually increased.’
- ❖ **restricting sales to children.** Many countries restrict the sale of tobacco products to persons above 16 years. This does not prevent the use.
- ❖ **financial support for counter-advertising.**
- ❖ **community education programmes.**

Quit Smoking Programs

- ❖ **Nicotine replacement.** Nicotine replacement therapy is based on the idea that replacing nicotine in the body allows smoking behaviour to be stopped. A gradual weaning of the subject from nicotine follows without the pharmacological sequelae. ²³



news.bbc.co.uk/.../images/_1032752_zyban150.jpg

Nicotine replacement can be also supplied through lozenges and puffers. Those methods are not as widely reported.

The background rate of cessation of smokers in general is estimated at about 1.5% a year. In the control groups in these trials, the rate of cessation is often much higher than this, showing that people wanted to stop smoking, and that personal motivation with some professional intervention can achieve a certain amount on its own. Nicotine patches can almost double the rate, which must be good. ²⁴

- ❖ **Bupropion (Zyban).** ZYBAN is the first non-nicotine, oral medication (a pill) that is FDA-approved as an aid to smoking cessation. While it is unclear exactly how ZYBAN works, it is thought to act on the part of your brain that is addicted to the ingredients in cigarettes. ZYBAN helps decrease your cravings and withdrawal symptoms and your desire to smoke. ²⁶
(Prescription only)



www.buy-drugs-online-pharmacy.com/.../zyban.jpg

- ❖ ‘ **Cold turkey**’ - Means stopping the intake of nicotine. It takes about 3 days for the body to be nicotine free. However the withdrawal symptoms may last weeks. Because of the addiction, it takes great determination to pursue this method. This group often requires a strong support group.



www.paxtv.com/.../ images/defaulttnew_02.jpg

Health strategies

The WHO Framework Convention on Tobacco Control was adopted unanimously by the 56th World Health Assembly on 21 May 2003. Resolution 56.1:

- ❖ Determined to protect present and future generations from tobacco consumption and exposure to tobacco smoke;
- ❖ Noting with profound concern the escalation in smoking and other forms of tobacco use worldwide; ...
- ❖ Urged...United Nations and other International organisations...to provide support for strengthening national and international tobacco control programmes;²⁷

Tobacco Control Programs – Australia

Quit programs

- ❖ Education. Health Departments and Cancer Councils allocate resources here.
- ❖ Commitment + intervention.
- ❖ Employer funded program. Some employers see the benefit of less absenteeism, more production, and an overall reduction in overheads.
- ❖ Limited success. Not all smokers want to try or are unsuccessful trying Quit programs.

Smoke Free Environments

- ❖ **Enclosed public places** – transport, shops, bars, clubs, etc. Government funded research has found general public acceptance of no smoking in enclosed public areas such as transport, shopping centres etc. The work provided the rationale for the development of a legislation basis to restrict smoking in enclosed public spaces and workplaces.²⁸
- ❖ **Inadequacies of ventilation systems.** ‘Mechanical dilution ventilation is a not an appropriate method for eliminating exposure to ETS for any given level of smoking.’^{29 30}
- ❖ **Designated outdoor smoking areas.** ‘Secondhand smoke cannot be controlled by ventilation, air cleaning or spatial separation of smokers from non-smokers’³⁰.

‘Restriction of smoking to outdoor areas where drift to workplaces cannot occur is a component of good practice in eliminating exposure to ETS. Smoking must not be permitted near doorways, windows or ventilation ducts.’²⁹

Smoke-free Legislation ^{31 32}

Australian Capital Territory (ACT)

Smoking (Prohibited in Enclosed Public Places) Act 2003.

Tasmania

Smoking banned in enclosed workplaces and public places.

South Australia

All multi-room venues must provide one smoke free room. After October 2007 all pubs, clubs gaming and licensed areas must be smoke free.

Western Australia

Legislation introduced to permit smoking in one room or bar hotels, taverns and other licensed premises.

New South Wales

Smoke-free Environment Act 2000 made restaurants, cafes and shopping centres smokefree. In 2003, this restriction extended to smoking bans in all counter areas where face-to face interaction occurred. Enclosed area smoking will be banned completely in pubs and clubs from 2007. ³⁴

Northern Territory

2003 All workplaces smokefree and public places such as cafes, shopping centres and dining areas of pubs and clubs.

Queensland

2002 All workplaces and public places smokefree.

Victoria

Shopping centres, restaurants and dining rooms of hotels, bars and licensed clubs

International

New Zealand

The Smoke-free environment Act 2003

United States

California, New York, Connecticut, Delaware, Massachusetts, Rhode Island and Maine have smoke-free workplaces.

Canada

45 municipalities have smoke-free restaurants, and 30 have smoke-free bars.

Europe

2003 European Union planned to introduce workplace bans through 15 member countries.

Ireland, Norway

2004 Smoking banned in workplaces, pubs, nightclubs and restaurants.

Smoke-free Workplaces

Most jurisdictions require that the employer provide the employee and others who visit the worksite with a safe and healthy environment. ³²

Assessments of the risks of passive smoking should be made on the basis of whether the smoking is indoors or outdoors.

To control ETS, smoking should be eliminated from all indoor areas. To do this employers should:

- ❖ Develop a written non-smoking policy in consultation with employees.
- ❖ Designate all indoor areas as non-smoking.
- ❖ Inform staff through meetings, memos and notice boards.
- ❖ Post signs using standard symbols clearly indicating to staff and the public that indoor areas are non-smoking.¹⁰

Trevor Mayhew 2005.

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 - Trevor Mayhew has been in the occupational health and safety sector for over 50 years. He has worked specifically in the physical hazards/working environment area for over 30 years. He has a GradDip/SafetySc from the University of NSW and a MAppSc (OH&S) from the University of Western Sydney. He is a Member of the Safety Institute of Australia and a Member of the Human Factors and Ergonomics Society of Australia. His research interests include inhalable particulates, indoor air quality, noise, confined spaces and risk management. He has been married for some 37 years. He has two daughters, the eldest is a nurse educator and the other is a science student at the University of NSW. His outside interests are consumed by a 50-year membership of St John Ambulance where he is a senior officer. In 2000 he was made a Knight of the Most Venerable Order of St John of Jerusalem.

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