

## ADDICTION/CESSATION

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Since the mid 50's, we have known that smoking is causing cancer, cardiovascular diseases and that cigarette smoking is doubling the all cause mortality. Most smokers know that smoking is dangerous ( $\geq 95\%$ ) but largely underestimate the risk. In the British doctors study, if 80% of non-smokers survive at age 70 and 33% at age 85, only respectively 50% and 8% of those smoking 25+ cigarettes per day did. This means that tobacco is the only freely available product that kills half of its dedicated users, not by accident but when used normally. The death rate of smokers is fairly the same as the one of non-smokers being ten years older. This stands for men and women. Smokers loose 16 years of life expectancy in developed countries, meaning that it takes 5 minutes to smoke a cigarette to loose 10 to 15 minutes of life.

One can wonder why smokers continue to smoke and hypothesise that smokers lack of will or virtue. This would be untrue because most smokers want to quit (80%) and even 30-40% did make a true attempt to quit during the former 12 months. The fact is that few smokers succeed ( $\leq 5\%$ ) at each attempt. The reason is the high addictiveness of nicotine, which is to be compared to heroin and cocaine. The percentage of relapse over time is the same for nicotine, alcohol or heroine addicts. This is again rather unknown or under estimated.

The tobacco industry manipulated cigarettes to increase smokers' dependence to their products by adding ammonia during the process. Ammonisation increases the free nicotine, which is more readily available. Through the respiratory route, nicotine reaches the brain quicker than through the intravenous route. Inhaled nicotine reaches the brain within 7 seconds. Each puff stimulates the dopaminergic system in the brain (nucleus accumbens), when the MAO system is being depressed. Quick and high peaks of nicotine explain the addiction to nicotine. The tobacco industry considers cigarettes as "nicotine delivery devices" which should deliver 1.3 mg of nicotine to satisfy the smoker and not to be repellent to "learners" or

“pre smokers”. The tobacco industry even created genetically modified tobacco seeds producing tobacco with 50% higher nicotine levels.

Although some damages may persist after smokers quit, the main dangers of smoking decrease even in those who have smoked for 30 or more years. Benefits can be seen within one day of quitting and by 15 years, the overall risk of death is almost the same as a never-smoker, especially if the smoker quits before illness. Quitting is advantageous at all age, but the sooner the better because the risk of dying from smoking increase with the power of four or five with the smoking duration.

The life threatening risk of continuing smoking and the low rate of successful spontaneous quitting stress the urgent need of improving the effectiveness of cessation procedures. This can be obtained by convincing smokers to try to quit and by preventing relapses for those who try.

Accelerating the maturation process towards the smoker's decision to quit is of utmost importance. Four stages have been described (“happy smoker”, “I should quit”, “I will quit”, “I quit”). Advertising slows down the process by glamorising smoking. Banning advertising is then an effective measure to prevent the tobacco industry to keep pressure on smokers. The same role was given so-called “light cigarettes” to prevent health conscious smokers to quit. Regulations for non-smoker protection at work and in public places have an impact by disturbing the smokers and “denormalizing” smoking in the society. Price increase of tobacco products do have a proven impact on the smoker decision to quit if the increase is dissuasive enough (>5%). These public health actions are based on legal or regulatory decisions, so depending on political will.

On another side, health professionals have the duty to question systematically each of their patients on their smoking status and give the smokers at least a brief advice for those not willing to quit yet. Even a minimal intervention by health professionals advising to quit has an impact, cessation being multiplied by 1.69 (1.45-1.98). Several studies have suggested that women may indeed find it more difficult to quit smoking than men, and are more concerned about possible weight gain. For those willing to quit, health professionals today have ways to treat tobacco use and dependence and help quitters. The effective treatments are:

1. Counselling and behavioral therapies, brief advice from a primary care physician during a routine consultation is effective in increasing the number of smokers stopping for at least 6 months (+2% CI: 1 to 3%)

2. Pharmacotherapies including nicotine replacement therapy and bupropion SR.

	RR	CI	
Gums	1.66	(1.52-1.81)	51 studies
Patches	1.76	(1.59-1.95)	34 studies
Spray	2.27	(1.61-3.20)	4 studies
Inhaler	2.08	(1.43-3.04)	4 studies
Su. Tab	1.73	(1.07-2.80)	2 studies
TOTAL	1.73	(1.62-1.85)	95 studies

Table 1: NRT efficacy (Silagy C et al. Cochrane review 2002)

RR: relative risk; CI: confidence interval

		RR	CI
Hurt	1997	1.43	(0.71-2.89)
Jorenby	1999	3.67	(1.90-7.11)
Tashkin	2001	1.32	(0.87-2.61)
Gonzales	2001	5.34	(1.79-15.89)
Zellweger	2001	1.10	(0.72-1.68)
McRobbie	2001	2.72	(1.70-4.34)
Tonstad	2001	2.16	(1.30-3.59)
TOTAL		2.05	(1.38-3.03)

Table 2: Bupropion SR (Zyban<sup>®</sup>) efficacy (meta analysis Jarvis M. et al SRNT Savannah 2002)

RR: relative risk; CI: confidence interval

It is a political responsibility for all governments to make these products available, accessible and affordable to all smokers and to pay attention that drug regulatory bodies do not overburden such treatments when the most dangerous products (cigarettes) go nearly unregulated.

There is an urgent need to implement and improve the effective smoking cessation means to prevent the millions deaths ahead of us (1 billion during the XXIst century if nothing change). Unless current smokers quit, tobacco deaths will rise dramatically in the next 50 years, the primary prevention of smoking having an impact on death rates only after 2050. Those who die today are yesterday smokers; today smokers are the tomorrow deaths.