

Pamphlet to aid smoking cessation

WHY DO YOU SMOKE?

**Smokers usually say they know smoking is not good for them –
but do YOU really know... and still continue smoking?
Let's check it out !**

DO YOU KNOW:

(1) that smoking is a true addiction, not just a habit as it is often erroneously called...?

Indeed, smoking is an addiction more powerful than dependence on alcohol, heroin or even cocaine ! One simply needs to consider that no other drug is self-administered with the persistence, regularity and frequency of cigarette smoke. At an average rate of ten puffs per cigarette, a one to three pack-a-day smoker inhales 70,000 to 200,000 individual doses(!) of mainstream smoke during a single year.

Consider further that if your doctor has put you on some kind of medicine, say for example an antibiotic drug, which you are supposed to take for ten days, three times a day - how often do you actually forget to take it? But you won't forget to light your cigarette, every half hour or so on average while awake, and then the first thing in the morning often before or even instead of breakfast. And you continue lighting up every day for weeks, months, years, even decades despite all sorts of warnings you hear or read about. A smoking friend of mine once complained to me that after reading all that bad, bad stuff about smoking, he simply couldn't stand it any longer and gave up....reading. That's ADDICTION for sure.

Knowing that something is bad for you but you still continue doing it - the psychologists call this "cognitive dissonance" - is very disturbing to one's psyche. Yet, it can be quite helpful because over time it forces you to confront the offending emotion and deal with it positively, i.e., by eliminating its cause. In our case here, it tells you to grab your pack of cigarettes, throw it to the ground and step on it with a passion. You may not succeed the first time but after a few repetitions, you will !

DO YOU KNOW:

(2) that - surely you know this one - it is for the nicotine that you smoke.., have to smoke, to be more precise? But do you know what comes with the nicotine...?

In fact, the nicotine in the smoke you draw deeply into your lungs is just like the proverbial needle in the haystack. It rides on an ominous burden of poisons and cancer-producing substances that boggle the mind. The number is staggering: more than 4,000 chemicals a large number of which are hazardous and are strictly controlled by law if they happen to occur in any manufacturing process. Many of the toxic agents are already present in the unsmoked tobacco - so you wouldn't miss out if you only indulge in chewing or dipping - but many more are manufactured by you, the smoker, in the chemical factory - yes that's what it is - a chemical factory, in the glowing tip of your cherished cigarette when you draw smoke...

And so the story continues. The burning tobacco then generates more than 150 billion tar particles per cubic inch, constituting the visible portion of cigarette smoke. But this visible portion amounts to little more than 5 to 8 percent of what a lit cigarette discharges and what you inhale during puffing. The remaining 90 percent of the total output from a burning cigarette is in gaseous form and cannot be seen. Both components, the visible particulates and the invisible vapor portion, contain the prodigious witches' brew of chemicals, waiting to tickle your nerve endings located in the millions of tiny air sacs (alveoli) spread out all over the huge surface area of your lungs. Laid out flatly, the inner surface of both lungs would approach the size of a tennis court (!) and is washed over by the total blood supply each beat of your heart delivers. And into this clean blood crashes the avalanche of the unwholesome mix you have breathed in and is then swiftly carried to the brain and practically every other organ in the body.

According to chemists at the R.J.Reynolds Tobacco Company, cigarette smoke particulates are about 10,000 times more concentrated than the automobile pollution at rush hour in heavy traffic. The stop-and-go driving on the eight lane Hollywood freeway in Los Angeles comes immediately to mind. The lungs of smokers, puffing a daily ration of 20 to 60 cigarettes, from low to high tar, collect an annual deposit of one-quarter to one and one-half pounds of the gooey black material, amounting to a total of some 15 to 60 million pounds of carcinogen-packed tar for the aggregate of current American smokers. So you are almost eating, albeit with your lungs, this toxic mess just to get your fix of nicotine. Bon appetit !

The problem is that people are not sufficiently aware of their breathing, a largely automatic process, to pay attention to what they breathe or how much they breathe. For an adult male, the average daily intake of food is about 3 lbs, that of water 5 lbs, but the amount of air exchanged by the lungs is as high as 30 lbs.

And since you are generous, you make sure that your nonsmoking friends were not left out. In the 1980s and 1990s, surely much less now, an annual harvest of some 2.25 million metric tons of "secondhand smoke" chemicals, polluted the enclosed air spaces of residences, offices, conference rooms, bars, restaurants, trains and automobiles in this country and invaded the growing body of millions of kids, born and unborn...Secondhand smoke contains essentially the same chemicals you breathe in from your cigarette but they are present in higher concentration in the emissions from your cigarette between puffs,

DO YOU KNOW:

(3) that there are grim consequences of this toxic pollution of smokers' and nonsmokers' lungs, brains and most other tissues and body parts?

As you light up 20, 40 or even 60 or more times every day for weeks, for months, and for years on end, you can no longer ask how this could possibly cause disease, but instead, you must ask how any living organism could take such abuse without eventually succumbing to a variety - and it is an impressive variety - of serious health problems, among which cancer, especially lung cancer, heart attacks and pulmonary diseases are topping the list for adults. Well, it won't happen to you, right? Denial notwithstanding, your chance is 50 /50, i.e., one of two smokers eventually dies from any one of these afflictions. The other 50 percent? They don't enjoy undiminished health for sure but are probably spared death from smoking because death from another cause has intervened earlier.

And what about the children exposed to tobacco poisons in the womb, in infancy, and while growing up ? Apart from physical illnesses like asthma, childhood leukemia, and cancer later in life, they may suffer from intellectual deficits, emotional and all sorts of behavioral problems.

In the aggregate then, every year almost half a million deaths are attributable to smoking in this country alone, almost 5 million worldwide. Smoking is the uncontested leading cause, i.e., **PREVENTABLE (!)** leading cause of disease, disability and death in the industrialized world, while "developing" nations are catching up quickly. The total smoking-related mortality during the 21st century is projected to reach one billion - will YOU be part of this statistic? No wars, although there have been plenty, have ever achieved such a record number of killings, nor have any epidemics that have swept over much of the planet caused as much misery, disease and death as cigarette smoking. Indeed, cigarette companies, amiably referred to as **BIG TOBACCO**, with some 90 percent of their clients recruited to smoking in childhood, can be proud of their advertising blitz and its multibillion dollar business yield. Truly, they have made a killing, literally that is, in their case !

Or you can look at it in this way. It's not easy to put a human face on abstract numbers, but try to pause for a moment and envisage, however feebly, the dying and death of some of the estimated 100 million victims that smoking has claimed during the last century. Let the unspeakable agonies of dying from cancer of the lungs or larynx, the slow suffocation of those afflicted with emphysema, and the fatal heart attacks often in the prime of life, conjure up visions of bodies lined up in endless rows, bodies fallen victim to violence turned inward, ravaged by a product whose dangers have been known but insidiously concealed by its manufacturers - and tolerated by governments ! - for more than five decades. Several years ago, Harvard epidemiologist John Bailar stated in *The New England Journal of Medicine* that the "...sharp and continuing rise in deaths from lung cancer, nearly all from cigarette smoking, is now widely recognized as a medical, social, and political scandal."

BUT NOW IT IS YOU WHO WILL ASK :

Why in the world do I have to put up with all this dirty smoke if all I want is simply nicotine ?

The answer is twofold:

Yes, you can get pure nicotine, uncontaminated by the 4,000 plus chemicals in tobacco smoke or the 2,000 plus chemicals in smokeless tobacco, and you can get it in any one of several forms of the so-called "Nicotine Replacement Therapy" products, NRTs, such as nicotine containing chewing gum, lozengers, skin patches, inhalent or whatever new attractions are in the making. NRTs, a misnomer, do actually not "replace" nicotine but are supposed to replace the need of smoking cigarettes as a means for getting your nicotine. Sounds great, doesn't it ? But it is not as simple as you might think.

1) For one, NRT was developed in the 1980s not as an alternative to smoking but as an aid to stop smoking, to help the smoker who tries to quit control the inevitable "withdrawal" symptoms that come with quitting and often lead to relapse.... This doesn't sound quite right, does it? You are supposed to use nicotine to beat your addiction to nicotine? It doesn't make sense. How can you successfully overcome your addiction to nicotine, that is what quitting is

all about, if you continue feeding it, feeding your addiction to nicotine with...nicotine? The presumption was, and still is in official quarters, that NRT will just help you get over the blues of quitting but, being not as satisfying as smoking, will not keep you in bondage as smoking does. This is the theoretical academic logic, if you will, that underlies NRT. Yes, the original intent was to prescribe NRT - NRT was initially available only on prescription - for a specified limited time period. At the completion of this treatment course you would be cured of smoking as well as of nicotine addiction. This precariously optimistic scenario notwithstanding, the practical situation turned out to be quite different.

Withdrawal symptoms consist of "craving", i.e., the urge to smoke and seek reward from smoking, the so-called positive reinforcement component of addiction. The second component of addiction, the so-called negative reinforcement, represents the discomfort and unpleasantness of deprivation prompting "drug-seeking" behavior. NRT helps control the latter but generally fails to satisfy the former. And this was and is its downfall. Hence, frequent relapses to smoking are the rule, often in alternation or even concomitant with NRT use, thereby increasing the nicotine burden on the organism.

In brief, although the "brilliant" idea did not work for the smoker, it seemed to work for the makers of NRT, the drug companies which graciously want to assist you stop smoking by buying their nicotine. Let us amiably call them "BIG PHARMA." And then BIG TOBACCO, which in the beginning opposed BIG PHARMA because it feared smokers might quit and it would sell fewer cigarettes, saw this was not the case and so began aligning itself side by side with BIG PHARMA. When the two BIGGIES recognized their common interest in keeping nicotine addiction from faltering, they started reinforcing, rather than fighting, each other. Research efforts trying to show that NRT does work, however marginally, had to concentrate primarily on short term results, since long range cessation successes have been weak, unconvincing or altogether absent. The magical pill or patch to make you a nonsmoker was no match for the nonchemical behavioral and psychotherapeutic treatments of nicotine addiction, not to speak of the good old-fashioned "Cold Turkey" approach.

2) All this said, a change in direction was inevitable. After their investment in marketing nicotine products, the pharmaceutical enterprises involved did not want to let go of the prospects of a multibillion dollar/pound NRT business beckoning on the horizon. More and more reputed scientists and tobacco control advocates let themselves be persuaded, not without accepting advisory functions with BIG PHARMA, not to abandon NRT because of its shortcomings. Instead, they promoted NRT more vigorously as a "safer" alternative to smoking, while imperceptibly ignoring the time limits originally set for NRT use. Some voices became bold enough to suggest to indulge in using NRT indefinitely if abstinence was not readily achievable. At the same time, they totally ignored the risk of relapse to smoking to satisfy the craving for inhaling nicotine.

In Britain, the governmental health services expanded the use of NRT to pregnancy, to kids from age twelve on, and encouraged starting NRT use even before attempting to stop smoking. In the United States, NRT use is also increasingly recommended. To rationalize this growing emphasis on NRT use, nicotine had to be made palatable by playing down or even denying its toxicity and comparing it to caffeine....

The new paradigm is no longer aiming at defeating nicotine addiction but to keep nursing it, medicalizing it with steadily improving and more satisfying forms of NRT to prevent relapsing

to smoking. However, a new study reveals that offering a remedy for a risky behavior inadvertently promotes this behavior by suggesting that the risk is manageable. In this way, NRT is removing the sting from the felt need to quit, thereby thwarting its success.

NOW YOU MAY ASK WHY NOT GO FOR THE NICOTINE IN NRT IF IT KEEPS ME FROM SMOKING, IF I SIMPLY CANNOT QUIT ?

If it ever will do that which is not at all certain... But let's assume that it would, that new improved NRT delivery systems or formulations would be as rewarding as inhaled cigarette smoke and would in time replace smoking. By brainstorming this possibility, we have finally reached the point when we must confront the crucial question: what does NICOTINE do to our body and mind. Is nicotine really as innocent as caffeine, while the 4,000 plus chemicals in cigarette smoke are the only true offenders we have to worry about?

It seems we have to start all over again, forget smoking, and focus solely on nicotine. What can we reliably state as far as its established effects are concerned? Apart from the much higher cost of NRTs, what would be the short and long term consequences of its widespread use for public health ?

We have a problem here: To properly describe the effects of nicotine would occupy the space of a book or at least a lengthy chapter and the use of a scientific vocabulary that is not within the grasp of an average person. In the present context, therefore, I can only list, in very general terms, the most damaging aspects of nicotine action seen in the tiny amounts received from smoking or NRT (pure nicotine, by the way, is a liquid a few drops of which placed on the skin can be lethal).

To set the stage, one has to recognize that nicotine interacts with the very basic functions of the peripheral and central nervous system, i.e., the nerves supplying organs and tissues of the body and the vital command stations in the brain. When these systems are formed during fetal life, the nicotine the mother is exposed to from smoking, secondhand smoke, or NRT will impair their normal development.

Such impairment can manifest itself in a variety of symptoms depending on the site, time and intensity of nicotine action. Here are a few examples: the notorious "Sudden Infant Death Syndrome" or SIDS has been traced to prenatal and/or postnatal nicotine exposure. Nicotine exposure is responsible for cognitive and learning deficits in children as well as affective and behavioral problems such as "Attention Deficit Hyperactivity Disorder", ADHD, with displays of unruliness and aggression. Neonatal nicotine exposure impairs so-called auditory learning, a very specific lifelong handicap. Prenatal nicotine also primes the developing brain for depression and for nicotine addiction in adolescence. Being told that NRT is risk free, pregnant women smokers who used to quit at least during pregnancy may begin using NRT throughout pregnancy. As a consequence, intelligence expressed by I.Q. standards may decline in the offspring but as larger segments of the population are affected, this decline may not be readily be discernible.

As if nicotine's harmful role at the beginning of life were not enough to deserve serious attention and effective preventive measures, nicotine continues to play a deleterious role in the adult. In the small amounts ingested from smoking or NRT, nicotine plays a prominent

role in tobacco-related carcinogenesis, both in "initiation" and "promotion", the two cardinal stages in the development of cancer. Nicotine can be transformed in the body to one of the most potent lung carcinogens, the tobacco-specific nitrosamine, NNK. Nicotine from NRT can also undergo transformation to NNK. NNK and its metabolites are found in the first urine of infants born to smoking mothers and are present in elementary school children and adults exposed to environmental tobacco smoke.

Nicotine has also been incriminated in the incidence of heart attacks, atrial fibrillation, vasoconstriction, peripheral vascular disease, development and progression of atherosclerosis, thromboembolic events, pulmonary emphysema, kidney disease, stomach and duodenal ulcers, and macula degeneration. Although this role call is only sketchy, it should be sufficient to alert not only the smoker and user of smokeless tobacco products but also, in the present context, the "quitter" who has resorted to NRT.

AS A WAY OF SUMMARIZING:

- 1) Addiction to nicotine which keeps smokers smoking cannot be permanently arrested by nicotine either in the form of NRT or smokeless tobacco products.
- 2) Quitting smoking requires true effort. NRT suspends the need for the demanding behavioral change that achieves abstinence and thus is likely to perpetuate nicotine addiction indefinitely.
- 3) Since NRT only moderates the withdrawal symptoms of smoking cessation and has little effect on craving, intermittent relapses to smoking are inevitable.
- 4) Smoking and the often simultaneous use of NRT increase the nicotine burden on the body.
- 5) Nicotine has a wide range of now well established deleterious effects at blood levels associated with tobacco or NRT use, affecting almost every organ and function in the developing as well as the adult organism.
- 6) If NRT were ever able to replace smoking, which is highly unlikely, morbidity and mortality caused by nicotine itself would manifest over time and replace that of cigarette smoking. It would probably be lower for the adult, but nicotine exposure during fetal development and infancy could have alarming consequences for affected populations.

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