



## Kick Nicotine: Say No to Tobacco

Bina Rani<sup>1</sup>, Raaz Maheshwari<sup>2</sup>, Sanjeev Patwa<sup>3</sup>

<sup>1</sup>Department of Engineering Chemistry & Environmental Engineering, PCE, Jaipur, Rajasthan

<sup>2</sup>Department of Chemistry, SBDTC, Lakshman Garh – 332 311, Rajasthan

<sup>3</sup>Department of Computer Science, FASC (MITS) Lakshman Garh – 332 311, Rajasthan

Smoking with other forms of consumption (like chewing in the form of *zarda*, *gutkha* and *khaini*) remains the most preventable cause of death worldwide. During the 20<sup>th</sup> century, approximately 100 million people died globally from tobacco-related diseases. Today, with a smaller gap in the consumption of tobacco in men and women, the fairer sex too puts themselves at a greater risk of cervical cancer, infertility, premature menopause and osteoporosis. When we smoke, because of the inhalation process, nicotine is quickly absorbed into the blood stream and reaches the brain in only seven seconds, faster than any other drug. This implies that the pleasurable rewards like anxiety reduction, tolerance of pain are felt almost instantly. Many people believe that chewing tobacco is much safer than smoking it, which is simply not true. It's just as dangerous. While it's true we won't get lung cancer from chewing tobacco. There is a whole host of other cancers we can get. The fact that consumption of tobacco, particularly smoking is considered a highly social activity, further increases the addiction rate. Many times the addiction stems from the simple desire to be well-accepted within a peer group. A *hookah* or *shisha* is a more harmful way of smoking tobacco than cigarettes. Researchers have found that hookah delivers three times more deadly carbon monoxide (CO) and roughly the same amount of additive nicotine as a cigarette, dispelling the myth that waterpipe smoking is less lethal. Relative to a cigarette, waterpipe tobacco smoking generates more than 40x the smoke volume.

### SMOKING LINKED TO PREMATURE AGING

Researchers from University of Iowa have found a link between smoking and premature aging. The researchers have identified a key protein that is lost in Werner's syndrome (premature aging) is decreased in smokers with emphysema i.e. lung disease. This decrease harms lung cells that normally heal wounds. Smoking can accelerate the aging process and shorten the life span by an average of more than 12 years. People with Werner's syndrome begin aging rapidly after adolescence and typically die from cancer or heart disease in their 40s or 50s.

### PASSIVE SMOKING UPS DEMENTIA RISK

Passive smoking appears to significantly raise a person's risk of dementia and other forms of cognitive problems, British and US researchers stated in the report published in British Medical Journal. It was found a 44% increased risk for people exposed to high levels of second-hand smoke. "Our results suggest that inhaling other people's smoke may damage the brain, impair cognitive functions such as memory, and make dementia more likely," David Liewellyn of Britain's University of Cambridge, who led the study stated. One possible explanation is that exposure to second-hand smoke increases the risk of heart disease and stroke, conditions known to boost the odds of dementia and other cognitive problems. Major studies in the UK and US have concluded that parental smoking is associated with increased prevalence of asthma in children. Infants whose mothers smoke during pregnancy have a higher risk of developing asthma.

### SMOKERS HAVE FEWER TASTE BUDS

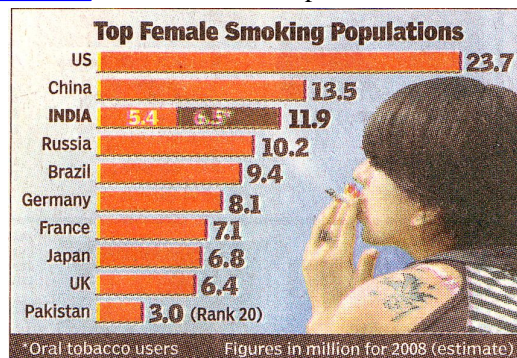
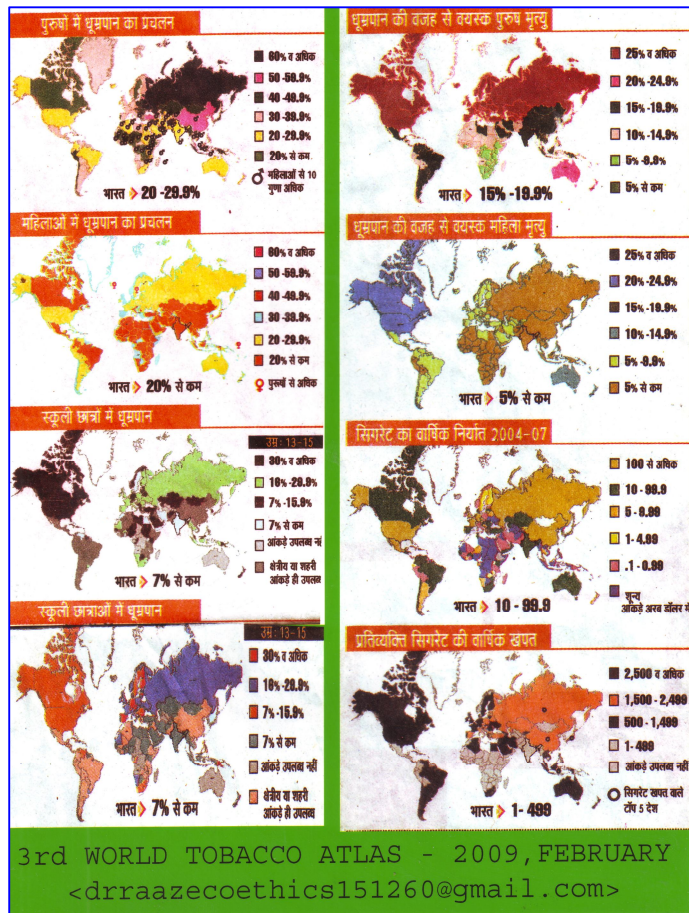
Smokers have fewer and flatter taste buds, states a study based on an analysis of tongues of 62 Greek soldiers, Pavlidis Pavlos led a team of researcher from the Aristotle University of Thessaloniki who used electrical stimulation to test the taste threshold of the soldiers and endoscopes to measure the

number and shape of a kind of taste bud called fungiform papillae. By applying electrical current to the tongue, a unique metallic taste can be generated. The 28 smokers in the study group scored worse than the 34 non-smokers. Upon close examination with a contact endoscope, the smoker's tongues had flatter fungiform papillae, with a reduced blood supply.

**INDIAN WOMEN PUFF THEIR WAY TO 3<sup>rd</sup> ON GLOBAL LIST**

This is one area where closing the gender gap is not advisable, but more women in India are turning smokers and oral users of tobacco. Indian women are among the worst in the world when it comes to smoking. The third edition of the Tobacco Atlas, released in Dublin by the American Cancer Society (ACS) and World Lung Foundation (WLF), states India has the third highest number of tobacco users in the world. Of the estimated 11.9 million female consumers of tobacco in India, 5.4 million smoke it and the rest chew the leaves. Tobacco in any form can be life-threatening and so whether the leaf is smoked, chewed or consumed orally as gutkha and other similar products, it is a health hazard. The

Alas points out that worldwide, tobacco consumption could kill six million people in 2010, and one-third of those people would die of cancer. The report also states that 25 per cent of smokers die or become ill during their most productive years, adversely impacting families as well as economies. Tobacco kills more men than women worldwide only because historical smoking prevalence has been higher among men than women but that is changing slowly. Because smoking rates are increasing among women in many countries including India, and particularly among young women, that gap in tobacco death rates between men and women is closing. Female smokers in India are dying eight years earlier than their non-smoking peer group, the study adds. Regular smokers tend to suffer from poor reproductive health. In men, it is known to cause impotence. In women, not only could smoking adversely affect the health of eggs produced; it could compromise the health of the expectant mother and



the foetus. And this would be true for passive smokers well. Tobacco consumers are more vulnerable to disease, especially cancer, and particularly to lung cancer. There could be many reasons why women in India are picking up the smoking habit. Smoking dulls the appetite and it is seen as a convenient and easy way of bolstering one's diet plan to help weight loss. Most developed countries are trying hard – and succeeding to an extent – to kick the habit through public awareness campaign, deterrent legislation, high pricing and pictorial warnings on cigarette packs. India should do likewise, especially since public health is already a

matter of high concern and poor delivery. The

central Tobacco Research Institute in AP (under the agriculture ministry) which tests tobacco content for the industry, recently found high levels of nicotine and tar in Indian cigarettes. While the global cut-off mark for tar is 10 mg per cigarette in India, it was found to be 13-14 mg in filter cigarette tested and 15-18 mg in non-filter cigarettes as against the permissible cut-off mark of 1 mg of nicotine per cigarette, the content level in filter cigarette was found to be 1.3-1.8 mg and in non-filter cigarettes it was 1.4-1.8mg.

#### **IN EUROPE, HEART ATTACKS DIP BY 10% AFTER SMOKING BAN**

The ban on public smoking has caused a fall in heart attack rates of 10%. Researchers commissioned by the British government have found a far sharper fall than they expected in the number of heart attacks across England in the year after the ban was imposed in July 2007. In Scotland, where the ban was imposed a year earlier, heart attack rates have fallen by 14% because of the ban. The success of the public smoking ban is emerging as one of the most significant improvements in public health that UK has seen, even measured by heart attack rates alone. Over time the ban should bring more benefits by cutting cancer and coronary pulmonary disease – killers are also caused by smoking. Exposure to cigarette smoke induces rapid changes in blood chemistry, making it more prone to clotting. In someone who has damaged arteries, smoke exposure can tip the balance and cause an attack. Similar results were reported in Western Europe after smoking bans. France had a 15% drop in emergency admissions for heart attacks after a year, while both Italy and Ireland had an 11% reduction.

#### **‘CHUNA’ ON TOBACCO CAN BLIND PEOPLES**

An additive to chewing tobacco, popularly known as *chuna*, can lead to blindness. Children view these pouches, which contain calcium hydroxide. If the pouch burst suddenly, the calcium hydroxide gets sprayed around and can enter the eyes where the paste get stuck causing extensive damage. Calcium hydroxide damages the surface of the eye, including the cornea. The tear system gets completely destroyed and the eye becomes dry, leading to complete blindness. These cases have increased during last few years as calcium hydroxide began to be sold in easy-to-carry pouches. Pressure build up in these pouches as people press them and they burst with a lot of force when they are opened, thus spraying the contents into the eyes.

#### **SMOKING LEADS CHRONIC OBSTRUCTIVE PULMONARY DISEASE**

Once considered a “smoker’s diseases,” chronic obstructive pulmonary disease (COPD) is now affecting even those who smoked indirectly, mainly due to rising levels of indoor and outdoor air pollution. According to WHO, more than 210 million people currently have COPD, while 3 million died of the disease in 2005. By 2030, it is likely to become the third leading cause of death worldwide. Smoking remains the main cause of COPD. *Beedis* are more likely to cause COPD than cigarettes, in India, *beedis* are more popular than cigarettes. The findings point to the additional role of indoor and outdoor pollution in causing and aggravating COPD. Use of fuels like kerosene, wood and biomass in ill ventilated kitchens has been identified as a major factor. While the increasing number of smokers remains a matter of concern, rapid urbanization and high levels of pollution are likely to compound the problem.

#### **VANITY HELPS TO QUIT SMOKING**

What do we think scares people more, sudden death or baldness? It’s vanity that wins each time. The fear of losing hair and developing premature wrinkles are more likely to make smokers quit or cut down than killer attacks and cancers, reports a study of the impact of the cigarette pack warnings published in the *Journal of Experimental Social Psychology*. A study of smokers between the ages of 17 and 41 in the US, Switzerland and Germany showed that instead of making smokers quit, death-related anti-smoking messages prompted them to light up more often to cope with the inevitability of death. Warnings unrelated to death – such as ‘smoking makes you impotent’, ‘smoking makes you unattractive’, ‘smoking brings you and the people around you severe damage’ – were found to be more effective in changing attitudes. Social messages worked best among young smokers who took to it to ‘fit in’. Studies in the past bear out that when done well, the impact of warnings among young smokers in New York brought down rates among 15 to 19 olds from 29 per cent in 2002 to 19 per

cent in 2007. A school-based study in Australia (Addiction, 2008) reported that graphic warning labels on cigarette packs are noticed by most adolescents and helped to reduce smoking among them. In Canada, graphic health warnings have already contributed to an overall 3 per cent drop in smoking rates. In India, where some 250 million people consume tobacco, a similar drop in numbers would translate into 6 million people quitting tobacco use. This, however, is not likely to happen. India's tobacco warnings are easily the most ineffective in the world and, like the previous 'Statutory Warning: Cigarette Smoking is Injurious to health', are not likely to have any impact on smoking rates. Everyone knows smoking is bad for health, that it causes lung cancer in an unlucky few and heart attacks in some others. Few, however, give thought to how it can kill a non-smoking partner or an unborn child (it is well established that smoking cannot only cause impotence but also abortions). In India, 57% men and 10.9 per cent women use some form of tobacco, which kills 10 lakh people – 2,500 people die each day – annually. The point of warnings is to make people aware of the health consequences and make an informed choice. A four-country study comparing warning labels from Australia, Canada, the UK and the US (*American Journal of Preventive Medicine, 2007*) found that 84 per cent smokers in Canada, where pictorial warnings are required, considered labels as a source of health information, compared with 47 per cent in the US, where text-only labels are required. Vanity, in more cases than addiction, stops people from kicking the butt. Many of us are afraid that we will put on weight if they stop smoking. But this need not be an excuse to stay addicted. We can keep our health and a trim body if we plan our 'Quit Smoking' operation wisely.

There are several reasons why smoking keeps our weight down:

- It raises metabolism rate slightly and heavy smokers burn up to 200 calories a day.
- Nicotine kills hunger as smokers replace snacks with cigarettes. When you are trying to quit, you turn to snacking not only for emotional support, but also because it eases the oral fixation.
- Some studies have shown that nicotine could interfere with the release of insulin. The hormone controls glucose levels of the blood. When nicotine is withdrawn, a person will become slightly hyperglycaemic, and the body and brain may slow down the hormones and other signals that trigger feelings of hunger. On an average most people gain three to five kilos after quitting smoking. This can be avoided by a few simple lifestyle changes.

**Pick the right day to quit:** Try giving up at a time when you aren't stressed. Stress increases your urge to smoke and if you resist that you will probably take comfort in food. Also, try to not quit during the festive season as that's when you will be even more tempted to give into high-fat, sugary treat.

**Beat water retention:** When your body is hooked to nicotine, its acidic balance is disturbed. When you give up, it stores water. Contradictory to how it sounds, drinking plenty of water will help eliminate excess water build-up. If your body is assured that it will be given a constant supply of water, it will no longer hold on to water. Increase your water intake by one litre a day and even more if you are already overweight.

**Avoid alcohol:** Alcohol contains empty calories and usually serves as a trigger to smoke.

**Start exercising before you quit:** You need at least a half hour of exercise, five days a week. It doesn't have to be a high intensity aerobic workout – a brisk 30 minute walk will do. You can even break it into shorter sessions. Once you actually quit smoking, you may need more than 30 minutes of exercise. A workout is also a great way to beat cravings. If you're itching for a smoke, get out for a walk. It will also reduce stress, which prompts smoking.

**Work on your food habits:** Change your eating habits gradually, anything drastic can add to the stress. Healthy snacks and light munchies is just what you need when you crave a smoke. Lean on cucumber and carrot sticks, fat-free popcorn, fruit, buttermilk, fat-free yoghurt, herbal teas, hot cocoa with skimmed milk, puffed rice, bread sticks and sugarless chewing gum.

**Avoid caffeine:** Avoid excessive drinking of coffee, tea and soda. Nicotine withdrawal will make you jittery and nervous, and the caffeine will only make nicotine withdrawal worse. Also turn away from sugar and unhealthy starches. If you feel you must have sweets, go for sugarless and fat-free ones.

**Take one challenge at a time:** People who quit smoking often decide it's time to clean up other areas of their lives as well. If you have too many self-improvement projects at once, you run the risk of failing at all of them. Deal with one problem area at a time.

**GLOBAL ISSUE:** Now that the ill-effects of tobacco consumption has been clearly established, there is a global awakening concerning the issue. The World Health Organisation (WHO) has selected

“Tobacco Health Warnings” as the theme for the World No Tobacco Day on May 31. On that day and throughout the following year, WHO will encourage governments to adopt tobacco health warnings that meet all the criteria for maximal effectiveness, including that they cover more than half of the pack, appear on the front and back of the pack and contain picture. India’s tobacco warnings are easily the most ineffective in the world and, like the previous ‘Statutory Warning: Cigarette Smoking is Injurious to Health’, are not likely to have any impact on smoking rates. Graphic warnings need to educate people and not become grim reminders of disease and death that usually get blocked out. The warnings in India do neither: they are a bad joke that only the tobacco industry is laughing at.