



# HIGH-LIGHT



## ALCOHOL AND DRUG NEWS BRIEF FOR EMPLOYERS

February 2006

### Puff, the magic dragon

**Are we doing enough about tobacco addiction in the workplace ?**



According to the National Council Against Smoking , 22% of South Africans above the age of 15 are smokers. This amounts to 5.35 million smokers ! The prevalence of smoking is highest in the Northern Cape followed by the Western Cape. Male smokers heavily outnumber their female counterparts and in many provinces there are more than double the number of male smokers compared to females.

NCAS reports that since tax on tobacco products increased sharply since 1990, the number of cigarettes sold per year dropped from about 40 billion in 1990 to about 25 billion in 2001. Due to lifestyle differences ( eg health awareness, media accessibility, literacy, etc) between the various sectors of our population one could easily postulate that these reductions occurred less among the poor masses than amongst higher income groups. This is often evident when **SANCA (WC)** presents addiction sessions with groups of employees most of whom are in middle to lower income brackets : Due to the fact that this habit is still relatively unstigmatized, one frequently finds that during the presentation of alcohol and drug sessions, requests for advice and guidance on quitting smoking occur more regularly compared than those for other addictive substances.

*In this edition of High-Light we take a closer look at some of the more common health effects of this life threatening habit.*

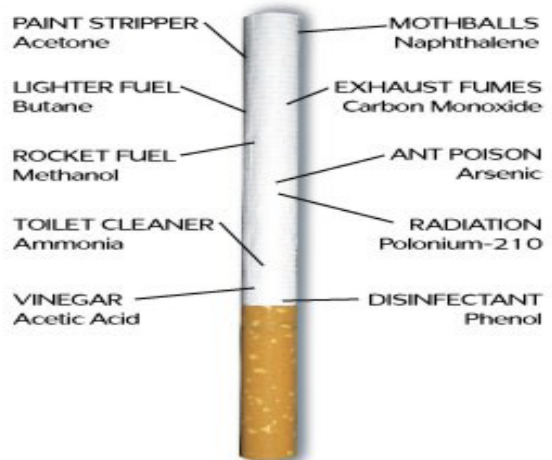
### The constituents of tobacco smoke

Tobacco is related to the potato and comes from the dried leaves of *Nicotiana Tobacum* plant. The smoke is made up of the "sidestream smoke" from the burning tip and the "mainstream smoke" from the filter or mouth end. Tobacco smoke contains **tar** and **gas** which in turn, contains over 4,000 different chemicals , including nicotine, benzopyrene, carbon monoxide and ammonia – about 60 of these chemicals are known cancer –causing agents.

Amongst other things the tar is responsible for the yellow staining of the teeth and bad breath and is deposited deep into the lungs when inhaled.

Many of the poisonous gasses are present in higher concentrations in "sidestream" than in "mainstream" smoke because of the filtering effect at the mouth end.

#### Some of the Poisons in Tobacco



Picture courtesy of The National Council Against Smoking

**Nicotine** itself is a powerful stimulant drug which in pure form and at high concentrations can be fatal. It mixes with the tobacco smoke and reaches the brain within under ten seconds, increasing the heart beat



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and blood pressure and constricting arteries and veins.

### **Carbon Monoxide**

This is the stuff which kills suicide victims who gas themselves in their cars. With smoking, it's simply done over a longer period. Nicotine binds to the haemoglobin more easily than oxygen, forcing the blood to carry less oxygen.

#### **How the tar fills up the lungs**

If you're a smoker try this :  
Draw the cigarette smoke into your mouth and hold it there. Now put a clean white handkerchief tightly over your mouth ( in single ply ) Force out the smoke through the handkerchief. Note the brown discoloration on the handkerchief. Now repeat the exercise but this time, inhale the smoke into your lungs as you would normally do. Place the hanky over your mouth and again force out the inhaled smoke. Note that the stain is now much lighter in colour.  
Guess where that tar was left behind ?

### **The role of smoking in heart and lung disease**

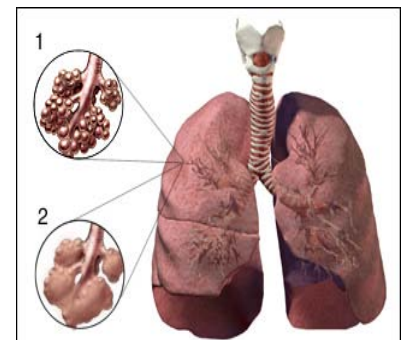
Nicotine and carbon monoxide are the main culprits in coronary heart disease. Nicotine stimulates the release of adrenaline, a powerful natural stimulant which increases the heart beat and blood pressure – the heart now requires more oxygen. Nicotine also narrows the blood vessels in the extremities ( hands and feet so that the heart has to work even harder to get the blood to these areas.

But at the same time carbon monoxide reduces the amount of oxygen carried by the blood. In heavy smokers this may cause an oxygen reduction as high as 15 %. Nicotine furthermore stimulates the release of other chemicals in the blood which increases the "bad cholesterol " and lead to fatty deposits in the arteries, further obstructing circulation. The poor circulation, especially to the extremities, causes painful calve muscles and cold hands and feet .

### **Other physiological problems**

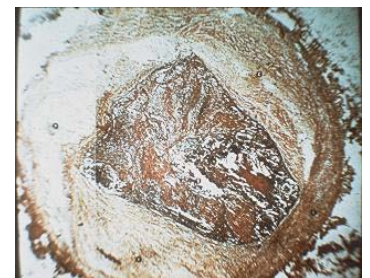
**Lung cancer** is the type of cancer most commonly associated with smoking. Lung cancer kills more people than any other type of cancer and 90% of these deaths are caused by smoking

The risk of lung cancer increases in direct proportion to the number of cigarettes smoked and by definition, the onset and overall duration of smoking.



1 Normal Air sacs in the lung  
2 Ruptured air-sacs reduce the elasticity of the lung, decreasing the capacity to absorb oxygen  
*Picture courtesy of Healthopedia.com*

The tar deposits and gases in tobacco smoke cause a narrowing of the small airways in the lung and a destruction of the minute air sacs. As the lungs gradually lose their elasticity less oxygen is absorbed and the smoker experiences breathlessness. This is known as



A blood clot lodged in an artery  
*Picture courtesy of Why Quit.com*

**emphysema.** This condition has a gradual

onset, is mostly irreversible and quite literally leaves the victim fighting for every breath at the slightest exertion.

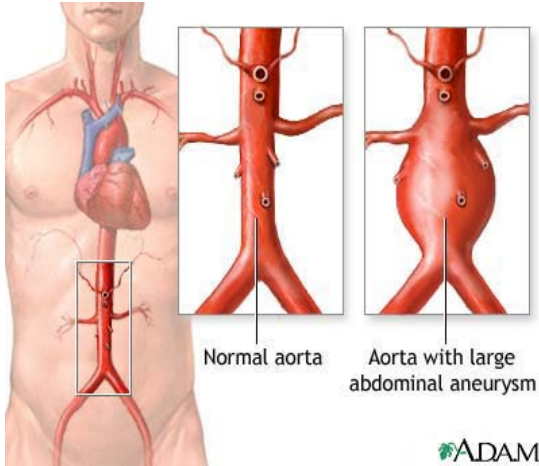
Smokers are more likely to die from ruptured **aneurysms** than non smokers. An aneurysm is a ballooning of the wall of the artery cause an increased risk of bursting or clotting. Smoking inflicts life-threatening damage to arteries, roughening and narrowing the smooth internal linings. The increased cholesterol levels and fibrinogen and platelet levels makes smokers blood 'stickier' and the blood can more easily form clots which could completely cut off the blood flow in



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arteries, with potentially fatal results.

Development of an aneurysm

Such a clot or obstruction may cause a **stroke** ( bleeding inside the brain ) leaving the victim with serious disabilities such as a speech impediment or impaired coordination.

### Nicotine and the brain

Nicotine has a chemical structure which closely resembles that of the neurotransmitter Acetylcholine. Nicotine stimulates those receptors in the brain which normally respond to Acetylcholine. These receptors are involved in numerous bodily functions such as muscle movement, breathing, heart rate, learning and memory. Acetylcholine jacks up mental alertness and concentration which is why smokers often light up before tackling work which requires mental focus.

Nicotine also increases the release of Dopamine ( the same pleasure regulating substance which is freely released when one uses Tik or cocaine ! ) The dopamine, in turn, causes feelings of reward and pleasure and affects mood, appetite and memory. Additionally, many systems such as the respiratory and cardiovascular systems are

sped up. Nicotine causes the pancreas to release glucose, causing smokers to be marginally hyperglycemic. ( high blood sugar)

### It's never too late to quit

Rolf Harris said: " If you really want something to be spontaneous, plan for it." Research has shown that smokers who planned their quitting fared better at staying clean :

- 1 Find a partner – *Try to find someone who wants to quit with you – the mutual emotional support will be a major source of encouragement .*
- 2 Set a date to quit – *Choose a day when you will stop altogether. Clear your desk, office or home of anything which may have any link to smoking- no matches, ashtrays, pipes, butts or cigarette packets. You can either stop all at once( cold turkey) or you can cut down gradually. For many people the latter option doesn't work.*
- 3 Make an inventory of the times that you used to smoke : *Upon waking up , with your breakfast, when you arrive at work , before or after a meal , when you are with friends, when having a drink. These are high risk periods and you need to work out ways of getting through this without lighting up.*
- 4 Get an exercise plan. *Age appropriate exercise will not only improve your circulation and release more natural "feelgood" chemicals in your blood stream but it will also assist your body in ridding itself of the accumulated toxins. However, have your blood pressure checked before embarking on an exercise plan.*
- 5 Coping with withdrawal. *The intensity of withdrawal may vary greatly among people but generally speaking, most people will experience negative symptoms when quitting after years of smoking. **Craving** may be intense the first few days. **Coughing** may be an indication that the lungs have begun cleaning itself. You may also experience **irritability, feelings of depression, weight gain, head aches or upset digestion.***

Remember the 4 D's : **Delay** lighting up the first one- give it time. **Deep** breathing, repeat this 4 or 5 times. **Drink** plenty of water. **Do** something else to get your mind occupied, preferably something you like.



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- 6 **Reward yourself** *Use the money which you would have spent on cigarettes to spoil yourself . Get yourself that special DVD, go watch a play, take the family on a weekend outing, subscribe to your favourite magazine. You will be more motivated to keep it up if you experience the tangible rewards.*

### What is Nicotine Replacement Therapy ?

Nicotine Replacement Therapy is a short term tool to assist users in quitting by releasing small doses of nicotine in the body to combat the craving and other negative effects of sudden smoking cessation. This is done without the accompanying tar, gasses and other toxins which is inhaled during smoking. The success rate of NRT used in isolation is generally low ( not more than 20 % ) and research has shown that this tool works best in conjunction with some form of personalized support, like counseling. NRT is available in various forms :

- Nicotine gum – These are available in 2 mg and 4 mg strengths and are more suitable for occasional smokers ( < 10 cigarettes per day)
- Nicotine patches – These are nicotine-impregnated patches which are usually indicated for heavier smokers ( more than 10 cigarettes per day ) They are available in 5mg, 10 mg and 15 mg doses. They last either for 16 hrs or 24 hrs and should preferably be applied first thing in the morning.
- Inhalator – This is available as a plastic container with nicotine cartridges that fit into the end. It is drawn in like a cigarette but the nicotine gets absorbed through the mucus membranes rather than through the lungs
- Nasal spray – This is a nicotine solution which is sprayed directly into the nose. An advantage of the spray is that it is rapidly absorbed and peaks in the bloodstream within 10 – 15 minutes.
- Bupropion ( Zyban SR) This product works by preventing the re- uptake of noradrenaline, dopamine and serotonin and it is also a nicotine antagonist. It has powerful anti –

depressant properties and it has been observed that depressed patients treated with this drug found it easier to quit smoking. Treatment should be started one week prior to quitting and a full treatment course lasts about 7 – 12 weeks. Since it is likely to raise blood pressure and may interact with MOA inhibitors , Zyban should not be used without medical supervision.

### And if you still doubt whether it was worthwhile, check the benefits

- Day by day your risk of cancer and heart attack and atherosclerosis is diminishing
- You will feel fitter and breathe more freely.
- Your clothes, hair and breath will no longer smell like a barroom.
- You will have more money in your pocket
- You will no longer be directed to zones for smokers only and feel like an outcast in public places
- Your teeth will be whiter
- Your self confidence will have been boosted by this bold exercise .

For more information :

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