For centuries tobacco was highly regarded for its purportedly vast range of medicinal uses — from treatment of head lice to haemorrhoids, hysteria to tetanus — its spectrum of potential therapeutic applications far exceeded any modern-day drug. The first documented association between smoking and illness was for lung cancer in the 1950s¹, which soon led to a widened interest in other smoking related health diseases. Today smoking is undoubtedly the leading risk factor for premature death. Approximately 5 million people die annually from smoking and another 600,000 deaths result from the effects of second-hand smoke². In Singapore, the smoking prevalence approximates 15% among adults and 6% among youths (13-15 years old).³ Eight out of ten smokers start smoking during adolescence. Those who smoke during adolescence are 16 times more likely to become adult smokers.⁴
Adverse Effects of Smoking
Some of the more commonly recognised adverse effects of smoking include increased risks of various cancers, cardiovascular and respiratory diseases, but the list continues. We see from the diagram below that smoking impacts nearly every body organ.

HEALTH CONSEQUENCES CAUSALLY LINKED TO SMOKING

- Chronic Diseases
  - Stroke
  - Blindness, cataracts, age-related macular degeneration
  - Congenital defects-maternal smoking, anencephaly, clefts
  - Pneumonia
  - Coronary heart disease
  - Chronic obstructive pulmonary disease, tuberculosis, asthma, and other respiratory effects
  - Atherosclerotic peripheral vascular disease
- Cancers
  - Trachea, bronchus, and lung
  - Liver
  - Pancreas
  - Stomach
  - Colon/rectal
- Other
  - Male sexual function – erectile dysfunction
  - Rheumatoid arthritis
  - Immune function
  - Overall diminished health

Therefore, active measures against smoking is of utmost importance with an enormous potential to improve overall public health. Risk of coronary heart disease decreases 50% after 12 months of smoking cessation. The relative risk of developing chronic obstructive pulmonary disease, lung cancer and stroke also decreases in those who quit smoking. Smoking cessation treatment should be integrated into the management of patients, particularly those with respiratory diseases in whom the urgency to stop smoking is even higher.

Unfortunately, the highly addictive nature of nicotine makes smoking cessation easier said than done. Nicotine binds to acetylcholine receptors in the brain, which stimulates an increase in dopamine release. This gives rise to the reward sensation that smokers experience.

Nicotine withdrawal syndrome (nicotine craving, irritability, anxiety, difficulty with concentration, sleep disturbance) is a major reason for relapse in smokers who make a serious attempt to quit, among other factors like social influences or presence of depression.

Consequently, treating smoking addiction often poses a bigger challenge than treatment of the disease itself. Patients who attempt to quit smoking unassisted generally achieve low success rates (3-5%).2 Higher success is seen among those who seek professional help. Even then, multiple attempts are often required before long term abstinence is achieved.

The key strategies for smoking cessation include behavioural treatment and pharmacotherapy. Although each is effective on its own, combining both techniques is usually recommended to improve efficacy. Medications commonly used include nicotine replacement therapy (available in different forms), bupropion and varenicline.

Nicotine exposure also causes upregulation of nicotinic receptors which leads to dependence, tolerance and withdrawal symptoms. The degree of dependence can be assessed using the Fagerström Test for Nicotine Dependence. (Table 1)

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How soon after you wake up do you smoke your first cigarette?</td>
<td>Within 5 min</td>
<td>3</td>
</tr>
<tr>
<td>6–30 min</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>31–60 min</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>After 60 min</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>2. Do you find it difficult to refrain from smoking in places where it is forbidden?</td>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>3. Which cigarette would you eat most to give up?</td>
<td>The first one in the morning</td>
<td>1</td>
</tr>
<tr>
<td>Any other</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>4. How many cigarettes per day do you smoke?</td>
<td>≤10</td>
<td>0</td>
</tr>
<tr>
<td>11–20</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>21–30</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>≥31</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>5. Do you smoke more frequently during the first hours after waking than during the rest of the day?</td>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>6. Do you smoke if you are so ill that you are in bed most of the day?</td>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total score</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
</tr>
</tbody>
</table>

TABLE 1: FAGERSTRÖM TEST FOR NICOTINE DEPENDENCE

CANCER FOCUS

LUNG CANCER
RISK OF LIGHT & INTERMITTENT SMOKING

The general population is nowadays well aware that tobacco smoking dramatically increases the risk of developing lung cancer. However, light and intermittent smokers pose a serious health challenge as they tend not to consider themselves “smokers” and consequently ignore the significant health risks.

A French national survey suggested that 34% of all respondents (N=1463, aged 40–75) believed that smoking ≤10 cigarettes per day does not carry any risk of lung cancer. However, the fact remains that the lung cancer risks for light smokers are substantial, while lower than daily smokers. There are needs to highlight the substantial lung cancer risks for light smokers, as most of light smokers tend not to consider themselves “smokers” and ignore the significant health risks.

The proportion of never-smokers among lung cancer patients has increased dramatically. It’s not just smokers who are at risk for lung cancer.

Smothing is known as the largest single preventable cause for early death and disease in most developed nations including Singapore. Over the years, studies have confirmed the cause-effect association of smoking incidence to major health impacts such as lung cancer, cardiovascular disorder and chronic obstructive pulmonary disease. It is heartening that parallel to active anti-tobacco measures such as, tax increase, ban on advertising and graphic health warnings, the prevalence of cigarette smoking is declining in Singapore in the recent times. Nonetheless, smoking behaviour is widely discerned in young adults and it appears that approximately 80% of adult smokers would have begun their smoking tendency even before the age of 21 years.

Evidence points to such an early experimentation as one of the major predictors of smoking liability or dependence in later life. This knowledge makes it crucial to understand the determinants of smoking in adolescent and young adult populations so as to reinforce effective campaigns and interventions targeting the vulnerable populations.

The socio-ecological highlights from this purposive sampling survey are as follows:

Gender prevalence of smoking behaviour among youngsters in Singapore follows observations worldwide. Across all ages, races and ethnicities, cigarette smoking is found to be more common among males than females. While the number of male smokers continue to predominate over the count of female smokers, according to World Health Organization (WHO)’s report on the impact of tobacco use on women’s health, this gender gap is narrowing in the last few decades.
As identified by the SCS survey, a majority of the young smokers experimented with smoking during their adolescence i.e., at the age of 12-14 years and had established the habit of regular smoking around 18 years of age. Humans are social animals. An individual's decision to experiment with smoking or become a regular smoker well depends on major as well as minor causal factors surrounding him/her. According to the theory of learning and social behaviour, smoking is a socially learned activity that is acquired by observing or following others in the society.

**Age Range of Initial Smoking Experience for Smokers Aged 18-24**

<table>
<thead>
<tr>
<th>Initial Smoking Experience</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1 years old</td>
<td>7%</td>
</tr>
<tr>
<td>1-4 years old</td>
<td>10%</td>
</tr>
<tr>
<td>5-11 years old</td>
<td>25%</td>
</tr>
<tr>
<td>12-16 years old</td>
<td>45%</td>
</tr>
<tr>
<td>17-19 years old</td>
<td>55%</td>
</tr>
</tbody>
</table>

A variety of psychosocial reasons influences smoking tendency in adolescence. In its simplest form, smoking is accepted as a norm in many social settings. This can be reinforced by conditioning of environmental cues – especially if there is a tendency to imitate the smoking behaviour of peers, siblings or parents. At times, the action of smoking may be seen as a bonding opportunity to integrate into the social domain of friends with similar interests. In a fast-paced environment, smoking may be construed to provide individual or personal gratifications.

**Peer Influence in Young Adults’ Initiation to Smoking**

85% of current smokers picked up smoking from their friends. Most of them picked it up during Secondary or Tertiary education.

As much as our quantitative study provided interesting insights on young smokers’ perceived meaning of smoking, it also reiterated their understanding of cigarette smoking as a risky health behaviour.

Among the regular and occasional smokers, 50% - 67% had tried to quit smoking in the last 12 months. On an average, the smokers identified in this survey had tried to quit smoking at least four times. When asked about their intentions to quit smoking in the future, about 12%-36% indicated that they planned to quit in the following month, another 50%-66% had plans to quit sometime in the future and only 14%-22% responded otherwise.

### From the 'Daily Smokers' Perspectives on Smoking

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel relief of stress or tension when I smoke</td>
<td>70.4%</td>
</tr>
<tr>
<td>Smoking relieves my nervousness, fear or anxiety</td>
<td>68.8%</td>
</tr>
<tr>
<td>I feel happy and relaxed when I smoke</td>
<td>61.9%</td>
</tr>
<tr>
<td>I smoke in social situations</td>
<td>70.5%</td>
</tr>
</tbody>
</table>

**Personal/Environmental Factors with Impacts on Smoking Cessation or Modification of Smoking Behaviour**

- **Smokers** are 5 times more likely to quit smoking than those who quit by willpower alone. Smoking involves three aspects of dependence: physical, psychological and behavioural dependence. Counselling addresses the behavioural and psychological aspects of quitting while medication aids to reduce withdrawal symptoms.

### Common Personal or Social Attributes Found in the Following Subgroups

- **Smoker**
  - Having a close friend who is a smoker
  - Having support and encouragement from peers, friends and family

- **Ex-smoker/Non-smoker**
  - Ability to say no to smoking even if others around are smoking
  - Having a great deal of self-confidence

**Attributes Towards Smoking for Ex-smoker or Non-smoker**

- **It is an expensive habit and can save a lot of money**
- **Can feel healthier and happier**
- **Because of health awareness, campaigns and educational information**

**SUMMARY**

Most smokers started smoking when they were teens. Some common reasons for initiating smoking are listed as below.

- **Parental smoking**: When one of his/her parents is a smoker, a youth would believe that smoking is socially acceptable. In a survey conducted by the Health Promotion Board (HPB), a significantly higher percentage of youth smokers (58%) were reported to have at least one parent who smoked as compared to non-smokers (27%).

- **Peer pressure**: A study conducted by HPB found that 90 per cent of youth smokers had at least one close friend who is a smoker.

- **Media influence**: Youths may also view smoking as a stylish and desirable if their favourite celebrity or movie character is a smoker.

- **Misinformation**: Many smokers downplay the detrimental health effects of smoking and perceive smoking as a form of stress-reliever. Some youths also underestimate the addictive nature of nicotine and believe they can quit smoking anytime.

Smokers who adopt the combination method are 10 times more likely to quit smoking than those who quit by willpower alone. Smoking involves three aspects of dependence: physical, psychological and behavioural dependence. Counselling addresses the behavioural and psychological aspects of quitting while medication aids to reduce withdrawal symptoms.

Behavioural therapies commonly used in smoking cessation are Motivational Interviewing (MI) and Cognitive Behavioural Therapy (CBT). Motivation remains a crucial factor in determining the success of treatment. MI aims to increase person’s motivation levels and self-confidence in quitting by exploring smokers’ thoughts and feelings related to the change in a non-judgemental way.

At Singapore General Hospital (SGH), the Smoking Cessation Programme has helped 70 patients to quit smoking successfully in the past three years. SGH is currently planning to develop an inpatient Smoking Cessation Programme to help smokers to quit smoking during their hospitalization.

For more details call 6321 4377.
SINGAPORE CANCER SOCIETY
NEW VOICE CLUB SUPPORT GROUP

55 year old Mr Sim Teong Choon, had been smoking for 39 years before he quit at the age of 52. He used to smoke up to 2 packets a day.

Mr Sim started smoking after he got influenced by his peers at the tender age of 13. He tried to quit smoking twice, but each attempt ended up with him smoking more than he did before he tried quitting. He suffered from coronary heart disease at the age of 50 and underwent surgery. At the age of 52, he was diagnosed with throat cancer. He was told by his doctor that he would only have 6 months left to live if he did not undergo surgery. With a 50 per cent chance of survival rate, the father of 2 underwent radiotherapy and surgery to remove cancerous lymph nodes. After surgery, he quit smoking.

It was not an easy recovery for Mr Sim post-surgery. He faced occasional breathing problems and could hardly move his neck and shoulder as they felt tight and weak. He went for physiotherapy exercises to make his neck and shoulder muscles stronger and more flexible. Soon he was able to regain his shoulder and neck movement functions.

He is a member of Singapore Cancer Society’s Support Group, New Voice Club. The New Voice Club consists of members who have had some form of laryngeal cancer and have undergone surgical treatment (laryngectomy). Rehabilitation aims to help patients learn how to speak again, with or without speech devices. The club renders emotional support to members and their families in coping with a ‘new voice’ after surgery. Speech practice sessions conducted by its members have enabled many to regain their ability to communicate with others. With this support, Mr Sim feels encouraged and is able to cope with this challenging phase of his life.

Using himself as an example, Mr Lim has been advocating anti-smoking to his younger colleagues in his workplace.

The New Voice Club consists of members who have had some form of laryngeal cancer and have undergone surgical treatment. After having their vocal cords removed, patients lose their voices completely. Rehabilitation aims to help patients learn how to speak again, with or without speech devices. The club renders emotional support to members and their families in coping with a ‘new voice’ after surgery. Speech practice sessions conducted by its members have enabled many to regain their ability to communicate with others.

For more details call 1800-727-3333 or email supportgroup@singaporecancersociety.org.sg

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Singapore Cancer Society produces a monthly e-newsletter ‘Society News’ with updates on SCS happenings, campaigns, events, beneficiaries and fund-raising initiatives. To subscribe: enquiry@singaporecancersociety.org.sg