

MIND & BODY

Clear the air about 'safer' cigarettes

Slick design, slimmer sticks and charcoal filters – HSA tests show these products are just as harmful

Poon Chian Hui

Cigarettes marketed as "slim" may come across as less harmful, perhaps because the products come in softer hues of white and pink rather than bold black or red.

Despite the slick designs, they are not much different from regular cigarettes in terms of the toxic substances they contain.

Tests by the Health Sciences Authority (HSA) found that cigarettes

across the board have similar levels of tar and nicotine, which are linked to health risks and addiction.

"Comparable tar and nicotine yields were observed in the different variants tested," said Dr Cheah Nuan Ping, director of HSA's cigarette-testing laboratory.

The lab runs tests on cigarettes on sale in the local market, with every variety tested at least once a year.

In Singapore, a cigarette stick must not yield more than 10mg of tar and 1mg of nicotine.

The average amount of tar found in cigarettes sold in Singapore is 7 to 9mg, while the average for nicotine is 0.7 to 1mg.

Dr Cheah noted that there are about 240 varieties of cigarettes

sold in Singapore, up from over 130 about a decade ago.

Data from market research firm Euromonitor similarly noted that local distributors have been bringing cheaper brands into Singapore, creating "stiff competition" for the traditional big companies.

Despite that, global companies remain the dominant players in 2016. One reason is the "regular launch of new products, which is sparking greater consumer interest", Euromonitor said in its latest report about tobacco in Singapore.

Overall, the local consumption of tobacco has been fluctuating between 2.3 million kg and 3.2 million kg per year in the past decade, based on Singapore Customs statistics.

Some 3.03 million kg of duty-paid tobacco were released for retail sale in Singapore for the latest financial year ended March 31.

This is up from the previous financial year, which saw 2.55 million kg of tobacco being brought in.

Cigarettes form the bulk of these products, with *ang hoon* – loose tobacco leaves – a distant second, followed by smoking tobacco and beedies, or hand-rolled cigarettes, figures show.

A PERSISTENT HABIT

Despite stricter laws, smoking prevalence here has hovered between 12 and 14 per cent since 2004, with last year's rate at 12 per cent.

This indicates that Singapore has not been successful at reducing the number of smokers over the years, said Dr Jeremy Lim, a partner in Oliver Wyman global health practice.

"We can conclude that there are

CHANGING REASONS continued on B9



A designated smoking point in Yishun. In Singapore, people tend to get their fix at places where they eat out, such as coffee shops. ST FILE PHOTO

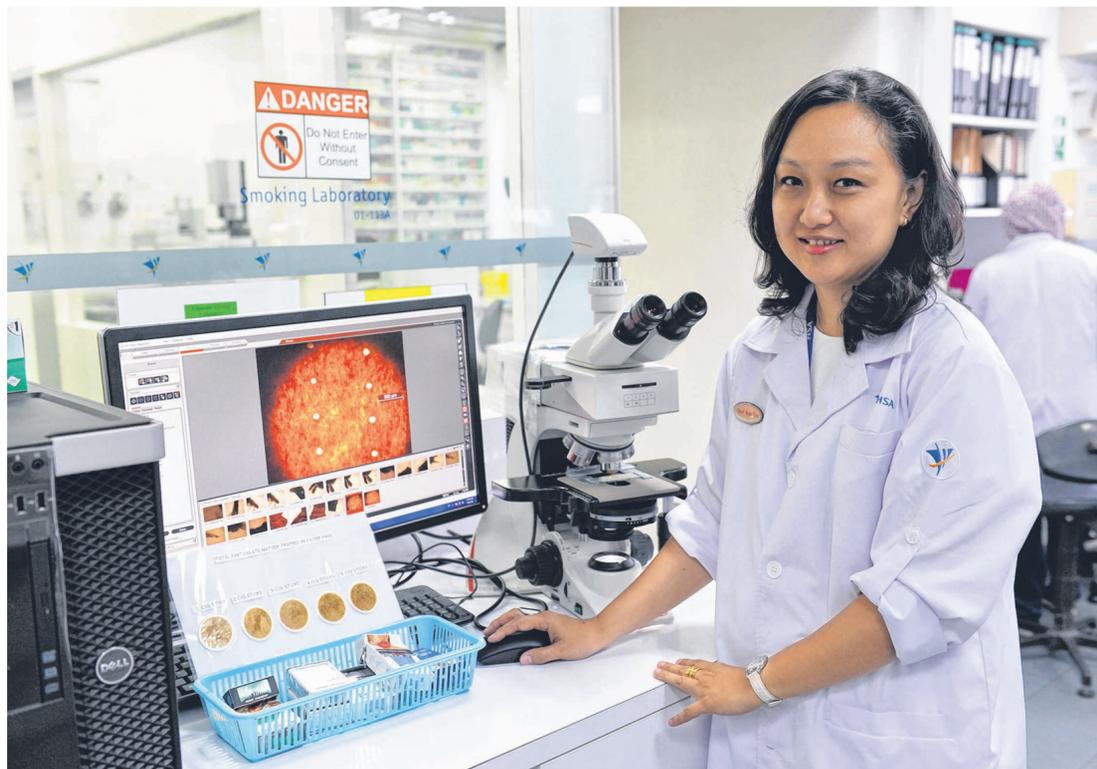
How cigarettes are tested



SCAN TO WATCH



<http://str.sg/cigtst>



Dr Cheah Nuan Ping, director of HSA's cigarette-testing laboratory, said that although cigarettes sold here meet prescribed tar and nicotine limits, "there is no safe cigarette in the world". The limits are part of regulations Singapore has put in place – and tightened – to discourage smoking here. ST PHOTO: KHALID BABA

Stringent lab tests on tobacco products in S'pore

On a very busy day, Ms Michelle Yong can smoke up to 60 cigarettes at work.

She does this without putting a single stick to her lips.

Instead, the puffing is done by a large smoking machine at the cigarette testing laboratory, where she works as a senior laboratory officer.

About 350 types of tobacco products sold at retailers here are tested at this laboratory at the Health Sciences Authority (HSA) in Outram Road. It is the only such facility in Singapore.

What gets analysed are the nicotine and tar yields in each cigarette stick, which must not exceed 1mg and 10mg respectively.

The lab checks are part of a framework regulating an industry that recorded over \$1.6 billion in retail sales here in 2016.

Dr Cheah Nuan Ping, director of HSA's cigarette-testing laboratory, said multiple variants of cigarettes can be tested at the same time. A brand may produce several types of cigarettes, such as mentholated ver-

sions, and each type or version is referred to as a variant.

It takes about five days to complete tests for one batch, she added.

During the testing process, cigarettes are first marked to indicate the point where the stick should be smoked down to.

The marked sticks are placed in a "conditioning cabinet" for at least 48 hours so that they can be smoked uniformly and continuously by the smoking machine.

The machine automatically lights up each cigarette with lighters, up to 20 sticks at a time.

The tar and nicotine emitted are collected on filter pads, from where they are extracted and analysed using methods such as gas chromatography. If a particular variant of a cigarette is found to have exceeded tar and nicotine limits, another round of tests will be done.

If the cigarettes still do not pass muster, the company will be asked to recall the affected batch.

Tar and nicotine limits were last tightened in 2013 – from 15mg to

10mg for tar, and 1.3mg to 1mg for nicotine. The amounts have been gradually lowered since 1989, when they were first imposed here.

Dr Cheah said that although cigarettes sold here meet prescribed tar and nicotine limits, "there is no safe cigarette in the world".

The limits are part of the web of regulations that Singapore has put in place – and tightened over the years – to discourage smoking here.

In 2013, misleading terms, like "mild" or "light" on cigarette packs were banned, and new graphic warnings were introduced.

Tobacco taxes went up by 10 per cent in 2014, and in the following year, e-cigarettes were banned.

In 2016, restrictions on public smoking were extended to reservoirs and over 400 parks, on top of those at coffee shops, entertainment nightspots, covered walkways and multi-storey carparks.

More recently, the excise duty on all tobacco products was again raised by 10 per cent in February.

Emerging and imitation tobacco

products, such as smokeless tobacco products, chewing tobacco and shisha, were also outlawed.

The cigarette testing lab that Dr Cheah runs, which is a modest outfit staffed by one or two people, also tests samples of contraband tobacco seized by Singapore Customs.

Last year, 2.8 million packets of contraband cigarettes were seized, and four cigarette syndicates were busted, official figures show.

Other tobacco products, such as cigars, are not tested in Singapore.

An HSA spokesman said: "The Ministry of Health, together with HSA, will continue to review the need for testing of other tobacco products."

The lab, which in 2009 was made a World Health Organisation Collaborating Centre for tobacco testing and research, will also continue supporting the "capacity building of similar laboratories in regional countries", the spokesman added.

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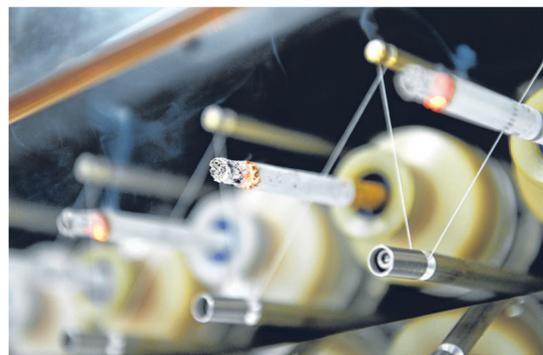
Rigorous checks

Cigarettes sold in Singapore have to meet tar and nicotine limits of 10mg and 1mg per stick respectively. The Health Sciences Authority runs tests on cigarettes in this four-step process.



1. Cigarettes are marked using a device to indicate when the smoking should stop – usually about 0.5cm from the cigarette butt.

2. The marked sticks are placed in a conditioning cabinet for at least 48 hours to ensure that the cigarettes can be smoked uniformly and continuously. This is because if a cigarette is too dry or moist, it may not burn properly.



3. Up to 20 cigarettes are fitted into a smoking machine, which automatically lights up the cigarettes. Tar and other chemicals are collected on filter pads as the cigarettes are puffed by the machine, which has an added function of collecting and analysing the carbon monoxide produced. The lab officer has to put on a special suit to prevent inhalation of second-hand smoke.



4. The filter pads are collected. The dark brown stains are what goes into a smoker's lungs. These substances are extracted from the filter pads using an organic solution and analysed. Any unused cigarettes are soaked in methanol to remove the nicotine before being disposed of.

ST Photos: Khalid Baba Source: HEALTH SCIENCES AUTHORITY STRAITS TIMES GRAPHICS

Lighting up a hot issue

FROM B10

new smokers every day, roughly the same as the number of smokers who died or quit," added Dr Lim.

In general, tobacco consumption hinges on three factors: the proportion of legal versus illegal tobacco, how much tobacco people use and how often they use it, he said.

Associate Professor Teoh Yee Leong, chief executive of the Singapore Clinical Research Institute, believes tobacco continues to be in demand here because the reasons for smoking have changed over the decades.

In the past, Singapore did not have a high level of sanitation and some people, for example, smoked to mask the stench of faeces and rubbish, Prof Teoh explained.

"Today, we are one of the cleanest cities in the world and our population, especially the younger ones, continue to smoke due to social pressure and because it is a form of affluence and enjoyment."

In Singapore, people tend to get their fix at places where they eat out, such as coffee shops. These places accounted for 36 per cent of retail volume sales of cigarettes in 2016, according to Euromonitor.

"Hawker centres and coffee shops remain the key contributors to sales due to their extensive presence and accessibility to consumers, who usually purchase them after a meal," added the firm. "Other prominent distribution channels include convenience stores and independent small grocers."

Prof Teoh said the smoking situation here is "definitely a cause for concern".

"Despite the various legal and community intervention over the years, the smoking statistics remain at above 10 per cent of the population," added the public health physician with more than 20 years' experience.

"This means that at least 10 per cent of our population, and more if we include those who inhale second-hand smoke, are at risk of the many complications related to smoking, such as cancer and heart disease."

DIFFERENT LOOK, SAME DANGER

Besides regular cigarettes, other varieties that can be found here include slim versions – supposedly to appeal to women – and those that come with a "charcoal filter".

Another example is the flavoured capsule cigarette, which has a tiny bead inside with flavoured liquid.

There are also mentholated cigarettes. A World Health Organisation (WHO) report released this year said menthol is currently the most commonly marketed flavour in tobacco products, with about 10 per cent of global market share. The rate is higher in Singapore, at over 25 per cent of the market, it added.

But none of these varieties are safer to smoke. "All tobacco products are harmful," said Dr Cheah.

The WHO report, for example, noted that people who smoke menthol cigarettes showed greater signs of nicotine dependence and are less likely to successfully quit the habit than non-menthol smokers.

Another fallacy is that cigarettes with so-called charcoal filters can remove the toxic substances.

During a visit to the HSA lab in June, Dr Cheah peeled apart such a cigarette to reveal tiny black granules inside.

These charcoal bits can end up in a smoker's lungs, according to past reports, including an article by The New York Times.

Moreover, most smokers are unaware of the tiny ventilation holes in cigarette butts and unknowingly block them when holding the stick to their lips, according to HSA. This leads them to inhale more nicotine and chemicals.

Associate Professor Josip Car from the Lee Kong Chian School of Medicine at Nanyang Technological University (NTU) noted that smoking not only directly causes chronic ailments such as diabetes, but also worsens the impact of such conditions.

"Those who smoke are up to 40 per cent more likely to develop Type 2 diabetes than non-smokers," said Prof Car, who is the director of the Centre for Population Health Sciences at NTU.

What's in that smoke?

After a cigarette is lit up, the temperature inside can hit as high as 950 deg C and, in the process, spew more than 7,000 toxic substances. A study released in May by the Health Sciences Authority on cigarettes sold in Singapore found high levels of the following:

Benzene

and 1,3-butadiene, which are emitted in the exhaust fumes of motor vehicles

Benzo(a)pyrene

commonly found in barbecued food and emissions from diesel engines

Carbon monoxide

an air pollutant

Formaldehyde

used in embalming bodies

Nicotine

the main chemical that causes addiction

Tar

a cocktail of more than 7,000 chemicals, though not the same as the tar used to make roads

Tobacco

Tobacco-specific nitrosamines, which may cause cancer

"The bad news doesn't stop there. It is more difficult for diabetic smokers to control their disease."

For example, he added, they are more likely to suffer complications such as heart disease and foot ulcers that may lead to amputations.

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ST FILE PHOTO