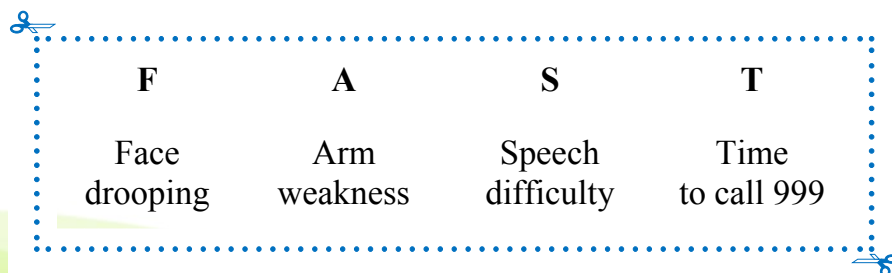


## Be Aware of “Brain Attack”

### Key Messages

- ※ Cerebrovascular disease is a group of diseases related to blood vessels supplying the brain. The most common presentation of cerebrovascular disease is stroke which accounts for an estimated 13.7 million new cases per year globally. In 2017, there were over 6.16 million stroke deaths worldwide.
- ※ In Hong Kong, cerebrovascular disease was the fourth commonest cause of death with 3 124 registered deaths in 2017. The Population Health Survey 2014/15 observed that 1.4% (1.7% for males; 1.1% for females) of land-based non-institutionalised persons aged 15 and above self-reported of having been diagnosed with stroke by a Western medical practitioner.
- ※ In May 2018, the Hong Kong SAR Government launched “Towards 2025: Strategy and Action Plan to Prevent and Control Non-communicable Diseases in Hong Kong” (SAP) with a list of committed actions. Of the 9 NCD targets to be achieved by 2025, all are related to stroke prevention and control, including Target 8: Prevent stroke (and heart attacks) through drug therapy and counselling.
- ※ Most stroke cases are preventable by leading a healthy lifestyle. To reduce stroke risk, members of the public are encouraged to pursue a healthy lifestyle that includes no smoking, having a balanced diet with at least 5 daily servings of fruit and vegetables, limiting salt intake to less than 5 grams per day, refrain from alcohol use, exercising regularly, maintaining a healthy body weight, and managing stress with healthy coping strategies. Also, be familiar with the F.A.S.T. warning signs of stroke.



## Be Aware of “Brain Attack”

Cerebrovascular disease is a group of diseases related to blood vessels supplying the brain. The most common presentation of cerebrovascular disease is stroke.<sup>1</sup> Major types of stroke are ischaemic stroke caused by a blood clot obstructing the flow of blood to the brain, and haemorrhagic stroke caused by a blood vessel rupturing and preventing blood flow to the brain. Without oxygen and nutrients carried by blood, brain cells would die. For transient ischaemic attack (TIA), or “mini-stroke”, it occurs when blood supply to the brain is interrupted by a temporary clot. Although TIA usually lasts for less than 24 hours and generally does not cause permanent brain damage, it increases the risk of a subsequent stroke developing. An international study of patients who had had a TIA or minor ischaemic stroke from 21 countries observed that about 9% of them developed non-fatal stroke (8.1%) or fatal stroke (1.1%) during the 5-year period.<sup>2</sup> Depending on the location of the obstruction or bleeding and how much or severe brain tissue is affected, stroke can lead to various degrees of disability, such as paralysis on one side of the body, speech problems, problems with bladder and bowel control, etc. A very severe stroke can cause sudden death.

### Global Perspectives on Stroke

Stroke is an important global health problem, with an estimated 13.7 million new cases and over 116 million of healthy years lost per year.<sup>3</sup>

In 2017, the Global Burden of Disease Study reported that there were over 6.16 million stroke deaths worldwide. Compared to 2007, the number increased by 16.6%. By types of stroke, the number of deaths attributed to ischaemic stroke, intracerebral haemorrhage and subarachnoid haemorrhage increased by 21.2%, 12.5% and 18.4% over the 10-year period, respectively (Table 1).<sup>4</sup>

Stroke can occur in anyone regardless of age including newborns and children, yet stroke is uncommon in people under 40 years old and predominantly affects elders. Apart from ageing, non-modifiable risk factors for stroke also include ethnicity, family history of stroke and genetic disorders (such as sickle cell disease). When stroke does occur, the most common cause is high blood pressure.<sup>1, 5</sup> An international study of risk factors for stroke found that 90% of acute ischaemic stroke and intracerebral haemorrhage worldwide are caused by 10 potentially modifiable behavioural and biomedical risk factors collectively. Apart from hypertension, they include smoking, unhealthy diet, physical inactivity, alcohol drinking, psychosocial stress, abdominal obesity, dyslipidaemia, diabetes mellitus and cardiac causes.<sup>6</sup> Accordingly, intervening upstream on a cluster of behavioural risk factors to induce parallel reductions in the prevalence of biomedical risk factors is one key strategy for prevention and control of stroke.

**Table 1: Number of deaths attributed to stroke globally 2017 and percentage increase from 2007 to 2017**

Types of stroke	Number of deaths (thousands)	Percentage increase, 2007–2017
Ischaemic stroke	2 747.4	21.2%
Intracerebral haemorrhage	2 974.9	12.5%
Subarachnoid haemorrhage	445.0	18.4%
<b>Total</b>	<b>6 167.3</b>	<b>16.6%</b>

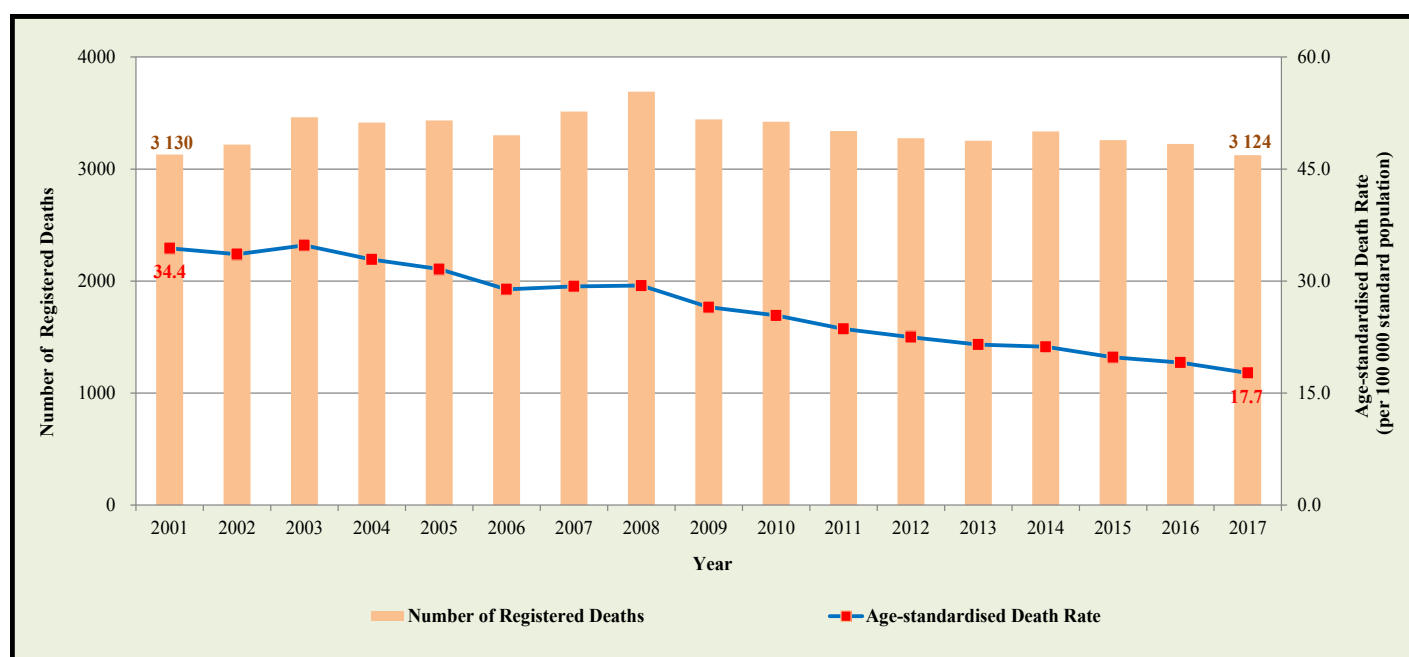
Source: Global Burden of Disease Study 2017

## Situation in Hong Kong

In Hong Kong, the age-standardised death rate of cerebrovascular disease per 100 000 standard population has nearly halved from 34.4 in 2001 to 17.7 in 2017. However, cerebrovascular disease remains as a major disease killer, claiming more than 3 000 lives annually (Figure 1).<sup>7</sup> In 2017, cerebrovascular disease was the fourth commonest cause of death in Hong Kong (or accounting for 6.8% of all registered deaths). Of 3 124 registered deaths due to cerebrovascular disease, 49.5% were males and 84.5% were elders aged 65 and above.<sup>7</sup> As a medical emergency requiring immediate treatment, cerebrovascular disease was responsible for over 25 800 episodes of in-patient discharges and deaths in all hospitals in 2017.<sup>8</sup>

Furthermore, the Population Health Survey 2014/15 conducted by the Department of Health (DH) observed that 1.4% (1.7% for males; 1.1% for females) of land-based non-institutionalised persons aged 15 and above self-reported of having been diagnosed with stroke by a Western medical practitioner. By age group, the prevalence of stroke increased from 0.2% for persons aged 35–44 to 7.8% for persons aged 75–84, whilst the prevalence was 5.7% for persons aged 85 or above.<sup>9</sup>

**Figure 1: Number of registered deaths and age-standardised death rates due to cerebrovascular disease, 2001–2017**



Sources: Department of Health and Census and Statistics Department

## Prevention and Control of Stroke

In light of ageing population, cerebrovascular disease will continue as one of the major contributors to the disease burden in Hong Kong. From a public health perspective, the best strategy to tackle stroke is primary prevention by promoting a healthy life-style that not only has the potential to decrease the incidence but also is likely to use far fewer resources than treating stroke and related complications. In 2018, the Hong Kong SAR Government launched “Towards 2025: Strategy and Action Plan to Prevent and Control Non-communicable Diseases in Hong Kong” (SAP) with a list of committed actions. Of the 9 NCD targets to be achieved by 2025, all are related to stroke prevention and control, including Target 8: Prevent stroke (and heart attacks) through drug therapy and counselling (Box 1).

The Government will step up efforts in promoting healthy diet and physical activity participation; enhance public awareness about the importance of primary stroke prevention; strengthen the health system at all levels, in particular a comprehensive primary care for prevention, early detection and management of stroke; as well as review and update drug lists and clinical protocols regularly to ensure equitable access by patients at risk of and with stroke to drugs and therapies of proven safety and efficacy. For more information about the SAP, please visit the Change for Health website at <https://www.change4health.gov.hk/en/saptowards2025/>.

### Box 1: 9 local NCD targets by 2025



#### Target 1

A 25% relative reduction in risk of premature mortality from cardiovascular diseases, cancers, diabetes, or chronic respiratory diseases



#### Target 2

At least 10% relative reduction in the prevalence of binge drinking and harmful use of alcohol (harmful drinking/alcohol dependence) among adults and in the prevalence of drinking among youth



#### Target 3

A 10% relative reduction in the prevalence of insufficient physical activity among adolescents and adults



#### Target 4

A 30% relative reduction in mean population daily intake of salt/sodium



#### Target 5

A 30% relative reduction in the prevalence of current tobacco use in persons aged 15+ years



#### Target 6

Contain the prevalence of raised blood pressure



#### Target 7

Halt the rise in diabetes and obesity



#### Target 8

Prevent heart attacks and strokes through drug therapy and counselling



#### Target 9

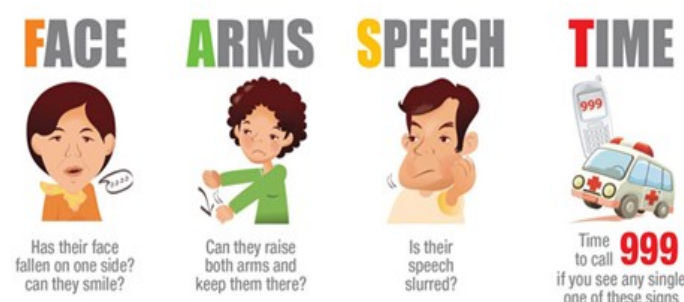
Improve availability of affordable basic technologies and essential medicines to treat major NCD



To reduce stroke risk, members of the public are encouraged to pursue a healthy lifestyle that includes no smoking, having a balanced diet with at least 5 daily servings of fruit and vegetables, limiting salt intake to less than 5 grams per day, refrain from alcohol use, exercising regularly, maintaining a healthy body weight, and managing stress with healthy coping strategies (such as practising deep breathing or talking to someone when feeling stress or anxious). Current smokers should note that stroke risk would reduce after quitting smoking and be comparable to that of non-smokers 5 years later.<sup>10</sup> For free professional counselling and information on smoking cessation, call the Integrated Smoking Cessation Hotline of DH at 1833 183. Regarding alcohol drinking, a study of 500 000 men and women in China observed that alcohol consumption uniformly increases blood pressure and stroke risk, and there is no protective effect of low levels of alcohol.<sup>11</sup> Drinkers are thus urged to recognise the harms associated with alcohol consumption (including that alcohol can cause cancer), and appreciate the benefits of cutting down or even stopping drinking alcohol. Adiposity is also found strongly associated with an increased risk of ischaemic stroke in Chinese adults, chiefly through its effect on blood pressure.<sup>12</sup> For Chinese adults in Hong Kong, they should aim to maintain a body mass index (BMI) between 18.5 and 22.9 kg/m<sup>2</sup>, and a waist circumference of less than 90 cm (~ 36 inches) for men and less than 80 cm (~ 32 inches) for women. Regular physical activity can decrease stroke risk by about 27%<sup>13</sup> through favorable effects on other vascular risk factors such as obesity, hypertension, hyperglycaemia and dyslipidaemia. Inactive persons who have not exercised in the past or for a while and those suffering from a chronic disease may consult family doctor and obtain a customised exercise prescription with appropriate recommendations on intensity, duration and frequency. Among middle-aged and

elderly men at higher risk of stroke because of other cardiovascular diseases or conditions (such as having a history of hypertension, high blood cholesterol levels, diabetes, heart failure or atrial fibrillation), a prospective study found that a healthy lifestyle pattern was associated with 69% and 68% reduced risk for ischaemic stroke and haemorrhagic stroke respectively.<sup>14</sup> For more information about health living, please visit the Change for Health website at <https://www.change4health.gov.hk/>, or call the DH's 24-Hour Health Education Hotline at 2833 0111. Also, be familiar with the warning signs of stroke (including "mini-stroke") and act fast if shown (Box 2) in order to improve treatment outcomes, minimise disabilities and reduce the risk of death.

#### Box 2: Warning signs of stroke



- Numbness of the face, arm and leg (especially on one side of the body)
- Sudden occurrence of a wry mouth and drooling
- Sudden slurring of the speech or trouble understanding
- Sudden and severe headaches
- Trouble seeing in one or both eyes
- Sudden difficulties in swallowing
- Dizziness, loss of balance or coordination, nausea and vomiting with no known cause

Source: Hong Kong Stroke Fund  
([http://www.strokefund.org/eng/stroke\\_part\\_newadd1.php](http://www.strokefund.org/eng/stroke_part_newadd1.php))

Remember, time is muscle: the earlier a person takes heed of the stroke symptoms and gets appropriate treatment, the better result it would be. With timely diagnosis, appropriate treatment, supportive rehabilitation programmes and proper lifestyle modifications, many stroke survivors can have the condition under control, reduce the risk of further stroke and lead a normal life. Yet, prevention is better than cure. It is the best not to be a stroke victim and take positive steps to guard against “brain attack”.

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# World Stroke Day

29 October 2019

Initiated by the World Stroke Organization (WSO), World Stroke Day aims to raise awareness of stroke and the huge burden it places in the millions of people worldwide, and to highlight the ways in which stroke can be prevented.

One in four people will have a stroke in their lifetime. However, most strokes can be prevented by taking a few simple steps, such as be physical active. **DON'T BE THE ONE.**

1 in 4 of us will have a stroke.

**DON'T BE  
THE ONE**

World Stroke Day: October 29th



Let's join Lazy Lion ([www.facebook.com/lazylionhk](http://www.facebook.com/lazylionhk)) and move more to reduce the risk of stroke. To know more about the World Stroke Day 2019 and relevant activities, please visit <https://www.worldstrokecampaign.org/>.

**Non-Communicable Diseases (NCD) WATCH** is dedicated to promote public's awareness of and disseminate health information about non-communicable diseases and related issues, and the importance of their prevention and control. It is also an indication of our commitments in responsive risk communication and to address the growing non-communicable disease threats to the health of our community. The Editorial Board welcomes your views and comments. Please send all comments and/or questions to [so\\_dp3@dh.gov.hk](mailto:so_dp3@dh.gov.hk).

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