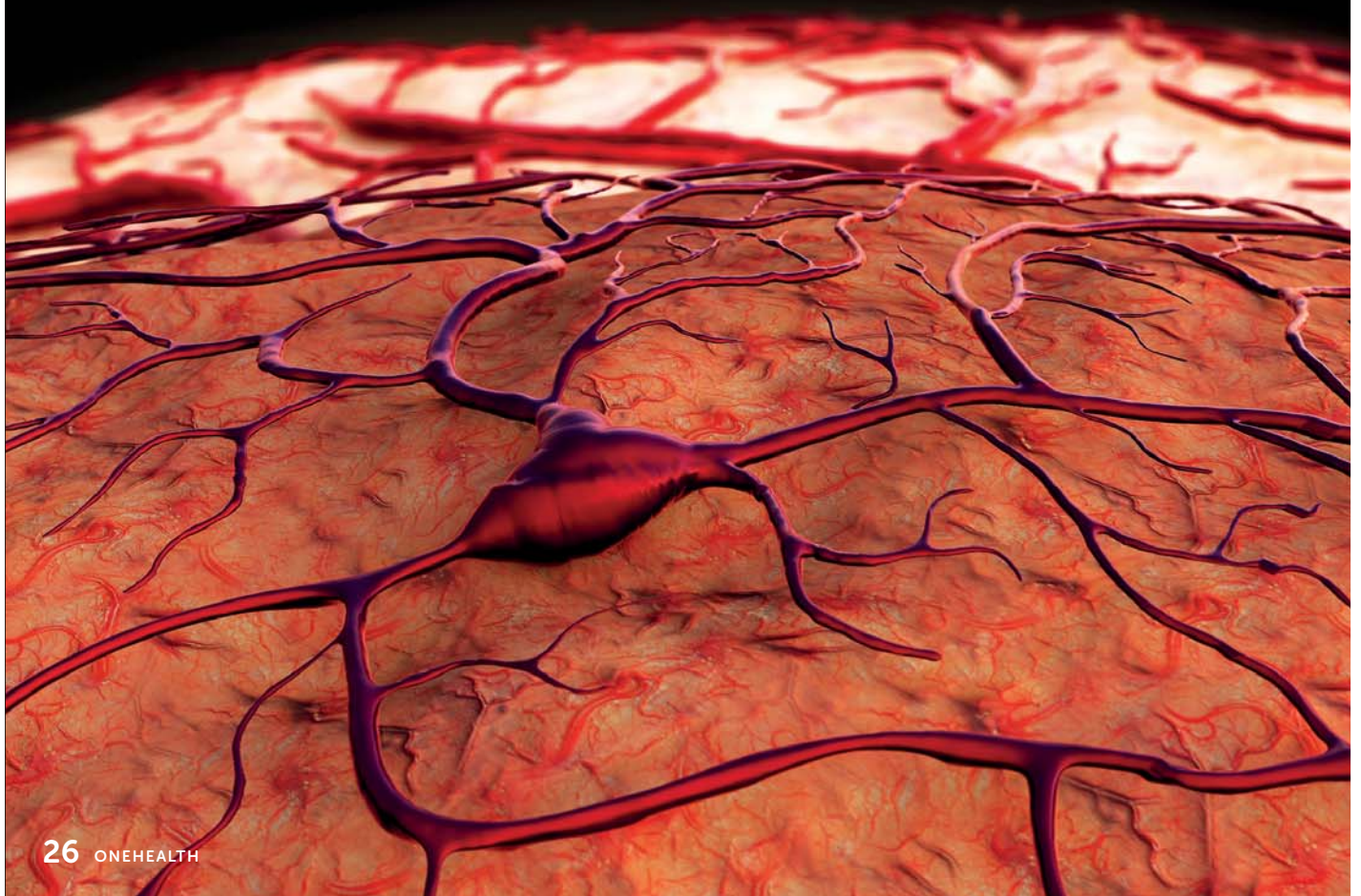


# Blow to the brain

Also known as a 'brain attack', a stroke can cause serious damage to the delicate cells in the brain. Learn how to lower your risk and spot early warning signs [By Adam Koh](#)

IN CONSULTATION WITH **DR AFTAB AHMAD**, CONSULTANT, DEPARTMENT OF MEDICINE



A stroke occurs when blood supply to the brain is interrupted or severely restricted. This disruption, explained Dr Aftab Ahmad, Consultant, Department of Medicine, JurongHealth, interrupts the flow of oxygen- and nutrient-rich blood and prevents it from reaching the brain. Starved of oxygen, brain cells die or are impaired, causing temporary or permanent disabilities, the severity of which depends on how long the brain goes without blood and which part is affected. Stroke complications include:

**Infections of the chest or urinary tract**

**Shoulder pain in the affected upper limb**

**Paralysis or muscle weakness, typically on one side of body**

**Difficulty in talking or swallowing (dysphagia)**

**Memory loss or cognitive difficulties**

**Numbness, typically on one side of body**

**Limb contractures and bed sores**

**Increased sensitivity to temperature changes**

## Types of stroke

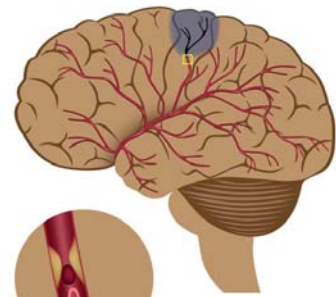
**Ischaemic** When an artery connecting to the brain becomes blocked or narrowed, typically due to a clot, the blood flow is severely reduced, causing a stroke. The blood clot is formed by blood cells or components and fatty deposits called plaque. About 8 in 10 strokes are ischaemic in nature.

**Haemorrhagic** A leaking or burst blood vessel in the brain spills blood into the surrounding tissues, putting pressure on and damaging brain cells. These ruptures can be caused by hypertension, trauma, blood-thinning medications and weakened blood vessel walls.

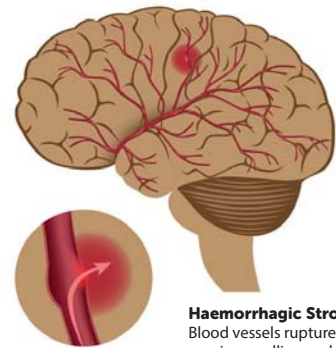
### Transient ischaemic attack (TIA)

This 'warning stroke' is a temporary interruption of blood flow to one part of the brain due to a blood clot or plaque deposit. The clot usually dissolves on its own in a few minutes but can cause stroke-like symptoms. Though this type of stroke is transient and leaves no permanent damage, it is still a medical emergency. TIAs may indicate a high risk of a full-blown stroke in the future.

**Silent stroke** Unlike TIAs that do not cause permanent harm, silent strokes are actual strokes that cause no outward symptoms and can only be detected through brain imaging. Silent stroke causes brain damage and increases future risk of stroke and TIAs. It also can cause cognitive impairment and its risk increases with age.



**Ischaemic Stroke**  
Blocked blood vessels limit blood flow to the brain



**Haemorrhagic Stroke**  
Blood vessels rupture, causing swelling and damage to brain cells

## Spot the signs

The signs of stroke vary widely depending on which part of the brain is affected. Signs include:

- Sudden loss of balance and coordination, stumbling, dizziness
- Slurred speech or inability to explain what is happening
- Paralysis or numbness on one side of the body
- Sudden blurred, blackened or double vision
- Sudden and severe headaches accompanied by pain or stiffness in the face, neck or head

## Prevention making its mark

According to the Singapore National Stroke Association, **over 10,000 people are admitted to Singapore hospitals annually for stroke, making it the fourth most common cause of death in Singapore after cancer, pneumonia and heart disease. It also contributes to the biggest proportion of long-term disability.** The good news is that the incidence of stroke is coming down – the Ministry of Health reports that the rate of strokes fell about 10 per cent from 175 per 100,000 people in 2007 to 158 per 100,000 people in 2011. The number of people dying from strokes has also dropped. After adjusting for an older population, the rate fell from 39 per 100,000 people in 2007 to 34 per 100,000 people in 2011. “The management of ischaemic stroke has improved over the years and eligible patients who come to us within the first four hours after the onset of symptoms can be treated with clot buster medicine,” Dr Aftab noted,

“[However] stroke is a significant cause of disability and premature death. Early recognition of symptoms and seeking help and medical attention is key.”

- Cardiovascular disease such as heart failure, a valvular defect, heart infection or abnormal heart rhythm
- High levels of homocysteine (an amino acid) in the blood
- Use of birth control pills or other hormone therapy
- Chronic diseases such as high blood pressure, high cholesterol or diabetes
- A personal or family history of stroke, heart attack or TIA
- Being 55 years old or older
- Smoking
- Obesity

## Are you at risk?



## FAST response

According to Dr Aftab, stroke is a medical emergency and early treatment by injecting a tissue plasminogen activator can be helpful in some ischaemic stroke patients. This ‘clot buster’ enzyme returns the blood flow to normal by dissolving the clot. “It has to be administered early after stroke onset and can help to reverse the effects of stroke in some patients,” he said. Therefore, speedy identification of stroke is essential.

To spot stroke, **think F.A.S.T.**

**Facial weakness** – One side of the face is drooping and hard to move

**Arm weakness** – Difficulty or inability to raise the arm fully

**Speech disturbances** – Difficulty in understanding or producing speech (slurred speech)

**Time** – Speedy treatment is essential! Call 995 or head directly to the emergency department