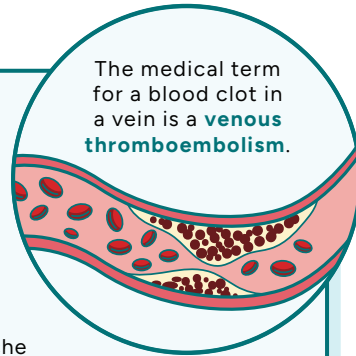




ORAL TREATMENTS FOR BLOOD CLOTS

WHAT ARE BLOOD CLOTS?

Blood clots occur when your blood **thickens** and forms a semi-solid mass inside the heart, a vein or artery. Blood clots can become a **problem** if they block the artery or vein or travel to other parts of the body through the bloodstream and block **another** artery, stopping your blood from flowing properly. Depending on where the clot is, this can lead to **serious** problems such as:



The medical term for a blood clot in a vein is a **venous thromboembolism**.



Stroke¹

Stroke occurs when a blood clot blocks blood flow to the **brain**.

- Face drooping • Weakness in the arm or leg • Sudden, severe headache
- Difficulty speaking or understanding • Difficulty swallowing • Dizziness • Blurred vision



Deep vein thrombosis (DVT)

A DVT occurs when a blood clot (thrombus) forms in one or more deep veins in the body, usually in the **lower legs, thigh or hip area**.

- Pain • Redness • Swelling



Pulmonary embolism (PE)

When a DVT is **not treated**, the blood clot can break off and travel through the bloodstream to the **lungs**, causing a PE.

- Chest pain • Coughing up blood • Dizziness • Fast heart rate • Rapid breathing
- Shortness of breath

DID YOU KNOW?



According to the Singapore National Stroke Association²:

10K Nearly **10,000** people are hospitalised for stroke every year in Singapore



Stroke and heart diseases are the **most common** causes of long-term **disability**

Top 4 Stroke is one of the top four causes of **death**

The number of strokes reported each year has **increased** from 2012 to 2022 but patients now have a better chance of **surviving** a stroke than before.³



Number of strokes reported in the year

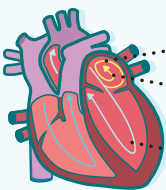


Proportion of patients who lived for more than 30 days after a stroke

STROKE

RISK FACTORS

DVT



Upper chamber of the heart (atrium)

Poor blood flow causing blood to clot

Normal flow of blood through the heart

You are more likely to have a **stroke** if you have an irregular heartbeat (**atrial fibrillation**). When this happens, the upper chamber of the heart (atrium) does not contract fully, causing blood to collect in the chamber which **increases** the risk of a clot forming. If a blood clot in the heart travels to other parts of the body, this is called a **systemic embolism**. Clots that travel to the **brain** may cause a **stroke**.

When atrial fibrillation is not caused by a problem with the heart valves, it is known as **non-valvular atrial fibrillation (NVAF)**.



You are more likely to develop a **DVT** if:

- You don't move around for a long time (because of surgery or injury)
- You have a medical condition that makes clotting more likely
- You have had a blood clot before

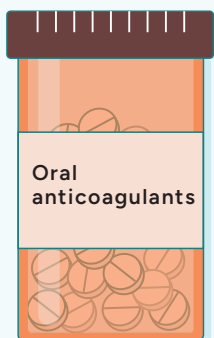
Other factors that can increase the risk of having a **DVT** include:

- Smoking
- Being overweight
- Having a family history of blood clots
- Being over 65 years old
- Medical conditions such as cancer or heart disease

HOW ARE BLOOD CLOTS TREATED?

Treatment of a blood clot will depend on where the clot is located. Without treatment, some blood clots can cause serious disability or even death, so it's important to see a doctor right away if you think you have a blood clot.

For patients who are suitable for treatment with oral medicines, drugs called blood thinners (**anticoagulants**) are most commonly used to stop the blood clot from growing larger and prevent new clots from forming.



The **4** oral anticoagulants that are **commonly prescribed** by doctors in Singapore are:

Warfarin

Apixaban

Dabigatran

Rivaroxaban

Known as **NOACs**
(non-vitamin K antagonist
oral anti-coagulants).

Because anticoagulants make blood take longer to clot, there is a **low** risk that they can cause a major **bleed** (unexpected bleeding in an important organ such as the brain or bleeding that lasts a long time). Your doctor will monitor your response to treatment.

WHAT DOES THE EVIDENCE SAY?

ACE reviewed all available clinical evidence for the commonly used oral anticoagulants and received expert advice from doctors about the use of these drugs to treat blood clots.^{4,5}

Apixaban, dabigatran, rivaroxaban and **warfarin** are **effective** treatment options for

- ✔ treating and preventing DVT and PE,
- ✔ preventing stroke and systemic embolism in patients with NVAf.

Patients taking **apixaban, dabigatran, or rivaroxaban** have a **lower risk** of bleeding compared with those taking warfarin.



SUBSIDISED TREATMENTS

SUBSIDISED

- ✔ Apixaban
- ✔ Rivaroxaban
- ✔ Warfarin

NOT SUBSIDISED

- ✘ Dabigatran

Dabigatran is not subsidised because its benefits do not justify its cost at the price offered by the company.



KEY MESSAGES

Apixaban, rivaroxaban and **warfarin** are subsidised for managing blood clots, making them more affordable.

The anticoagulant that you need will depend on different factors such as the underlying cause and the location of the blood clot. Talk to your **doctor** to discuss which treatment is suitable for you. You can also speak to a **medical social worker** if you need further financial assistance, or you can reach out to **local patient support groups**⁶ if you want to share your experiences with people who have similar medical conditions as you.

Sources

1. www.healthhub.sg/health-conditions/strokeawareness
2. www.healthhub.sg/well-being-and-lifestyle/personal-care/blow-to-the-brain
3. Health Promotion Board National Registry of Diseases Office. Singapore Stroke Registry Annual Report 2022, January 2025
4. ACE Technology Guidance on non-vitamin K antagonist oral anti-coagulation agents (NOACs) for preventing stroke and systemic embolism in non-valvular atrial fibrillation, 2022
5. ACE Technology Guidance on non-vitamin K antagonist oral anti-coagulation agents (NOACs) for the treatment and secondary prevention of venous thromboembolism, 2022
6. Caring Hearts Support Group (CHSG) of NUHCS; The Singapore National Stroke Association (SNSA)



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