

Patient and Family Information Leaflet

Antiphospholipid Syndrome

What is Antiphospholipid Syndrome (APS)?

Antiphospholipid Syndrome (APS) is a chronic autoimmune disorder. It occurs when the body's immune system (which usually protects the body from infections) produces abnormal antibodies known as antiphospholipid antibodies, which increases risk of forming blood clots. These can occur in the arteries and veins (thrombotic APS), or lead to pregnancy complications (obstetric APS) such as recurrent miscarriages, severe high blood pressure during pregnancy (preeclampsia), insufficient blood flow to the placenta, and premature delivery.

APS can occur on its own (primary APS) or alongside another autoimmune condition (secondary APS), most commonly Systemic Lupus Erythematosus (SLE).

What causes APS?

The exact cause of APS is not fully understood, but it is thought to be contributed by a complex relationship between genetic and environmental factors. A family history of autoimmune diseases can increase your risk. Environmental factors such as infections and medications may trigger the disease.

What are the symptoms of APS?

Symptoms can vary depending on where blood clots form and can be life-threatening in severe cases.

Thrombotic APS (blood clots):

- **Deep vein thrombosis (DVT)** – this occurs when blood clots form in veins, leading to swelling redness and pain. The most common site for this to occur is the veins of the legs.
- **Pulmonary embolism** – blood clots develop in the major arteries of the lungs. Symptoms include shortness of breath, chest pain, and haemoptysis (coughing out blood).

This can occur concurrently with DVT or in isolation. Large pulmonary embolisms may even provoke sudden onset of critical illness including shock cardiac and respiratory failure.

- **Stroke** – blood clots developing in the blood vessels of the brain. This may lead to sudden onset of weakness or numbness of the body, double vision, incoordination or speech difficulties.
- **Heart attack** – blood clots in the major arteries supplying the heart (coronary arteries) can lead to a heart attack. Patients may present with chest pain, breathlessness, nausea and sweating.
- **Blood clots** may also occur in other parts of the body such as the blood vessels in the eyes, kidneys, liver and spleen.

Obstetric APS (pregnancy-related issues):

- Recurrent miscarriages, especially in the second or third trimester
- Preeclampsia – APS can cause high blood pressure during pregnancy. This may lead to low blood count (such as low platelets), liver or kidney damage, and seizures (fits)
- Impaired foetal growth during pregnancy
- Premature birth
- Stillbirth

Other features associated with APS include:

- Purplish rash (Livedo reticularis)
- Low platelet counts may lead to easy bleeding and bruising
- Headaches due to migraines, abnormal body movements (chorea) and memory impairment

- Abnormalities with the heart valves, which can lead to shortness of breath and leg swelling. An abnormal heart sound (murmur) may be heard with a stethoscope.

Not everyone will experience all these symptoms. Some people may have no obvious symptoms but are diagnosed after testing due to unexplained pregnancy loss or blood clots.

How is APS diagnosed?

APS is diagnosed based on both clinical history and blood tests showing specific antiphospholipid antibodies. A detailed history and clinical examination will be performed. Investigations include:

- Blood tests including blood counts, kidney and liver tests and antiphospholipid antibodies (aPLs) – repeated at least 12 weeks apart.

These aPLs include:

- Lupus anticoagulant
 - Anticardiolipin antibodies (IgM and IgG)
 - Anti-beta-2 glycoprotein I antibodies (IgM and IgG)
- Imaging scans may be performed if there are suggestive symptoms to detect clots (such as ultrasound, CT or MRI)

Presence of antiphospholipid antibodies without any history of blood clots or pregnancy complications is not confirmatory for APS.

As APS can occur with other autoimmune conditions such as SLE, further tests for other autoimmune conditions may be performed as appropriate depending on clinical suspicion.

What is the treatment of APS?

There is no cure for APS at present, but it can be well managed with medications and lifestyle modifications.

Thrombotic APS

Patients with thrombotic APS will require long-term blood thinning medication (anticoagulation) to reduce the risk of recurrent blood clots.

Warfarin is the most common medication used in APS. Regular blood tests is required to monitor the international normalised ratio (INR) to ensure that the dose of warfarin is correct for you. If INR is too low, you are inadequately treated and blood clots may still occur. If INR is too high, your blood is too thin and there is a risk of excessive bleeding.

Patients should maintain a consistent diet when taking warfarin as certain food can affect INR level. Some medications and traditional herbs may also interact with warfarin and cause fluctuations in the INR. It is important to inform your healthcare providers that you are taking warfarin before starting any new medications as closer INR monitoring and dose adjustments may be required.

If you are unable to take warfarin, the alternative is heparin, an different type of blood thinning medication given as injection under the skin (subcutaneous injection). Heparin is also often used as a “bridging therapy” if the INR is too low when just started on warfarin.

Aspirin may be added to prevent previous heart attack or stroke if your doctor thinks this is necessary.

Immunosuppressive medication may be required for patients with other autoimmune conditions in addition to APS.

Obstetric APS

Patients with obstetric APS (pregnancy complications without any blood clots) do not require long-term anticoagulants except during pregnancy and in the first few weeks after delivery. Please see section below for more information.

Can I get pregnant if I have APS?

Many women with APS go on to have successful pregnancies with proper treatment. Pregnancy plans should be discussed early with the rheumatologist and close monitoring is required by an obstetrician trained in the management of high-risk pregnancies.

During pregnancy, patients with both thrombotic and obstetric APS will need to be on subcutaneous heparin injections to prevent blood clots and complications during pregnancy. Warfarin is not suitable during pregnancy as it can cause birth defects in the foetus.

In addition, patients with APS will need to be on aspirin to prevent pre-eclampsia (high blood pressure during pregnancy). Select patients may require additional medications such as hydroxychloroquine especially if they have other autoimmune conditions such as SLE.

What should I do if I have APS?

- Avoid smoking as it increases the risk of blood clots
- Eat a balanced and consistent diet – certain food and dietary changes can affect INR levels.
- Stay active and avoid sitting down for too long – sitting for prolonged periods can increase the risk of blood clots, e.g. during long flights.
- Regular exercise is recommended. Contact sports should be avoided while on anticoagulation to prevent bleeding complications.

- Inform all healthcare providers that you have APS, especially if you are taking warfarin as certain medications may interact with warfarin. If planned for an elective surgery, discuss with your surgeon and rheumatologist early as warfarin may need to be stopped and switched to subcutaneous heparin temporarily.
- Take medications regularly as prescribed, even when you feel well.
- Attend regular medical check-ups to monitor your health. Participate actively in your care and ask questions during your clinic consultations
- Discuss contraception with your rheumatologist and gynaecologist – certain birth control medications are not appropriate for patients with APS as they may increase risk of blood clots.

If pregnant or trying to conceive, inform your rheumatologist early and see an obstetrician who specializes in high-risk pregnancies.

NUHS Rheumatology Cluster

National University Hospital

5 Lower Kent Ridge Road, Singapore 119074

OneNUHS Hotline: (65) 6908 2222

OneNUHS General Enquiries: contactus@nuhs.edu.sg

OneNUHS Appointments: appointment@nuhs.edu.sg

www.nuh.com.sg

Ng Teng Fong General Hospital and Jurong Community Hospital

1 Jurong East Street 21, Singapore 609606

OneNUHS Hotline: (65) 6908 2222

OneNUHS General Enquiries: contactus@nuhs.edu.sg

OneNUHS Appointments: appointment@nuhs.edu.sg

www.ntfgh.com.sg

www.jch.com.sg

Alexandra Hospital

378 Alexandra Road, Singapore 159964

OneNUHS Hotline: (65) 6908 2222

OneNUHS General Enquiries: contactus@nuhs.edu.sg

OneNUHS Appointments: appointment@nuhs.edu.sg

www.ah.com.sg

The information in this brochure is meant for educational purposes and should not be used as a substitute for medical diagnosis or treatment. Please seek your doctor's advice before starting any treatment, or if you have any questions related to your health, physical fitness or medical condition.

© 2026, National University Health System. All rights reserved. No part of this publication may be reproduced or shared without prior permission from National University Health System.

Information is correct at time of printing [March] [2026] and subject to revision without prior notice.