

Black Country

Vascular Network



NHS

The Dudley Group
NHS Foundation Trust

Peripheral arterial disease in legs

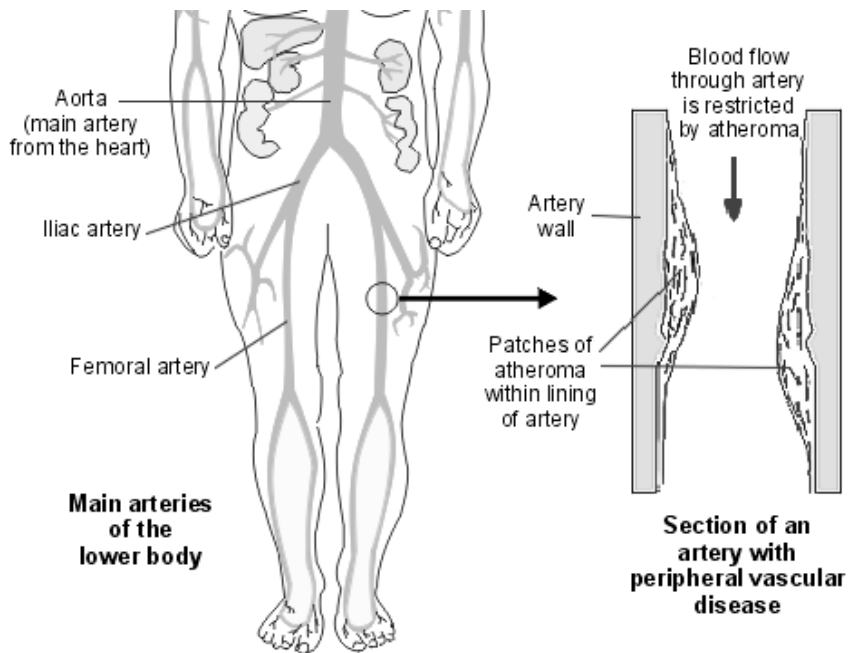
Vascular Surgery

Patient Information Leaflet

What is peripheral arterial disease (PAD)?

Peripheral arterial disease (PAD) is the narrowing of one or more arteries (blood vessels). It mainly affects arteries that take blood to the legs. Arteries to the arms are rarely affected and are not dealt with further in this leaflet. The condition is also known as 'peripheral vascular disease'. It is also sometimes called 'hardening of the arteries' of the legs. It is a common problem that affects nine per cent of the population, but it will only cause symptoms or problems in a quarter of those people.

What causes peripheral arterial disease?



The narrowing of the arteries is caused by atheroma. Atheroma is like fatty patches or 'plaques' that develop within the inside lining of arteries. A patch of atheroma starts quite small and causes no problems at first. Over the years, a patch of atheroma can become thicker (it is a bit like scale that forms on the inside of water pipes).

A thick patch of atheroma makes the artery narrower. This reduces the flow of blood through the affected section of the artery. Tissues 'downstream' have a reduced blood supply which can lead to symptoms and problems.

Atheroma can develop in any artery, but the common arteries affected are:

- Arteries taking blood to the heart - this is called ischaemic heart disease and may lead to problems such as angina and heart attacks.
- Arteries taking blood to the brain - which may eventually lead to a stroke.
- Arteries taking blood to the legs - which may lead to PAD.

What causes atheroma?

Everybody has some risk of developing atheroma. However, certain 'risk factors' increase the risk. Risk factors include:

Lifestyle risk factors that can be prevented or changed:

- Smoking.
- Lack of physical activity (a sedentary lifestyle).
- Obesity.
- An unhealthy diet.
- Excess alcohol.

Treatable or partly treatable risk factors:

- Hypertension (high blood pressure).
- High cholesterol blood level.
- High triglyceride (fat) blood level.
- Diabetes.
- Kidney diseases causing reduced kidney function.

Fixed risk factors – ones that you cannot alter:

- A strong family history. This means if you have a father or brother who developed heart disease or a stroke before they were 55, or a mother or sister before they were 65.
- Being male.
- An early menopause in women.
- Age. The older you become, the more likely you are to develop atheroma.
- Ethnic group. For example, people who live in the UK with ancestry from India, Pakistan, Bangladesh or Sri Lanka have an increased risk.

However, if you have a fixed risk factor, you may want to make extra effort to tackle any lifestyle risk factors that can be changed.

Please note that some risk factors are more 'risky' than others, for example smoking causes a greater risk to health than obesity. Also, risk factors interact, so if you have two or more risk factors, your health risk is much more increased than if you just have one. For example, a middle-aged male smoker who does little physical activity and has a strong family history of heart disease has quite a high risk of developing a cardiovascular disease, such as a heart attack, stroke or peripheral arterial disease before the age of 60.

Research is looking at some other factors that may be risk factors, for example high blood levels of apolipoprotein B or homocysteine are being investigated as possible risk factors.

What are the symptoms of PAD?

The typical symptom is pain, which develops in one or both calves when you walk. This is called intermittent claudication. It is due to the narrowing of the femoral artery, which is the most common site for atheroma to develop in PAD. When you walk, the calf muscles need an extra blood and oxygen supply.

The narrowed artery cannot deliver the extra blood, and so pain occurs from the oxygen-starved muscles. The pain soon goes when you stop walking. The pain comes on more rapidly when you walk up a hill or stairs than when you walk on flat ground.

If an artery higher 'upstream' is narrowed, such as the iliac artery or aorta, then you may develop pain in your thighs or buttocks when you walk. Unfortunately, the blockage which causes the claudication will not clear itself, but the situation can improve. Smaller arteries in the leg may enlarge to carry blood around the blocked main artery. This is called 'collateral' circulation. If the blood supply to the legs becomes worse, the following may be found by a doctor who examines you:

- Poor hair growth below your knee and poor toenail growth.
- Cool feet.
- Weak or no pulses in the arteries of your feet.

Severe cases

If the blood supply is very much reduced, you may develop pain even at rest, particularly at night when the legs are raised in bed. Typically, rest pain first develops in the toes and feet rather than in the calves. Ulcers (sores) may develop on the skin of your feet or lower leg if the blood supply to the skin is poor. In a small number of cases, gangrene (death of tissue) of a foot may result. This is usually preventable.

How is PAD diagnosed?

The diagnosis is usually made by the typical symptoms. A simple test that your doctor may do is to check the blood pressure in your ankle and compare this to the blood pressure in your arm. If the blood pressure in your ankle is much different to that in your arm, this usually means that one or more arteries going to your leg or in your leg are narrowed.

More sophisticated tests are not needed in most cases. They may be done if the diagnosis is in doubt or if surgery is being considered (which is only in the minority of cases). For example, a CT scan, an MRI scan or an ultrasound scan of the arteries can build up a 'map' of your arteries and show where they are narrowed.

What is the outlook (prognosis) for PAD?

In most cases, the outlook for the legs is quite good. However, if you have PAD, it means that you have an increased risk of developing atheroma in other arteries. Therefore, you have a higher than average risk of developing heart disease (such as angina or a heart attack) or of having a stroke.

The main concern for most people with PAD is not that they might need an amputation, but the increased risk of having a heart attack or stroke. The chance of developing severe PAD (and heart disease or a stroke) is much reduced by the self-help measures and treatments described in the next section.

What self-help measures can I do?

Stop smoking

If you smoke, then stopping smoking is the best treatment. Stopping smoking doubles or triples walking distance without pain in over eight out of 10 people with PAD. Stopping smoking also greatly

reduces your risk of having a heart attack or stroke. See your practice nurse for help if you find it difficult to stop smoking. Nicotine gum or tablets to help you stop may be an option. There are also other medicines that are sometimes prescribed to help people stop smoking.

Exercise regularly

Regular exercise encourages other smaller arteries in the legs to enlarge and improve the blood supply. If you exercise regularly, there is a good chance that symptoms will improve and the distance that you can walk before pain develops will increase.

Walking is the best exercise if you have PAD. Regular exercise means a walk every day or on most days. Walk until the pain develops, then rest for a few minutes. Carry on walking when the pain has eased. Keep this up for at least 30 minutes each day and preferably for an hour a day. The pain is not damaging to the muscles.

Patients with intermittent claudication are invited to attend a specialist supervised exercise programme which involves two hours of supervised exercise per week for a three month period. Research has shown that taking part in exercise and physical activity can lead to improvements in symptoms in the short term for people with intermittent claudication.

Other exercises such as cycling and swimming will also help you to become fit and are good for the heart. However, these should be done in addition to walking, as walking has been shown to be the best exercise to improve symptoms of PAD.

Research studies have shown that if you stop smoking and exercise regularly, symptoms of PAD are unlikely to become worse and they often improve. Your risk of developing heart disease or a stroke will also be reduced.

Lose weight if you are overweight

Losing weight reduces the demands on the heart and leg muscles and reduces the risk of atheroma forming.

You should eat a healthy diet

This is the same as advised to prevent heart disease. This reduces the chance of atheroma forming. A practice nurse may advise you on how to eat a healthy diet, and there is another leaflet about healthy eating which gives details. Briefly, a healthy diet means:

- At least five portions of a variety of fruit and vegetables a day.
- The bulk of most meals should be starch-based foods (such as cereals, wholegrain bread, potatoes, rice, pasta) plus fruit and vegetables.
- Not much fatty food, such as fatty meats, cheeses, full-cream milk, fried food, butter etc. Use low-fat, mono-, or poly-unsaturated spreads.
- Include two to three portions of fish a week. At least one of which should be 'oily' (such as herring, mackerel, sardines, kippers, salmon or fresh tuna).
- If you eat meat, it is best to eat lean meat or poultry such as chicken.
- If you do fry, choose a vegetable oil such as sunflower, rapeseed or olive oil.
- Try not to add salt to food and limit foods that are salty, such as processed foods.

Alcohol

Drinking a small or moderate amount of alcohol helps to reduce the risk of developing cardiovascular diseases such as PAD. That is one to two units a day, which is up to 14 units a week. Drinking more than 15 units a week does not reduce the risk and drinking more than the recommended upper limits can be harmful. Men should drink no more than 21 units a week (and no more than four units in any one day), and women should drink no more than 14 units a week (and no more than three units in any one day).

One unit is in about half a pint of normal strength beer, two thirds of a small glass of wine or one small pub measure of spirits.

Take care of your feet

Try not to injure your feet. Injury may lead to an ulcer or infection developing more easily if the blood supply to the feet is reduced. Do not wear tight shoes or socks which may reduce blood supply. Tell your doctor if you have any foot injury, pain in a foot when you are resting or any marked change in skin colour or temperature in either of your feet.

What are the treatments for PAD?

The self-help measures mentioned in the section before are the most important part of treatment. In addition, medication is often advised. Surgery is only needed in a small number of cases.

Medicines

- Aspirin is usually advised. A daily low dose (75 mg) is usual. This does not help with symptoms of PAD, but helps to prevent blood clots (thrombosis) forming in the arteries. It does this by reducing the 'stickiness' of platelets in the blood stream (aspirin is an 'antiplatelet' medicine). A blood clot is a rare complication of PAD.

However, people with PAD have a higher than average risk of developing a heart attack or stroke (which are usually caused by blood clots). A daily low dose of aspirin reduces this risk too. If you cannot take aspirin, alternative antiplatelet medicines such as clopidogrel may be advised.

- A 'statin' medicine is usually advised to lower your cholesterol level. This helps to prevent a build-up of atheroma.
- If you have diabetes, good control of your blood glucose level will help to prevent PAD from getting worse.

- If you have high blood pressure, you will normally be advised to take medication to lower it.
- Other medicines are sometimes used to try to 'open up' the arteries, for example nifedipine. One may be tried and may help. However, they do not work in all cases, therefore there is no point in continuing with these medicines if you do not notice an improvement in symptoms within a few weeks.

Surgery

Most people with PAD do not need surgery. Your general practitioner (GP) may refer you to a surgeon if symptoms of PAD become severe, particularly if you have pain when you are resting. Surgery is considered a last resort. Surgery is not easy and does have complications. There are three main types of operation for PAD:

- **Angioplasty** is where a tiny 'balloon' is inserted into the artery and 'blown up' at the section that is narrowed. This widens the affected segment of artery. This is only suitable if a short segment of artery is narrowed.
- **Bypass surgery** is where a graft (like a flexible pipe) is connected to the artery above and below a narrowed section. The blood is then diverted around the narrowed section.
- **Amputation** of a foot or lower leg is needed in a small number of cases. It is needed when severe PAD develops and a foot develops gangrene due to a very poor blood supply.

Further help and information

British Heart Foundation
14 Fitzhardinge Street
London
W1H 6DH

Tel (Heart Helpline): 0300 330 3311

Web: **www.bhf.org.uk**

The Circulation Foundation

Web: **www.circulationfoundation.org.uk**

Publishes a number of patient information leaflets about vascular illness. It also funds research into the prevention and causes of vascular disease.

Your comments

You can contact the Patient Advice and Liaison Service (PALS) on freephone 0800 073 0510.

PALS is here to support patients, relatives or carers when they have concerns or queries. They will do their best to resolve any concerns you may have and can also give advice on making a formal complaint.

If you have any questions, or if there is anything you do not understand about this leaflet, please contact:

Russells Hall Hospital, Dudley on 01384 456111

Ward B3, Russells Hal Hospital on 01384 456111 ext. 2717

Walsall Manor Hospital on 01922 721172 ext. 6669/7763

New Cross Hospital, Wolverhampton on 01902 307999

This leaflet can be downloaded or printed from:

<http://dgft.nhs.uk/services-and-wards/>

If you have any feedback on this patient information leaflet, please email dgft.patient.information@nhs.net

This leaflet can be made available in large print, audio version and in other languages, please call 0800 073 0510.

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此宣传单可提供大字版本、音频版本和其它语言版本，请拨打电话：0800 073 0510。

Ulotka dostępna jest również w dużym druku, wersji audio lub w innym języku. W tym celu zadzwoń pod numer 0800 073 0510.

ਇਹ ਪਰਚਾ ਵੱਡੇ ਅੱਖਰਾਂ, ਬੋਲ ਕੇ ਰੀਕਾਰਡ ਕੀਤਾ ਹੋਇਆ ਅਤੇ ਦੂਸਰੀਆਂ ਭਾਸ਼ਾਵਾਂ ਵਿਚ ਵੀ ਪ੍ਰਾਪਤ ਹੋ ਸਕਦਾ ਹੈ, 0800 073 0510 ਤੇ ਫੋਨ ਕਰੋ ਜੀ।

Aceasta broșura poate fi pusă la dispoziție tipărită cu caractere mari, versiune audio sau în alte limbi, pentru acest lucru va rugăm sunați la 0800 073 0510.

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