Peripheral vascular disease

Smoking affects your blood vessels

There are over 7000 different types of chemicals in cigarette smoke.[1] With every puff, many of these chemicals pass through your lungs into your bloodstream. They go everywhere your blood flows.[2]

Chemicals from smoke affect your blood, making it thicker, stickier and more likely to form clots. They cause fatty material to build up on your blood vessel walls faster. Over time, this slowly narrows and blocks your blood vessels making it difficult for your blood to circulate.[2]

What is PVD?

Peripheral vascular disease (PVD) refers to diseases of the arteries (the large blood vessels), except for those in the heart and brain.[3] It also may be called peripheral arterial disease (PAD).[2,3] It occurs when the arteries that carry blood to your legs or arms become partially or totally blocked by the build-up of fatty material on your artery walls.[2-4]

Symptoms of PVD

PVD mainly affects blood circulation to the legs and feet.[3,4] Many people with PVD do not have any symptoms (asymptomatic PVD).[5] For people who have PVD with symptoms, the most common is pain in the legs, particularly the calves, when walking. The pain usually goes away within several minutes after stopping exercise.[2,5]

Other symptoms may include:

- numbness, weakness or a feeling of heaviness in the legs with no pain[6]
- hair loss on your feet and legs[7]
- poor nail growth (brittle toenails)[8]
- cool or shiny skin on your legs, or cold or numb toes[6,7]
- a change in the colour of your legs[4,8]
- a weak pulse in your legs or feet.[7,8]

Symptoms of more advanced PVD include:

- sores or ulcers on your toes and feet that do not heal properly[4,7]
- pain in the legs while resting[4,7]
- pain in the feet or toes while resting, especially when lying flat.[5]

These symptoms can be distressing as they can involve constant pain.[5,9]

Severe PVD

In severe cases of PVD, there is not enough blood supply to the edge of the feet or toes. The foot becomes purplish, cold and painful. Wounds on the feet heal poorly and ulcers form easily.[7,10] Feet in this state can progress to gangrene, which is when tissue becomes blackened and dead.[5,7,11] It may become necessary for a surgeon to cut off affected toes, feet or legs as a last resort to relieve pain (amputation).[12,13] Only a very small percentage of people with PVD end up needing amputation, but continuing to smoke is a major risk factor for the loss of feet and limbs.[9,11,14]

People who have PVD often die from heart disease or stroke rather than PVD, as these diseases are caused by similar processes.[3,5,14,15] PVD most often occurs in people aged over 40 years old.[5]

Smoking and PVD

Smoking is a major risk factor for PVD.[5,16] Over 80% of people with PVD are people who smoke or used to smoke.[11,14] People who smoke are around three times more likely to develop PVD than people who have never smoked.[5,12,17]

On average, people who smoke develop PVD about 10 years earlier in life than people who have never smoked.[5] The more cigarettes someone has smoked over time, the worse their PVD tends to be.[5] People with PVD who smoke are likely to worsen their symptoms, and increase their risk for amputation.[5,9] Smoking also reduces the success of treatments for PVD.[18]

The processes that lead to PVD start early. Every puff of cigarette smoke contains huge amounts of chemicals called oxidants. They play an important role in the build-up of fatty deposits in arteries, as well as in causing cancer and lung disease.[2] Research shows that even young smokers in their teens and early 20s have more fatty deposits in the main artery of their heart than non-smokers of the same age.[2]

Other risk factors for PVD include diabetes, high blood pressure, and high cholesterol levels.[5,9] If you have more than one of these risk factors, your risk of PVD increases.[5] Stopping smoking may also help control some of these other risk factors as quitting improves good cholesterol levels and reduces your risk of developing Type 2 diabetes in the long term.[16,19,20]

Stopping smoking reduces your risk of PVD

Stopping smoking will reduce your risk of developing PVD, but people who used to smoke are still more likely to develop PVD than people who have never smoked.[11,17,21] However, the longer you have quit, the lower your risk of developing symptoms of PVD.[11]

For people who develop symptoms of PVD, quitting slows down the worsening of the disease within one to five years.[11] Compared to people who keep smoking, people who quit have less severe pain when walking and are less likely to develop pain at rest.[2,11]

They live longer, respond better to treatment, and are less likely to require surgery or amputation.[11,22]

It is necessary to quit completely as smoking even one or two cigarettes a day immediately affects your circulation and can affect treatment.[2]

Treatment for advanced PVD may include surgery to restore blood flow to the arteries.[5,11] Stopping smoking before or even at the time of surgery for PVD improves the chance of its success.[11] Quitting smoking for at least four weeks before surgery reduces the risks for wound infection and other serious problems during and after surgery.[23,24] The earlier you quit before surgery, the greater your chances of a good recovery.[24]

Abdominal aortic aneurysm (AAA)

Another major form of PVD affects the main artery leading from the heart (the aorta). The lower part of the aorta is called the abdominal aorta, and supplies blood to your abdomen, pelvis and legs. When the wall of the abdominal aorta is weakened it can become abnormally wider or balloon outwards. This is called an abdominal aortic aneurysm (AAA).[3,25] Abdominal aortic aneurysms are life-threatening if they split open and bleed and deaths are common.[2,3,26]

People who smoke are five times more likely to develop AAA than people who have never smoked.[26] Even smoking five cigarettes per day doubles your risk of AAA.[26] Smoking is the most important risk factor for AAA.[11,27]

Stopping smoking reduces your risk of developing AAA, and over time your risk becomes close to that of someone who has never smoked.[26] Worsening of symptoms is slower in people with AAA who have quit smoking than in people who keep smoking.[11] Stopping smoking is one of the few ways you can reduce your risk for this potentially fatal disease.[2,11]

When you quit

As soon as you stop smoking your body begins to repair itself. These are some of the typical benefits of quitting

- Within one day the level of carbon monoxide in your blood drops back to normal.[19] Your blood can supply oxygen to your heart and muscles more easily.[2,28]
- After three to four weeks your body is better at fighting off infections in cuts and wounds.[24,29]
- After eight weeks your level of good cholesterol will have increased – this helps slow down the build-up of fatty deposits on your artery walls.[19,20]
- After three months your blood is less thick and sticky and your blood flow will have improved.[19,30,31]
- Within one year your lungs are healthier and you'll be breathing easier than if you'd kept smoking.[11,32,33]
- Within five years there is a large drop in your risk for stroke.[11,34-36]
- After 10 years your risk for abdominal aortic aneurysm (AAA) is around half that of someone who keeps smoking.[26]
- After 20 years your risk of developing symptoms of PVD, such as pain when walking, are much lower than someone who keeps smoking.[11,37] Your risk of heart attack and stroke is close to that of someone who has never smoked. [35,38,39]
- After 25 years your risk of developing AAA is close to that of someone who has never smoked.[2]

Help to stop smoking

The best way to **stop smoking** is to talk with Quitline and use stop smoking medications. These include prescribed tablets or nicotine patches, lozenges, mouth spray, inhalator or gum. Your doctor or pharmacist can advise you on what would suit you.

If you are taking any medicines, talk with your doctor or pharmacist as they may need to look at your medicines before you stop smoking.

Contact Quitline

Quitline is a welcoming, free and confidential counselling service. Quitline counsellors are experts at helping you gain the skills to break free from smoking or vaping, or both. We will help you build and keep up your motivation to quit and help you create a quit plan that works for you. We listen carefully and answer your questions without judgement and can support you throughout your quit journey. Quitline counsellors can also support you if you are using vapes to stop smoking and can help you stop vaping.

There are many ways to contact Quitline:

- **Call 13 7848** Monday to Friday 8am to 8pm
- **Text** 'call back' to **0482 090 634** (VIC, SA, WA, NT only)
- **Webchat** at quit.org.au (VIC, SA, WA, NT only)
- **Facebook Messenger @quitvic** or **WhatsApp 61 385 832 920** (VIC, SA, WA, NT only)
- Ask Quitline to call you back **for free** at quit.org.au/callback

Aboriginal and Torres Strait Islander people can call Quitline and ask to yarn with an Aboriginal and/or Torres Strait Islander Quitline Counsellor if they wish, for Culturally sensitive support, delivered by mob, for mob.

Quitline has worked with people in the LGBTIQA+ community to make Quitline a safe and inclusive space. You can speak to Quitline in a language other than English: call 13 7848 and tell us you need an interpreter and we will call you back. We also use the National Relay Service with people with a hearing or speech impairment.

Go online: quit.org.au

Create your own quit plan to stop smoking or vaping with easy-to-find information. You'll find tips, distractions, tools and stories from people who quit.

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