

Smoking and Vascular Disease

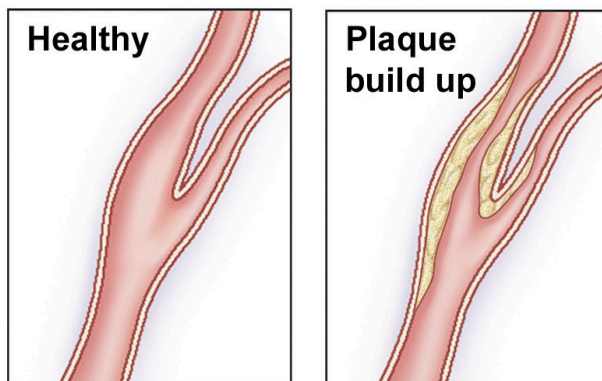
Smoking has a tremendous impact on the arteries of the entire body. Smoking cessation is one of the best things one can do for the health of the arterial system.



What Does Smoking Do to Your Arteries?

Tobacco use is the number one preventable cause of death in the United States. It causes heart attacks, various types of cancer, and strokes — the number one, two, and three causes of death. Its effect on heart attacks and strokes is primarily caused by its effects on the arteries.

The two chemicals in cigarettes that stand out as the biggest problems are nicotine and carbon monoxide. Nicotine, besides being addictive, has very powerful effects on arteries throughout the body. Nicotine is a stimulant, speeding up the heart by about 20 beats per minute with every cigarette, it raises blood pressure, is a vasoconstrictor — which means it makes arteries all over the body become smaller making it harder for the heart to pump through the constricted arteries — and it causes the body to release its stores of fat and cholesterol into the blood.



Hardening of the arteries is a process that develops over years when cholesterol and other fats deposit in the arteries, leaving them narrow, blocked, or rigid. When the arteries narrow (atherosclerosis), blood clots are likely to form. Smoking accelerates the hardening and narrowing process in your arteries; it starts earlier and blood clots are two to four times more likely. Smoking lowers your levels of high-density lipoprotein cholesterol (“good” cholesterol) and raises your levels of low-density lipoprotein cholesterol (“bad” cholesterol). It decreases the movement of cholesterol through the body, and contributes to its accumulation in your arteries. This puts you at a higher risk for heart attack, stroke, and limb loss.

Cigarette smoking increases risks of blood clots significantly. If the blood clots in an artery and blood can no longer get through, the tissue that is supposed to be supplied with blood has lost the source of its oxygen and nutrients and dies in minutes. This can result in heart attacks, strokes, and gangrene of the leg.



Smoking Affects on the Coronary Arteries

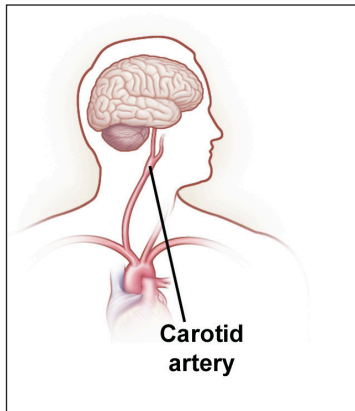
Cigarette smoking is a major risk factor for the development of the atherosclerotic plaques that lead to heart attacks. But it has been known for many years that this effect wanes progressively after you stop smoking.

Coronary artery spasm is a spontaneous narrowing of a coronary artery in the absence of exertion. You experience this narrowing as chest pain (angina). The narrowing of the coronary artery reduces blood flow to the heart muscle, which can lead to a heart attack (myocardial infarction). If you are a current smoker, you have 20 times the risk of coronary artery spasm than if you are a nonsmoker.

Smoking increases the likelihood of coronary thrombosis or blood clots in the arteries leading away from the heart. Smoking does this by increasing the factors that lead to this disease. For example, smoking causes platelets (clotting agents) to become sticky and aggregate. It also makes the blood thicker.

Please call with any questions:

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Smoking Affects on the Brain

Smoking narrows the arteries in the brain and the arteries in the neck which lead to the brain (carotids). This raises the risk of stroke. In addition, the vessels to the brain can become blocked, which can lead to collapse, stroke, and paralysis. But this build up, if complete, cuts off circulation to your brain, the part of the brain that no longer gets circulation dies. This is what happens in the case of a stroke. Circulation gets cut off from the brain either through a clog or a blood clot. The section of the brain that gets cut off suffocates and dies. If this part of your brain controlled speech, you will not talk anymore; if it controlled some form of motor function, these abilities will be lost and leave the patient impaired or crippled. If the section of the brain affected controlled some life sustaining function, the patient will die within minutes of when the circulation cut off is complete.

Smoking and Peripheral Artery Disease

Blockage to the vascular supply to the legs may lead to gangrene and amputation. Smoking may cause peripheral vascular disease (PAD), which is the narrowing of the arteries that carry blood to the leg and arm muscles.

This disease is found more often and more severely in smokers than in nonsmokers. The likelihood of pain in the legs with walking, amputation, and failure to successfully treat this disease, is significantly higher among smokers.

Smoking also can cause damage to the limbs by reducing proper blood flow to the area. Arteries in the leg may be clogged by the effects of smoking, and the leg muscles may not get adequate blood supply. This is a painful condition and may lead to limb amputation if the blood supply issues are not addressed.

Peripheral arteries going to the extremities are also highly susceptible to the vasoconstrictor effects of nicotine as well as the increase of clots and clogging risks posed by smoking. Smoking is a primary cause of much of the PAD seen, as well as a powerful aggravating factor for people who have other pre-existing conditions causing circulation problems to the extremities.

Smoking and Buerger's Disease

One condition, though, stands out as being truly unique and in many ways, and demonstrates the real addictive nature of nicotine better than any other cause. The condition is known as Buerger's Disease (thromboangiitis obliterans.) The most common age bracket that this disease strikes is in people between the ages of 20 to 40, normally too young to get circulation problems that result in amputations. While it is much more common in men, women are affected too. What makes Buerger's Disease unique is that it is basically exclusive to smokers. There are almost no documented cases of this disease happening in a nonsmoker. Smoking is the primary etiologic factor. This is a rare disease, but noteworthy because of this unique nature of happening only in smokers and can result in loss of the limb.

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Smoking Affects on Sexual Function

For men in their 30s and 40s, smoking increases the risk of erectile dysfunction by about 50 percent. Erection can't occur unless blood can flow freely into the penis, so these blood vessels have to be in good condition. Smoking can damage the blood vessels and cause them to degenerate; nicotine narrows the arteries that lead to the penis, reducing blood flow and the pressure of blood in the penis. This narrowing effect increases over time, so even if you have no problems now, things could change later. Erection problems in smokers may be an early warning signal that cigarettes are already damaging other areas of the body — such as the blood vessels that supply the heart.

Smoking and Aneurysms

Prior studies have found that smoking can have a dangerous effect on aneurysms. Smokers were more likely to develop aneurysms than non-smokers, and these aneurysms were more likely to rupture. When these enlarged blood vessels rupture, internal bleeding can occur. This bleeding can be fatal.

What Happens When You Stop Smoking?

Within 48 hours after quitting smoking, blood pressure decreases, pulse rate drops, body temperature of hands and feet increases, the carbon monoxide level in the blood returns to normal, the oxygen level in the blood increases to normal, the chance of a heart attack decreases, nerve endings start regrowing, and the ability to taste and smell is increased. Within the first year after quitting smoking circulation and lung function increase, and coughing, sinus congestion, and shortness of breath decrease.

If your primary care physician suggests you be referred to a specialist for vascular disease, see a vascular surgeon.

Please call with any questions:

Vascular surgeons are the only physicians treating vascular disease today who can perform all treatment options available, including medical management, minimally invasive endovascular procedures including balloon angioplasty, atherectomy, and stent procedures, and open surgical repair including bypass.



Only when you see a vascular surgeon who offers all treatment modalities will you be assured of receiving the care that is most appropriate to your condition.

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