

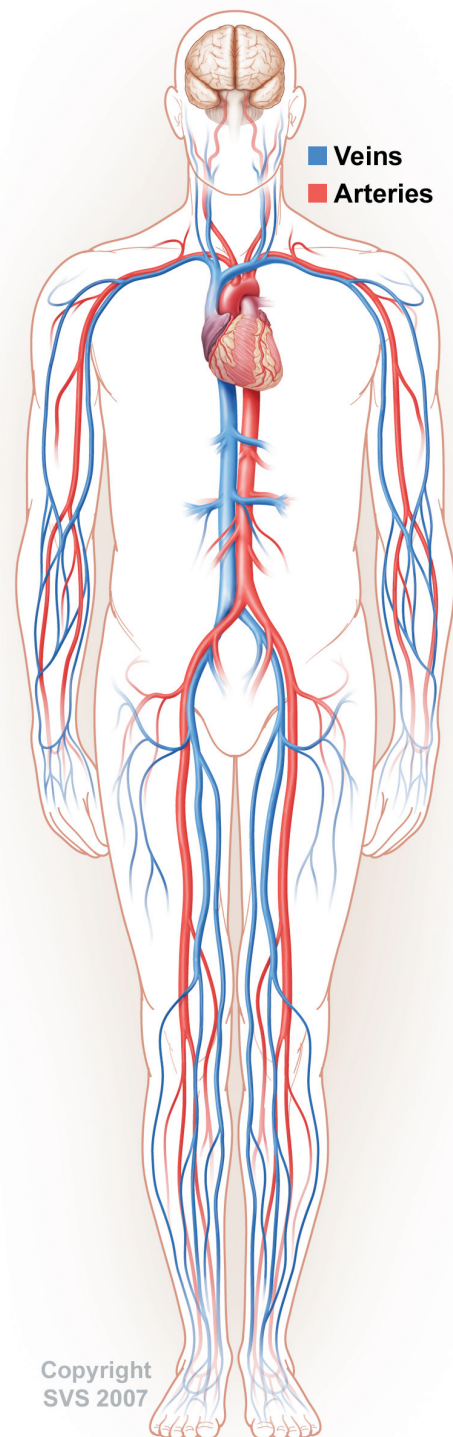
How Statins Improve Vascular Health for the Vascular Patient

There are a myriad of good effects for patients with all types of atherosclerosis when they take statins. Side-effects are relatively rare, and there are many available varieties of statins currently available. This allows careful selection of the best individual statin for each patient.

Statins are a class of drugs first isolated from fungi in the 1970's. These drugs all act as HMG-CoA reductase inhibitors, a key control point in the metabolism of serum cholesterol. These compounds were sought due to the known association of high cholesterol and cardiovascular events (stroke and heart attack). Specifically, when "bad" (LDL) cholesterol is high, the risk of heart attack and stroke is high. It was thought that these drugs would lower "bad" cholesterol, which would then lower the chance of these events. Over the intervening 40 years, this theory has been proven and many studies have shown benefits these drugs yield by lowering the risk of heart attack and stroke in persons at risk, particularly due to high cholesterol.

A lot of research effort was then directed to accurately define patient populations that would benefit the most from taking these drugs. Soon patients with known cardiac disease were evaluated. Despite having known disease and not just the risk factor of high cholesterol, patients with previous heart attacks and/or interventions (heart surgery or angioplasty and/or stents) benefited in survival and protection from other cardiac events from taking statins.

Patients with other arterial diseases, but not heart disease, were also examined. Patients with atherosclerosis (hardening of the arteries) of leg arteries and arteries supplying the brain benefited from taking statins. Again, incidence of stroke and heart attack were lowered in patients taking these drugs when compared to placebo (sugar pill). Further testing showed that patients taking these drugs while undergoing surgery or intervention for



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cardiac or vascular problems had a noticeably lower rate of complications during the surgical time period.

More recent research has suggested that statins promote regression of atherosclerotic plaque in leg arteries. Data also suggests that statins have effects beyond simply lowering the level of “bad” cholesterol in the blood stream. These compounds stabilize atherosclerotic plaques, making sudden rupture that causes stroke and heart attack less likely. They also lessen inflammation within the artery by improving the function of cells that line the inside of the artery. This likely leads to a lower chance of sudden thrombosis of an artery affected with atherosclerosis.

Few adverse effects of statins have been recorded since their introduction 40 years ago. However, the effects can be severe, and it is important to know the potential downside of these drugs. In rare circumstances, statins can cause liver damage. This doesn't cause symptoms and is the reason frequent laboratory tests are ordered when use of a statin is started. Statins can also cause a wide range of muscle injury. In its worst form, myositis results from statin use. This rapid muscle destruction can lead to kidney failure. This side-effect is also rare, but muscle pain and cramps are frequent and far less serious side-effects of statins.

Vascular surgeons are the only physicians treating vascular disease today who can provide all the treatment options available.



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