

Statins for Hyperlipidemia (High Cholesterol)

Examples of statin drugs

Brand Name	Chemical Name
Mevacor	lovastatin
Pravachol	pravastatin sodium
Zocor	simvastatin
Lescol, Lescol XL	fluvastatin sodium
Lipitor	atorvastatin calcium
Crestor	rosuvastatin
Vytorin	ezetimibe/simvastatin

Note: The statin cerivastatin (Baycol) has been voluntarily taken off the market by Bayer Pharmaceutical Division because of reports that it can cause rhabdomyolysis, a severe muscle reaction that can cause death. Most of the deaths have been among older adults receiving high doses of cerivastatin, especially when given with the fibric acid derivative medication gemfibrozil (Lopid).

How It Works

Statins block (inhibit) an enzyme the body needs to produce cholesterol. As a result, LDL cholesterol levels in the blood go down, thereby lowering total blood cholesterol levels.

The new combination medication Vytorin lowers cholesterol two ways: with a statin to block the production of cholesterol and with ezetimibe, which reduces the amount of cholesterol absorbed by the intestines.

Statins may also affect levels of certain clotting factors in the blood and lower the risk of clot formation. Lowering the risk of clot formation is important because clots can lead to heart attack or stroke. Statins also have anti-inflammatory effects that may help reduce the risk of coronary artery disease (CAD).

Why It Is Used

Statins are used to lower LDL cholesterol and thereby reduce the risk of heart attack and death in people with known heart disease and in people at high risk for coronary artery disease. Statins may be used alone or, for people with very high cholesterol, can be combined with bile acid sequestrants, niacin, or Zetia.

How Well It Works

Studies show that statins reduced the risk of heart attack and death in people who have taken these medications to lower their cholesterol.

- LDL cholesterol can be reduced by 18% to 55%. The newer, more potent statins can reduce LDL cholesterol levels even further.¹
- HDL cholesterol can be increased by 5% to 15%.¹
- Triglycerides can be reduced by 7% to 30%. The newer, more potent statins may lower triglyceride levels

even more.¹

- An important study (Air Force/Texas Coronary Atherosclerosis Prevention Study, or AFCAPS/TexCAPS) showed that for men over age 45 and women over age 55 who had average total and LDL cholesterol levels but a low HDL level who were treated with lovastatin, unstable angina and heart attack were reduced by 37%.²
- The West of Scotland Coronary Prevention Study (WOSCOPS) showed that pravastatin reduced the risk of heart attack by 31% and death by 22% in middle-aged men with elevated LDL cholesterol and the risk of heart attack of 1.5% per year.³
- Another important study (the Long-Term Intervention with Pravastatin in Ischaemic Disease, or LIPID, trial), one of the first and largest studies to include women, showed that women with coronary artery disease (previous heart attack or unstable angina) benefited equally well compared with men when they were treated with pravastatin and that there were fewer deaths from all causes.⁴
- The Scandinavian Simvastatin Survival Study (4S) showed that in people with CAD, simvastatin lowered total cholesterol by 25%, lowered LDL cholesterol by 35%, and raised HDL cholesterol by 8%. This resulted in a 42% reduction in deaths due to CAD.⁵
- The Heart Protection study showed statins are beneficial for a wide range of LDL levels. They lower risk significantly among those at highest risk for CAD, even if LDL levels are moderate.⁶
- A review of large clinical studies showed statins have the greatest benefit in people with the highest risk of coronary artery disease (CAD). However, the review failed to find a long-term benefit in lowering cholesterol in people over 75.⁷
- A later study (PROSPER) has shown that statins given for 3 years reduce the risk of heart disease in older people up to age 82.⁸
- The review also showed that compared to no treatment, treatment with statins resulted in 36 fewer nonfatal heart attacks, heart attacks with no symptoms, and unstable angina per 1,000 people. There were also 13 fewer deaths due to CAD per 1,000 people.⁹
- A review of large clinical studies showed that statins may lower the risk of stroke in people with CAD.⁷
- A review of two large clinical studies showed that statins were beneficial for reducing cholesterol in people who have had a prior stroke or transient ischemic attack (TIA) and have a history of CAD.⁷
- A recent study showed that a large dose of a statin started during hospitalization for heart attack, angina, or unstable angina reduced the chance of developing further episodes of angina requiring hospitalization.¹⁰
- Recent studies show that intensive cholesterol-lowering therapy decreases the progression of coronary artery disease compared with standard treatment.^{11, 12} In the PROVE IT study, people who recently had episodes of unstable angina or heart attacks received higher than standard doses of cholesterol-lowering drugs and had fewer subsequent heart attacks and strokes, and there were fewer deaths. The higher doses resulted in LDL levels around 60 mg/dl. (The LDL goal for people with CAD taking statins is below 100 mg/dL.) This large study suggests that intensive statin therapy (to achieve LDL levels much lower than 100 mg/dL) could save lives. Based on this study and several others, the National Cholesterol Education Panel released new guidelines that include more intensive treatment with statins as an option for those who are at moderate to high risk of heart attack.¹³
- New guidelines from the American College of Physicians suggest that the following people should take statins: those with type 2 diabetes and coronary artery disease, and those who have type 2 diabetes and any other risk factor for cardiovascular disease, such as high cholesterol. It is important, however, that you discuss with your doctor whether statins are appropriate for you individually, based on your condition and medical history.¹⁴

Side Effects

Statins have few side effects.

- The most common side effects are fatigue, upset stomach, gas, constipation, and abdominal pain or cramps.
- Liver enzymes may rise to more than three times their normal levels while a person is taking statins, but stopping the drug usually causes the level to fall back to normal. Regular blood tests are recommended to check liver function while taking statins.

- Muscle pain is a very rare side effect. Immediately report any severe muscle pain, weakness, or brown urine to your doctor, who may want to do a blood test. Muscle pain or weakness can be a sign of a severe muscle reaction (rhabdomyolysis) and should be evaluated by your doctor. (see below at the end of this article)

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What To Think About

These drugs do not cause side effects for most people who take them.

Avoid large quantities (usually more than 1 quart a day) of grapefruit juice. A chemical in the juice may increase blood levels of statins and, therefore, increase the risk of side effects, including potential damage to the liver or muscle tissue.¹⁵

No studies are available to confirm the long-term safety of statins.

New studies are focusing on combinations of statins and other medications, such as nicotinic acids or fibric acid derivatives. These combination medications are useful for lowering LDL and triglyceride levels. Statin and nicotinic acid combinations, such as the recently approved niacin/lovastatin (Advicor), may also raise beneficial HDL levels in those at risk for CAD because of low HDL.^{16, 17}

Regular blood tests to check liver function are recommended, but the frequency of testing may decrease over time. Usually, tests are done at 6 weeks and 12 weeks and then, if there is no increase in liver enzymes, every 6 to 12 months. The risk of liver damage appears to be lower than was first thought. People with liver disease should talk to their doctor before taking these medications.

People using statins should not take large amounts of niacin (a vitamin supplement) without telling their doctor.

These drugs are not recommended during pregnancy or breast-feeding or for people younger than 18 years of age.

One of these medications, lovastatin, works better with food and should be taken with the evening meal. The other statins can be taken without food, and taking them at bedtime is recommended.

People taking the combination medication ezetimibe/simvastatin (Vytorin) should tell their doctor if they are taking other medications to treat high cholesterol or triglycerides, such as fibric acid derivatives (gemfibrozil, bezafibrate, or fenofibrate) or niacin or nicotinic acid. Other medications, including antibiotics (such as erythromycin and clarithromycin) and antifungal drugs, should not be taken with ezetimibe/simvastatin.

Tell your doctor about all the medications you are taking before taking any medication for the first time.

References

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IMPORTANT!!



COMMENT ON MUSCLE ACHES and Statins

The sources of misinformation on this come from various places (internet, some friends and family, etc). The actual incidence (frequency) of this is rare. The benefits of the statin drugs FAR OUTWEIGH this risk. Should you develop an ache, please record it on the following pages AND report this to us (mostly so you don't stop this vital medication without accurate advice).

Conezyme-Q 10 (also called CoQ10) is a oil-soluble vitamin-like substance this is vital for energy transport in the mitochondria of cells (electron transport). Anecdotal evidence exists that may support a 'protective role' of CoQ10 in preventing the muscle aches and pain associate with statin drugs. If you'd like to take CoQ10, consider buying this supplement and taking 100-200mg per day. This may help prevent or treat these muscle aches but again, evidence is scant but some patients do report a benefit.

Let's consider the relative risk of statins compared with acetaminophen (Tylenol, etc). The risks of statins are FAR BELOW that of even acetaminophen (Tylenol), so PLEASE don't read the misinformation or listen to well meaning friends and family who may not be knowledgable on this, TALK TO US FIRST!



Muscle Ache History

For Patients Beginning Statin Therapy

MUSCLE ACHE INFORMATION FOR PATIENTS

It's not unusual for adults to have muscle aches from time to time. Such pains may occur because an old injury is "acting up," because you exercised more than usual, or for some other reason. Sometimes, muscle aches occur for no obvious reason.

It is valuable to document recent or recurrent muscle aches before you start taking the cholesterol-lowering drugs known as statins.

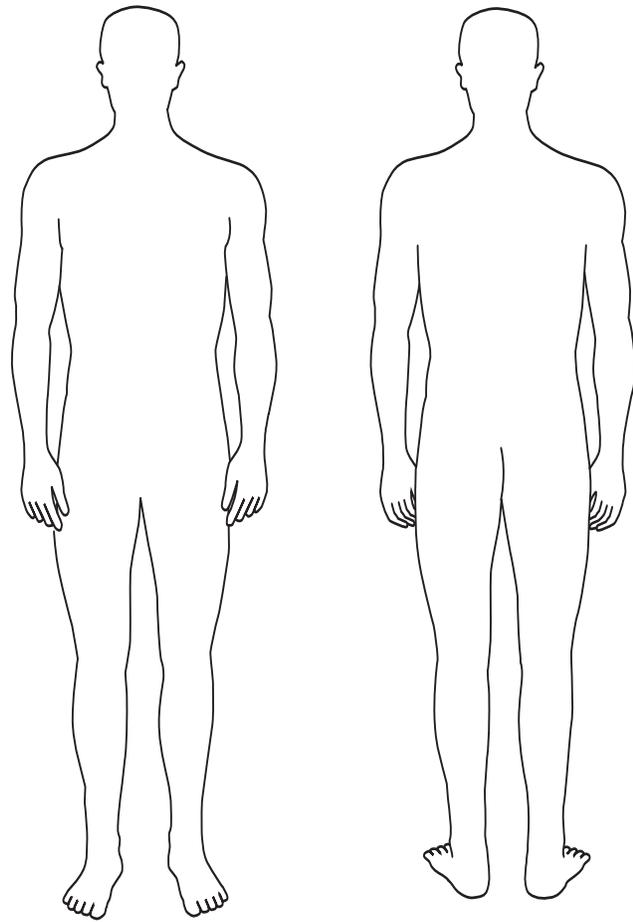
Why? Statins are effective at lowering blood levels of low-density lipoprotein cholesterol (LDL-C), the so-called "bad cholesterol" that, in high levels, is associated with an increased risk for heart attack. However, about 1% to 3% of people who take statins experience muscle aches. When associated with statin use, such muscle aches usually are modest and go away over time, but in rare cases they can signify a serious problem.

The fact that someone who is taking a statin has a muscle ache does not necessarily mean that the discomfort is related to the drug. By completing this form now, you will help your physician to evaluate the possible causes of any muscle ache you might have after starting statin therapy, and to decide what assessments or other steps, if any, are advisable.

On the diagrams to the right, circle all the areas of your body where you have experienced a muscle ache in the last 2 years or where you have had recurrent aches in the past. Then think for a minute about which ache bothers or bothered you the most, and write the number 1 inside that circle. If an ache affects both shoulders, both knees, etc, circle both and write the number 1 in both.

If you've circled more than one place, write a 2 in the appropriate circle to show which ache bothers you the second most, and number any other aches in order of their significance.

In the chart on the other side, provide some information about each ache or, if you haven't circled any areas on the diagrams, simply write "No muscle aches" on the first line.



Front

Back

Continued on other side...

Patient Name: _____ Date: _____

Muscle Ache Information Before Starting Statin Therapy

<i>Ache</i>	<i>Last experienced</i>	<i>Duration</i>	<i>Description (eg, stiffness, soreness)</i>	<i>Cause (if known)</i>	<i>Severity 1 = mild, 10 = severe</i>
1.					
2.					
3.					
4.					
5.					

If you experience a muscle ache while taking a statin, notify your physician. Also be sure to tell your doctor all of the medications (both prescription and over-the-counter drugs), vitamin supplements, and herbal preparations you are taking.

Reducing elevated levels of LDL-C is important, as is identifying potential drug side effects. By sharing questions and concerns with your physician, you can play a major role in enhancing your cardiovascular and overall health.

Visit www.heartadvocacy.org to learn more about the HEART ADVOCACY NETWORK program.

