



## Who Should Take Statins?

Cholesterol-lowering medications, commonly referred to as statins, are considered so beneficial that some enthusiastic doctors declare, "they should be put into the drinking water." The pharmaceutical companies and their sales staff (most medical doctors) would like you to believe that simply lowering your cholesterol number is the major solution to your health problems. And that is untrue.

Statin medications inhibit the activity of an enzyme involved in the production of cholesterol in the liver. The name of the enzyme is 3-hydroxy-3-methylglutaryl-coenzyme A reductase. Thus the drugs are called HMG-CoA reductase inhibitors—or a much easier name, statins. When this enzyme is blocked, the liver makes less cholesterol and the blood levels of cholesterol fall.

Statins do reduce cholesterol measured in the blood, but what is unclear is the real benefit for the patient—will the patient live longer and/or healthier? Or will he or she simply have a fatal heart attack the same day (as would have occurred without the medication), but with a lower blood cholesterol level? The decision to take these medications should not be made lightly. This is a lifetime commitment and for a young person this could mean 50 years of drug-therapy with the potential of serious side effects at a cost of more than \$1000 per year.

### No One Dies of High Cholesterol

During my forty years of medical practice, I have never seen anyone die of high cholesterol (and neither has any other doctor). Cholesterol is a risk factor—this means it is a sign that reflects: the richness of the person's diet, his or her ability to metabolize the rich foods, and most importantly, the overall health of the body. The cholesterol molecules, themselves, in the bloodstream are relatively non-toxic. If cholesterol, itself, were the problem, then their predictive value for heart attacks and strokes would be close to 100%—high cholesterol would always mean sick arteries. However, I know many people with cholesterol levels over 300 mg/dL, with perfectly clean arteries—and just the opposite, people with levels below 170 mg/dL who have suffered a major heart attack. Furthermore, when the arteries of patients taking statins are studied over time, regression of the underlying artery disease, atherosclerosis, occurs in only a minority of patients, even if cholesterol drops profoundly under the influence of powerful medications.

The underlying truth is: there is a strong correlation between the richness of a person's diet (reflected by cholesterol and saturated fat content of the food choices) and the level of cholesterol found in that person's blood. The richer the diet, the higher the blood cholesterol. The association continues: the higher the cholesterol in the diet and in the blood, the more likely disease will happen—such as heart attacks, strokes, and a variety of cancers. The real culprit is the rich diet—the elevated cholesterol is, more or less, a secondary finding.

Because of the enthusiastic and dishonest promotion of these high profit drugs, many patients actually believe they are "cured" of their health problems—as a result they may see no more need to make beneficial diet and lifestyle changes, which in truth make a far greater difference than any medications. One recent analysis found smoking cessation and the use of plain aspirin to be much more cost-effective than the prescription statins.<sup>1</sup>

### High Risk Patients Show the Greatest Benefits

Patients with the greatest risk of a future tragedy should receive the most intensive treatment with diet and/or medications, because they will experience the greatest benefits with reduction of heart attacks and strokes, at the most reasonable costs.

The risk of future tragedies is predicted by observing signs, called risk factors. These include high

blood pressure, cholesterol, triglycerides, uric acid, and blood sugar, as well as, being overweight. Information on family history, alcohol use, exercise, and smoking is also important. An even more reliable predictor of future problems is a person’s history of having problems with his or her arteries. Thus, people with a history of a heart attack, stroke, bypass surgery, and/or angioplasty are at the highest risk and the ones most likely to benefit from statin therapy.

**Increasing the Market by Disease Mongering**

When I started in medicine in the 1970s, a high cholesterol level was considered to be above 350 mg/dL. The pharmaceutical industries were in their infancy and the primary medications for lowering cholesterol were the low-profit vitamins, niacin, and cholesterol binding agents. These drugs also had disturbing side effects like flushing (niacin) and constipation (binding agents). Using this definition (350 mg/dL or greater) there was only a small market for cholesterol-lowering medications. By no coincidence, with the discovery and popularization of high-profit statins over the past two decades, the definition of high cholesterol has fallen so that anyone with a cholesterol level above 200 mg/dL is abnormal. Over half the people following the Western diet are now potential customers for statins by this definition. Lately, expert opinions have suggested that ideal cholesterol would be below 150 mg/dL. That means, almost everybody needs to be on statins—we might as well put these drugs in the drinking water.

**Most Women Should Avoid Statins**

General agreement among doctors is that people at low risk should not be taking statins. Women, especially before menopause, have a much lower risk of developing heart disease, than do men of a similar age. To date, none of the large trials involving women who already have heart disease (secondary prevention) has shown a reduction in overall mortality in women from using statins.<sup>2</sup> For women who have never had heart disease (primary prevention), trials have shown neither an overall reduction in death (mortality benefit), or a reduction in heart attacks or surgery. One meta-analysis suggested that overall mortality may actually be increased by 1% over 10 years in both men and women.<sup>2</sup>

**Muscle Damage from Statins**

Most medical doctors think statins have few side effects—and that these are mild and reversible. Complaints by patients on statins are often dismissed by their doctors as unrelated to the medication, and the issue of side effects has not been well studied, therefore, the true incidence is unknown. (See below for common side effects.)

**Relative Potency of Statins and Risk of Muscle Damage<sup>4</sup>**

	Potency*	Fatal Rhabdomyolysis**
Fluvastatin (Lescol)	1	0
Pravastatin (Pravachol)	2	.04
Lovastatin (Mevacor)	3	.19
Simvastatin (Zocor)	6	.12
Atorvastatin (Lipitor)	12	.04
Cerivastatin (Crestor)	200	3.16

The most serious adverse effect of taking these medications is damage to the muscles, called rhabdomyolysis, which can occasionally result in death. An estimated 1% to 5% of people on these medications experience muscle inflammation and pain (myositis). The more potent the statins; the greater the risk of muscle damage. A recent study, with electron microscopy and biochemical approaches, examined the muscle tissues of patients on statins. They found muscle cell damage in over 70% of people on statins, *even when they had no complaints of pain.*<sup>3</sup>

\*Relative potency of 60 mg daily, with Fluvastatin equal to 1  
 \*\* Cases per million prescriptions

## Alternatives Medications to Statins

There are also alternative cholesterol-lowering medications, such as time-honored niacin and a cholesterol-binding agent (Colestid, Questran, and Welchol), which have been used since I started practice and have benefits equal to statins (which are limited as we have discussed).

There are also newer medications recently introduced, like Zetia and Tricor. No doubt they lower cholesterol, but life-saving and health-improving benefits have not been demonstrated. (See below for a more complete description of cholesterol-lowering medications.)

There are several "natural" cholesterol-lowering medications that according to published studies lower cholesterol. The ones I use most often are garlic, oat bran, vitamin C, and guggulipid. (I no longer use vitamin E because studies show it increases heart disease and death.<sup>5</sup>) Because of the low cost, and minimal side effects I recommend these often. However, my experience has been that few patients attain a substantial reduction in cholesterol by this approach. Therefore, when I feel the indication to lower cholesterol is clear, I resort to prescription medications. (More information on these **"natural" cholesterol-lowering medications** can be found in my September 2002 newsletter.)

## I Do Prescribe Statins and I Hope I Guess Right

As a medical doctor I am obliged to offer every one of my patients the best care possible, based on the best evidence available. Unfortunately, most of that evidence on the efficacy of medications has been heavily tainted by pharmaceutical companies—so the truth is hard for me to know. Based on current published research, I try to do the best for my patients, but I reserve the right to change my opinion on any drug I use.

I see many people with elevated cholesterol levels who also have a past history of heart disease—heart attacks, angioplasty and bypass surgery—and some with strokes. I usually offer these high risk patients the statins. But, I always qualify my prescription by telling them that I am only guessing (and hoping) that I will be doing them more good than harm. My guess is educated because I have been practicing (a descriptive word) for about 40 years and I have read and understand most of the research on this subject. Thus, I would not make the offer if I did not believe it to be correct.

### Possible Scenarios with Cholesterol above 200 mg/dL

A 60 year-old woman who is trim, exercises daily, does not smoke, and has no family history of heart disease = no cholesterol-lowering medication.

A 40 year-old man who suffered a heart attack last month = yes, cholesterol-lowering medication.

A 50 year-old overweight man with diabetes, no exercise and is unable to change his diet = yes, cholesterol-lowering medication.

A 45 year-old overweight man who has decided to make serious diet and lifestyle changes, and also hates to take drugs = no cholesterol-lowering medication.

A 75 year-old woman who is going to follow the diet and exercise, but has a premonition that she is going to die of heart disease and insists on the medication = yes, cholesterol-lowering medication.

A 65 year-old man with a recent history of an angioplasty, who took statins, but developed muscle pains = yes, cholesterol-lowering medication, like niacin and Colestid, but no statins.

In these cases other decisions can be easily justified, but with little supporting evidence.

I also make it clear that since I am offering only my best guess, that the patient must be involved in the decision. Some people are very uncomfortable about having a high cholesterol level regardless of how much I try to reassure them that I believe they are in good health and at very low risk of a problem. Others fear the drugs, and would take almost any risk to avoid them. My decision to write a prescription weighs heavily on each person's feelings.

When I believe the situation warrants aggressive treatment, one of my goals is to lower total cholesterol below 150 mg/dL. The LDL-cholesterol should be below 80 mg/dL.

### **Preferred Statin?**

Some statins are able to cross cell membranes easily—they are referred to as the fat-soluble statins (also hydrophobic and lipophilic statins). These include lovastatin, simvastatin, fluvastatin, and atorvastatin. There is concern that these fat-soluble statins may enter the cell and interfere with various substances essential for cell function, thus reducing their lifesaving benefits.<sup>6</sup>

All statins lower total cholesterol and LDL-cholesterol, and sometimes they show a small reversal of atherosclerosis. But the fat-soluble statins, in one recent review, showed less reduction of cardiac events (heart attacks, angioplasty, bypass surgery, sudden death, and overall mortality) than did a statin that is not fat soluble (and enters the cells less readily), called pravastatin (Pravachol).<sup>6</sup> The primary goal of treatment is to reduce life-damaging events (not just lower cholesterol).

Based on this paper<sup>6</sup> and the fact that pravastatin is generic (less costly), I am inclined to prescribe this variety over the others. (Most statins sell for the same price for a pill regardless of the strength; eg. 80 mg, 40 mg, 20 mg. To cut costs even further, tablets—except for time-release tablets—can be split in half.)

### **How Long Should Patients Take Cholesterol-lowering Drugs?**

When the medications are stopped the cholesterol rises—usually to pretreatment levels. So once you are on these medications, you may be on for life; unless you make serious dietary and lifestyle changes. With a change in diet, not only does the cholesterol drop, but the artery disease heals. This is referred to as "reversal," and can be seen in 82% of people by the first year.<sup>7</sup> After the first year, the benefits continue with even more reversal and healing seen. Dean Ornish, MD, says, "According to the PET scans, 99% of the patients stopped or reversed the progression of coronary heart disease."<sup>8</sup>

The decision as to when to stop taking statins is based again on guess work. If the patient with a past history of heart artery disease has made remarkable improvements in health through diet and exercise (reflected in weight loss, vigor, blood pressure and other risk factors, improved feelings of well-being, etc.), then my guess is one to five years of cholesterol-lowering therapy may be enough. To help with this decision, I check cholesterol levels after the medications are stopped. If the cholesterol level remains below 150 mg/dl without medication, I feel even more confident that the patient will do well (another guess).

### **The Diet Is Forever**

A no-cholesterol, low-fat diet (The McDougall Diet) is the first step to lowering elevated cholesterol and cleaning out the arteries. You can expect a reduction in cholesterol by 20% to 45% with strict adherence. In general, the higher the initial level the greater the reduction after a change in diet. There are no side effects to this approach, and most people reduce their food bills by 40% or more (especially those in the habit of eating out). Plus, this is the same diet that benefits the rest of the body by causing loss of excess weight, relieving aches and pains, regulating bowel function, lowering other common risk factors (blood pressure, blood sugar, triglycerides, etc.), and reducing the risk of future diseases and prolonging life—what a deal! If only money could be made from you changing your diet!

Regardless of the patient's chances of benefits and risk from medications, diet and lifestyle changes

## Common Prescription Cholesterol-lowering Medications

It's important to remember that medications are a supplement to--not a substitute for--diet, exercise, and weight loss. Medications are even more effective when combined with a no-cholesterol, low-fat diet.

### Statins:

Warnings and side effects: Never take statins during pregnancy or while breastfeeding. You should also avoid statins if you have liver disease, or if the drug gives you an allergic reaction. Common side effects include abdominal pain, abnormal heartbeat, accidental injury, allergic reaction, arthritis, back pain, bronchitis, chest pain, constipation, diarrhea, dizziness, flu symptoms, fluid retention, gas, headache, indigestion, infection, inflammation of sinus and nasal passages, insomnia, joint pain, muscle aching or weakness, nausea, rash, stomach pain, urinary tract infection, and weakness.

Advicor: a combination of extended-release niacin and lovastatin (Mevacor)

Altacor: an extended-release form of the cholesterol-lowering drug lovastatin, which releases small amounts of the drug throughout the day

Altoprev: an extended-release form of the cholesterol-lowering drug lovastatin, which releases small amounts of the drug throughout the day

Caduet: Atorvastatin with amlodipine (a blood pressure medication)

Crestor (rosuvastatin): Some cardiologists call Crestor "the Gorilla" statin.

Lescol XL, Lescol (fluvastatin)

Lipitor (atorvastatin)

Pravachol (pravastatin)

Vytorin: a combination of simvastatin + ezetimibe

Zocor (simvastatin)

### Non-Statin Cholesterol-lowering Agents:

Colestid (colestipol), Questran and Questran Light (cholestyramine resin), and Welchol (colesevelam hydrochloride): cholesterol binding agents, also referred to as a bile acid sequestrant because they work by binding with cholesterol-based bile acids and take them out of circulation. This prompts the liver to produce a replacement supply of bile acids, drawing the extra cholesterol it needs out of the bloodstream. More common side effects may include: constipation, indigestion, muscle aches, sore throat, and weakness. Because they inhibit the absorption of other medications they should not be taken at the same time.

Niaspan (niacin 500mg extended-release tablets): In large doses this B vitamin (niacin) lowers cholesterol and triglycerides. More common side effects are flushing, elevation of blood sugar and liver injury.

Tricor (fenofibrate capsules): works by promoting the dissolution and elimination of fat particles in the blood. Risk of rhabdomyolysis is increased when combined with statins. Taken with meals.

Zetia (ezetimibe): acts by diminishing the absorption of dietary cholesterol through the intestines. More common side effects are: abdominal pain, back pain, diarrhea, joint pain, and sinusitis. Zetia is not recommended for people with moderate to severe liver disease, or for children under 10.

should be the first and most enthusiastic prescription made by all doctors for their patients. Only then, as a last resort, the patient and the doctor should look into medications.

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