

# Benefits and Risks of Statins

## BENEFITS AND RISKS OF STATINS

**S**TATINS have been in use since 1980s and the one question patients often ask is about the risks of statin therapy. It is a well known fact that elevated LDL cholesterol is one of the leading risk factor for heart attack, stroke and death from heart disease.

In addition, studies have shown that lowering LDL cholesterol decreases all of those risks, as well as reduces the need for bypass surgery and stents. Lifestyle changes and diet can sometimes lower LDL, but they may not be sufficient to override the genetic factors that can cause high LDL. That's where medication's like statins are helpful. How does statin works? 1.

Haulting further progression of coronary disease and in some cases regression of coronary Artery disease. This may take more than a year of starting therapy and at times you need to go on high dose statin therapy and you need to bring your LDL close to 50 or even lower. There is no evidence that lower LDL is bad. 2.

Plaque stabilization- coronary artery plaque rupture is a central component in most patient with heart attack. Many patients have multiple unstable plaques in different coronary arteries, suggesting widespread inflammation in the coronary circulation. Ability of the statins to induce plaque stabilization and preventing its rupture may be an important mechanism of benefit. 3.

Reduced inflammation- inflammation appears to be another important factor, causing atherosclerosis and plaque rupture. Elevated C reactive protein( CRP ) which is a marker for inflammation, are associated with progression of atherosclerosis. Reducing the inflammation protects the risk of the first heart attack in apparently healthy males.

Statins help to reduce the serum CRP level and this effect is unrelated to lipid level 4. Reversal of endothelial dysfunction- Inner most layer of the coronary artery is called endothelium and abnormal functioning of this endothelium causes plaque buildup. Statins improve the endothelial function, and this helps to reduce plaque buildup. 5.

Decreased thrombus or clot formation - clot formation at the site of plaque rupture causes most heart attacks. Statin therapy has a variety of effect that may reduce thrombus or clot formation. This is called decreased thrombogenicity.

Side effects of statins. 1 Muscle aching - About 10% of the people who take statins may develop muscle aching, which subsides when they stop taking the statin. Sometimes, changing to a different statin may help to reduce the incidence of muscle symptoms. Sometimes using CO Enzyme q 10( CO Q 10 ) at a dose of 100 to 200 mg daily can relieve the symptoms of muscle aching.

CO Q 10 has no side effects and it is an over the counter supplement. Many times, I start the patients on lowest possible dose ( For example Rosuvastatin 2.5 or 5 mg ), starting at once weekly for several weeks and then twice weekly for several weeks, three times weekly for several weeks and then once daily and gradually increase the dose. This almost always helps to eliminate muscle aching.

If you have severe muscle aching, you should tell your doctor immediately to check for muscle damage called rhabdomyolysis, which is an indication to stop statin. ( These patients have very high level of a muscle enzyme called CPK which can be detected by a simple blood test ). This indeed is a serious condition. Fortunately, it is very rare.

In my 43 years of practice, I had only 2 patients who experienced this problem, even though I have used statins on thousands of patients over the years. Statins can also increase the risk of developing diabetes by about 10 to 30%, possibly by preventing your body's insulin from working well ( . Insuline Resistance ).

This is more common in people with obesity and pre-diabetes who are already prone to develop diabetes.

Regardless, the cardiovascular benefit of statin therapy for these high risk patients outweighs the risk of diabetes. In addition, if test shows that a person's blood sugar is rising after they started taking statins, switching to a different medication that also lowers cholesterol and reduces cardiovascular disease risk can be done. These medications include.

EZETIMIBE ( ZETIA ), one of the PCSK9 Inhibitors like Alirocumab ( PRALUENT ) or Evolocumab ( REPATHA ). The later 2 are injectable and given twice each month. Inclisiran ( LEQVIO ) is another injectable medication, which is given twice a year. A latest one is Bempedoic acid ( NEXLETOL ) which is given orally.

All these medications , not only lower LDL level, but also decreases the risk of Heart disease, just like statins. The reason why we use statin more often is because of the fact that statins have long track record, extensively studied , very effective and very inexpensive.

Liver function test needs to be done about 2 months after starting statins. and then twice a year, since some people may develop abnormal liver function test. Concerns about the statins effect on the brain such as cognitive impairment or dementia are unfounded. Many large trials have specifically tested and found no decrease or increase in cognitive function overtime.

**STATINS SHOULD NOT BE USED DURING PREGNANCY.**

One more thing. Coronary artery disease is a progress disease. It starts early in life and progresses relentlessly for the rest of our lives. So we need to think about prevention, not just when you are 40 or 50 years old. You got to think about next 20,30,40 years or longer.

That is where statins help, in addition to all the life style changes like exercise, weight reduction, diet, smoking cessation, good quality 7-8 hrs of sleep at night. In most people, Low dose Aspirin for primary prevention is not needed ( That means before you develop heart attack or Cardiovascular disease). Sorry for the length of this write up.

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