

## What are statins and how do they help lower high cholesterol?

Statins are a class of medications used to treat high cholesterol levels in the blood. Cholesterol comes from two sources: it is created by the liver and can also come from foods that are eaten. Your body uses cholesterol to make hormones, vitamin D, and to help digest foods. High blood cholesterol is a condition in which you have too much cholesterol in your blood. It may lead to heart disease.



Exercise, diet changes, and statin medications are “first line” treatments of high cholesterol. Statins help block an enzyme in the liver that produces cholesterol. This block or reduction of the enzyme lowers overall cholesterol levels. By decreasing cholesterol levels, statins help patients decrease their risk of having a heart attack or stroke.

## What is important to know about statins and muscular dystrophy?

The most common side effects from statins are muscle pain or muscle cramps. These side effects have been reported by as many as 25% of patients on statins. Monitoring these potential effects is important in myotonic dystrophy (DM) and FSHD because both can cause muscle pain, weakness, and cramps. It may be difficult to distinguish if muscle pain or cramps are caused by statin side effects or muscular dystrophy. Many physicians use blood tests of creatine kinase (an enzyme from muscle) to identify early potential harmful effects of statins on muscle.

To help us learn more about statins, Registry members completed a survey developed by pharmacy students and faculty at the Wegmans School of Pharmacy (WSOP) at St. John Fisher College, Rochester, NY. The pharmacy team also analyzed data from the National Registry. In the National Registry, high cholesterol was reported by 29% of DM members (276 out of 952 patients) and 24% of FSHD members (138 out of 576 patients), both higher compared to 17% of the general US population. Over 300 members of the Registry completed the pharmacy survey. Results showed that 32% of participants take a statin or have taken a statin in the past to help lower their cholesterol. Many of these participants noted that they experienced muscle pain from their statin use. The pharmacy team is aiming to publish their findings this year. In general, more information and research is needed to determine the overall risk and benefits of statins in DM and FSHD.



If you are taking a statin and you believe your muscle pain or cramps are related to the statin, be sure to talk to your healthcare provider. Otherwise, it is important to keep taking the statin for the proven benefit in preventing heart attack or stroke.

## What are some other ways to lower cholesterol besides statins?

A diet consisting of low saturated fat (less than 7% of daily calories), low cholesterol (less than 200 mg/day), and high fiber (around 10-25 grams/day) may also help lower cholesterol and prevent heart attack or stroke. Moderate exercise and physical activity for 30 minutes most days of the week can also help. Changes in diet and physical activity do not have to be sudden – any improvement may provide a benefit.

Aside from statins, there are other “second line” medications that may help lower cholesterol in some patients. Some of these medications include cholestyramine (Questran<sup>®</sup>), fenofibrate (Tricor<sup>®</sup>), niacin, or ezetimibe (Zetia<sup>®</sup>). Some over-the-counter supplements such as plant sterols (recommended dose of 2 grams/day) may have some benefit in lowering cholesterol. If you are concerned with high cholesterol or your statin medication, be sure to talk to your healthcare provider for more information and to discuss what options are best for you.

### References

- Gu Q, Paulose-Ram R, Burt VL, Kit BK. **Prescription cholesterol-lowering medication use in adults aged 40 and over: United States, 2003-2012** [Internet]. Hyattsville, MD: Centers for Disease Control and Prevention. [updated 2012 Dec; cited 2015 Jul 31]. Available from: <http://www.cdc.gov/nchs/data/databriefs/db177.htm>.
- Information from the National Institutes of Health about high blood cholesterol: [www.nhlbi.nih.gov/health/health-topics/topics/hbc](http://www.nhlbi.nih.gov/health/health-topics/topics/hbc)



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