



Why may I need to take medications that lower my blood lipids?



The short answer is that even after changing your diet and sticking to an exercise program, you may still have cholesterol or triglyceride (kinds of lipids or “fats” in your blood) levels that are too high for your health.

This can put you at risk for having heart problems in the future. Taking certain medication(s) in addition to leading a healthy lifestyle can decrease your low-density lipoprotein (LDL) cholesterol level, your triglyceride level, or both. High levels of cholesterol, especially LDL-cholesterol, can cause health problems such as heart attack and stroke.

Medicines that lower LDL-cholesterol

The most common medications that are used to lower LDL-cholesterol levels are medicines from the STATIN family. These are the medications ending in “statin” such as atorvastatin or rosuvastatin. Statins work by blocking cholesterol from being made in the liver. Statins are very effective but sometimes people don’t tolerate them or need additional medications to get to the ideal LDL-cholesterol level recommended by their doctor. If you are on a statin and are unable to take a statin, there are other ways to lower your LDL-cholesterol.

Drugs often work in different ways to lower cholesterol and triglycerides. However, generally, they either **reduce absorption, decrease production, or increase disposal of cholesterol and triglycerides** to help you achieve healthy levels of both. That, in part, is why your doctor may recommend combinations of drugs to help you stay healthy.



You can learn more about statins at [LearnYourLipids.com](https://www.learnyourlipids.com) – just search “statins” in the search box!



EZETIMIBE

The next medicine to add to your statin is an oral medicine called ezetimibe (eh-zet-ih-mibe)¹. This medicine is a once-a-day pill that decreases cholesterol being taken up from the gut into the bloodstream. It is very well tolerated in general and can decrease your LDL-cholesterol levels by 20-25%.²



PCSK9 INHIBITORS: ALIROCUMAB, EVOLOCUMAB

Some people need an additional medicine beyond ezetimibe and a statin. Guidelines provided by the American Heart Association and others in 2018 recommend a type of medicine called a PCSK9-Inhibitor. These medicines are antibodies that block the action of the PCSK9 protein whose job is to regulate levels of the LDL receptor. The LDL receptor’s job is to pick up LDL from the blood stream. When PCSK9 is blocked, there are more LDL receptors available to pick up LDL and this causes LDL-cholesterol levels in the blood to decrease. These drugs are very effective and can lower LDL-cholesterol levels by 50% or more. PCSK9 inhibitors are taken as an injection under the skin usually every two weeks although a once-a-month option is also available. People can take these injections themselves at home.



INCLISIRAN

Inclisiran is another type of PCSK9 Inhibitor but it uses a synthetic version of a molecule found naturally in our cells called small interfering ribonucleic acid (or siRNA) that stops PCSK9 protein from being made. Like the other PCSK9 inhibitors, inclisiran is also taken as an injection under the skin but, with the exception of 2 starter shots, it only needs to be taken once every 6 months. It is very effective and can decrease LDL-cholesterol by more than 50%.³ Although it is approved for use in Europe, as of April 2021, inclisiran is not yet approved in the US.



BEMPEDOIC ACID

A medicine that became available in February 2020 and has been actively studied is bempedoic (bem-peh-do-ic) acid.⁴ It works by blocking cholesterol production. It is taken as a once-daily pill that can reduce LDL-cholesterol levels by about 15-25% and can be used along with statins and/or ezetimibe in patients who cannot take statins. It can be combined with ezetimibe to lower LDL-cholesterol levels by up to 35%.



BILE ACID BINDING RESINS OR BILE ACID SEQUESTRANTS

This class of medications work by binding up bile acids, which are made in the liver and released into the gut and used for digestion. Most of these bile acids are reabsorbed and reused by the body. These medications grab the bile acids and take them through the gut and out of the body. Because the liver needs cholesterol to make bile acids, more cholesterol is taken up from the blood stream and causes lower LDL-cholesterol levels. Examples of bile acid sequestrants are cholestyramine, colestipol and colesevelam. They are used less often now because of other more effective choices to lower cholesterol levels.

HOMOZYGOUS FAMILIAL HYPERCHOLESTEROLEMIA (HOFH)

HoFH is a genetic (inherited from parents) disorder that causes very high LDL-cholesterol. People with HoFH are likely to need several and special medications to reach LDL-cholesterol levels recommended by their healthcare team. There are two medications approved for use in people with HoFH.



EVINACUMAB

Evinacumab was approved in February 2021 for the treatment of HoFH. It is a monoclonal antibody against a protein called ANGPTL3 and blocks its action. ANGPTL3 stops break down of lipids in the body, so when its action is blocked, LDL-cholesterol levels are decreased in the blood. Evinacumab is given as an intravenous (into a vein) infusion every 4 weeks. It can lower LDL-cholesterol levels by an average of 47% at 6 months.⁵



LOMITAPIDE

Lomitapide blocks the production and secretion of very low-density lipoprotein (VLDL) which leads to decreased LDL-cholesterol production and lower LDL-cholesterol levels in the blood. It is taken as a once daily pill and reduces LDL-cholesterol by about 40% in patients who are also taking a statin.⁶

Medicines that lower triglycerides

Studies show that high triglycerides may lead to heart disease or stroke⁷. In many cases you can control your triglycerides by living a healthy lifestyle. However, some people need medications to lower their triglyceride levels when diet and exercise are not enough. There are several medications that lower triglyceride levels.



FIBRATES

The fibrate class of medications have been used for a long time. They decrease production and increase break down of triglycerides.

Gemfibrozil, a commonly used fibrate, is an oral pill given twice a day usually. It has to be used with caution if someone is already on a statin medication because it can sometimes lead muscle problems due to effects on blood levels of statins.

Fenofibrate is another type of fibrate which is an oral pill that only needs to be taken once a day. There are several brand names for fenofibrate. In general, it does not cause problems when used with a statin.

Fenofibric Acid is a type of fenofibrate which is also taken in pill form.

In general, the benefit of fibrates is limited to people with very high triglyceride levels, usually greater than 500 mg/dL.



NICOTINIC ACID (NIACIN)

Niacin is a vitamin which was used much more frequently in the past. It lowers both LDL-cholesterol and triglycerides. It is taken as a pill once or twice a day. It has more side effects than most of the other medications. The current role of niacin is mostly limited to people who cannot tolerate other medications.



OMEGA-3 FATTY ACIDS

Recently there has been a lot more interest in marine omega-3 fatty acids used to decrease triglyceride levels, as well as decrease risk for a heart attack or stroke, due to a study that used high doses of icosapent ethyl (pure eicosapentanoic acid or "EPA") in patients with high triglyceride levels.⁷ Currently there is only 1 prescription-strength EPA medication available. The medication is given in pill form twice a day. Another prescription omega-3 contains EPA and docosahexaenoic acid (DHA). It is also taken in pill form twice a day. It has not been studied for its effect on decreasing the risk of heart attack and stroke and is used for very high triglyceride levels.

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