

MassMedLink to Health

Information on Hyperlipidemia

Hyperlipidemia is a condition in which blood levels of lipids also known as fats are high. It is also known as high cholesterol. The lipids that are typically high are cholesterol and triglycerides. Our body is able to make cholesterol and triglycerides through the liver. Cholesterol and triglycerides also comes from the foods we eat. If there is too much cholesterol in the blood, it gets trapped in the blood vessels causing plaque. The plaque can narrow the blood vessels and make them less flexible, and may decrease blood flow. Blood cholesterol levels are linked to an increase risk of heart disease. In fact, the higher your cholesterol, the greater your risk for experiencing a stroke, developing chest pain or having a heart attack.

Your health care provider will take a blood sample to test the amount of cholesterol and triglycerides in your blood. It is recommended that everyone at the age of 20 years and older should have their cholesterol measured at least once every 5 years. Blood tests for cholesterol include LDL, HDL and total triglyceride levels. LDL stands for low density lipoprotein also known as the bad cholesterol. HDL means high density lipoprotein or good cholesterol since it keeps cholesterol from building up in the arteries, and protects against heart disease. According to national standards, the desirable levels of total cholesterol should be less than 200mg/dl, less than 100 mg/dl for LDL, and greater than 45 mg/dl for HDL. The normal level of triglyceride is 150 mg/dl. There are several factors that can put patients at risk for developing high cholesterol. These risk factors include poor diet, physical inactivity, obesity, smoking, family history, males 45 years of age or older, and females 55 years of age or older.

Life style change is the initial treatment for hyperlipidemia. It is a three-part program that includes diet, physical activity, and weight management. There are three nutrients in the diet that can increase LDL levels. These nutrients include saturated fat, Trans fat, and cholesterol. Saturated fat is solid at room temperature. It is mostly found in animal foods such as fatty meats, whole milk, ice cream, butter, cheese, palm oil, and coconut oil. Another nutrient that increases LDL level is Trans fat. Cookies, crackers, fried foods, cakes, and donuts are examples of food that contain Trans fat. Skipping saturated and Trans fats in meals and replacing them with polyunsaturated and monounsaturated fat may help lower LDL levels. Polyunsaturated fats are found in foods such soy oil, corn oil, nuts and seeds. Polyunsaturated fats rid the body of newly formed cholesterol and reduce cholesterol deposits. Monounsaturated fats may also help reduce blood cholesterol. Examples of foods that contain monounsaturated fats are olive, canola and peanut oils, and avocados. It is also important to include fruits and vegetables as a part of a cholesterol lowering diet.

Being physically inactive contributes to weight mismanagement which can raise LDL and lower HDL levels. Finding an exercise you enjoy such as brisk walking,

running, swimming, bicycling, or jogging and performing it regularly may help to lower LDL and increase HDL.

Excessive weight tends to increase LDL and triglyceride levels, and also lowers HDL levels. Losing as little as 10 lb may help lower the LDL and triglyceride levels. It may also help raise the HDL level. Some suggestions on how you may lose weight include reducing the amount of what you normally eat and choosing healthy foods. Whole grains, and oatmeal may also help reduce weight and cholesterol levels.

Some people may be able to lower their cholesterol enough with life style changes alone. Some will need to take cholesterol lowering medication in addition to life style changes. There are different classes of medications that are used to treat hyperlipidemia including statins, cholesterol absorption inhibitors, bile acids resins, fibrates, and nicotinic acid. These medications may lower LDL, increase HDL, and/or lower triglycerides.

Statins are typically the first line medications used to treat high LDL level. Medications in the statin family are atorvastatin generic name for Lipitor, simvastatin generic name for Zocor, lovastatin generic name for Mevacor, pravastatin generic name for Pravachol, fluvastatin generic name for Lescol and rosuvastatin generic name for Crestor. Statins lower LDL cholesterol levels more effectively than other medications. They also have the potential to increase HDL and lower triglycerides as added benefit.

Statins lower blood cholesterol level by decreasing the production of cholesterol by the liver. Statins can lower LDL-cholesterol levels by 30–50%. Possible side effect of statins includes headaches, sun light sensitivity, abdominal pain, nausea. Serious reactions may cause damage to the skeletal muscle. Contact your doctor right away if you have symptoms including muscle pain or brown urine.

Patients on simvastatin, atorvastatin, or lovastatin should refrain from grapefruit juice consumption. Grapefruit juice can decrease the metabolism of these medications which may increase the amount of medication that remains in your body, therefore increasing the risk of side effects.

The statins are usually given in a single dose at the evening meal or at bedtime since the body makes more cholesterol at night.

Ezetimibe generic for Zetia is the only medication in a class known as cholesterol absorption inhibitors. Ezetimibe may be used alone or in conjunction with a statin to treat high LDL. This medication works by reducing blood cholesterol by blocking the absorption of cholesterol in the food we eat. Possible side effects of ezetimibe include abdominal pain, diarrhea, back pain, cough, and muscle pain. It is best to take the medication with food to reduce stomach upset.

Bile acid resins work by binding to the cholesterol produced in the body so it can be eliminated. Bile acid medications include cholestyramine generic name for Questran, colestipol generic name for Colestid, and colesevelam generic name for Welchol. These medications are used to treat high LDL. Bile acids lower LDL levels by 10-20 mg/dl. These medications are available as powders or tablets. Bile acids are not absorbed into the body, therefore their long term use is safe. Possible side effects are constipation, heartburn, nausea, bloating, cramping. Colesevelam is better tolerated with less stomach upset and also does not interfere with other medications. This medication is recommended for women with high LDL levels considering pregnancy, because statins can not be used in pregnant women.

Fibrates are the third class of drugs used to treat hyperlipidemia. Fibrates include fenofibrate generic name for Tricor, gemfibrozil generic name for Lopid, clofibrate generic name for Atromid. This class of medication is more effective in treating a very high triglyceride level. It is important to lower triglyceride to normal levels of less than 150 mg/dl. When triglyceride levels are greater than 300mg/dl the patient is at risk for developing pancreatitis. Pancreatitis is a disease of the pancreas in which the pancreas becomes tender and inflamed. Fibrates are also used together with statins to treat high LDL. However, the risk for patient developing myopathy or muscle pain is greater when they are given together. Muscle pain is mostly seen in patients taking gemfibrozil and a statin. Abdominal pain, muscle pain, vomiting, gallstones are possible side effects.

The only medication in the nicotinic acid class is called niacin generic name for Niaspan. Niacin works by increasing HDL level through reducing HDL breakdown. HDL is good cholesterol since it helps reduce the build up of cholesterol in the blood vessels. Niacin has the greatest effect of increasing HDL. HDL levels of less than 40mg/dl increases the risk for developing heart disease. Niacin can also be used in combination with statins. Some of the possible side effects of niacin are flushing, itching, dizziness, stomach upset, gout, and liver toxicity. The flushing and itching can be prevented by taking an aspirin 30 minutes before niacin use. Avoiding alcohol and hot drinks around the time niacin is taken can also help avoid the flushing and itching. It is recommended to take Niacin with food to help decrease stomach upset. Do not to break, crush, or chew the extended release tablets.

Taking your medications correctly is an important part of preventing the complications of high cholesterol such as chest pain, heart attack, heart failure, and stroke. A blood test is used to be sure the medication is having a positive effect. Here are other suggestions that may help you take your cholesterol medications correctly and safely:

- Take medication exactly as directed by your physician.**
- Take medications daily and avoid skipping medication even if you feel better or your cholesterol numbers improve.**
- Report any allergies or serious adverse reactions to physician immediately.**

- **To prevent the potential for drug interactions or drug duplication, check with your physician or pharmacist prior to taking other medications including over the counter medications, supplements, and herbals.**

Treating high cholesterol is within your reach. Start with basic life style changes such as eating properly, being active, and controlling your weight. If medication is necessary take your medications according to the directions and have appropriate lab values checked.

We encourage you to speak with one of our MassMedLine pharmacists to review questions you may have about the information provided, or questions regarding your specific medications. Also, if you have difficulty affording your medications, MassMedLine case managers are available to assist you.

References available upon request

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