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# What High Triglycerides Mean for Your Heart & How to Lower Naturally

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With the growing epidemic of childhood and adult obesity, insulin resistance, and type 2 diabetes, coronary heart disease remains the leading cause of death and disability in the U.S. It's estimated in 2020 study that 25 percent of the U.S population has high triglycerides, a major risk factor for cardiovascular disease.

A 2007 meta-analysis involving a total of 3,582 incident cases of fatal and nonfatal coronary heart disease indicates that there is a significant association between triglyceride values and coronary heart disease risk.

Thankfully, there are natural ways to lower cholesterol and triglyceride levels with diet and lifestyle changes.

## What Are Triglycerides?

Triglycerides are a type of lipid, or fat, in the your blood. Any calories that aren't needed when you eat are converted into triglycerides and stored in your fat cells. Then your hormones release triglycerides for energy in between meals.

This cycle only becomes problematic when you eat more calories than you burn, which leads to high triglycerides, also called hypertriglyceridemia.

The National Cholesterol Education Program labels triglyceride levels in the following way:

- Normal — less than 150 milligrams per deciliter
- Borderline high — 150–199 milligrams per deciliter
- High — 200–499 milligrams per deciliter
- Very high — 500 milligrams per deciliter or higher

Triglycerides and cholesterol are different types of lipids that circulate in the blood. When both are high, it's called hyperlipidemia. While triglycerides store calories that aren't used and provide the body with energy, cholesterol is used to build cells and produce certain hormones.

High-density lipoprotein (HDL) helps remove fat from the body by binding with it in the bloodstream and carrying it back to the liver for disposal. Low-density lipoprotein (LDL) carries mostly fats and only a small amount of protein from the liver to other parts of the body.

Although elevated LDL cholesterol is well-established as a major predictor of coronary heart disease, evidence suggests that an elevated triglyceride level is also an independent risk factor.

Until recently, researchers believed that high triglyceride levels were not as significant as cholesterol at predicting plaque buildup and heart disease, but that perspective has changed. Most experts now consider triglycerides a third important risk factor for plaque buildup in the arteries, along with levels of “good” HDL cholesterol and “bad” LDL cholesterol.

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In fact, in studies where LDL cholesterol levels were significantly reduced with the use of statin medications, many patients still had elevated triglyceride levels, putting them at continued risk of developing cardiovascular disease. This proves that in addition to the critical role that LDL cholesterol plays in the buildup of plaque inside the arteries, which is called atherosclerosis, high triglycerides also play a significant role.

## Causes

High triglycerides may be caused by the following conditions:

- obesity
- eating more calories than are being burned/used for energy
- lack of exercise/sedentary lifestyle

- type 2 diabetes
- hypothyroidism (underactive thyroid)
- kidney disease
- excessive alcohol consumption
- smoking
- medication side effects

Research published in the *Canadian Journal of Cardiology* reviewed data on the associations of triglycerides, HDL and LDL cholesterol with coronary artery disease risk factors. Researchers found that among men or women with low HDL cholesterol and high triglyceride levels, smoking, diabetes, sedentariness, hypertension and obesity were much more prevalent than among those at low risk with high HDL cholesterol and low triglyceride levels.

Hypertriglyceridemia is often observed in patients with type 2 diabetes because insulin plays an important role in the regulation of lipid homeostasis. When the body is resistant to insulin, the organs that are sensitive to insulin regulation — like the adipose tissue, liver and skeletal muscle — are unable to function properly.

# SIGNS & CAUSES OF HIGH TRIGLYCERIDES

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<b>BORDERLINE HIGH</b>	150-199 mg/dl
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<b>VERY HIGH</b>	500 mg/dl

## CAUSES



obesity



eating more calories than are being burned/used for energy



lack of exercise/sedentary lifestyle





## Risk Factors

Research shows that triglyceride levels help predict cardiovascular disease, a principal cause of morbidity and mortality in Western society. People with high triglycerides may be at significant risk for cardiovascular disease even if their LDL cholesterol levels are at goal.

A 2010 study conducted at Harvard Medical School evaluated the relative contributions of triglycerides and HDL cholesterol in the risk of coronary heart disease after LDL cholesterol levels were reduced. The study, involving 170 cases and 175 controls, suggests that high triglycerides and low HDL cholesterol levels were associated with coronary heart disease even in patients with lower LDL cholesterol levels. The odds of coronary heart disease increased by approximately 20 percent per 23 milligrams per deciliter increase in triglycerides.

Having high triglycerides also makes you more likely to develop type 2 diabetes. It's not that high triglycerides actually cause diabetes, but it shows that the body isn't turning food into energy properly.

Normally, the body makes insulin, which escorts glucose into the cells, where it's used for energy. The insulin allows the body to use triglycerides for energy, but when someone is insulin-resistant, the cells won't let insulin or glucose in, thereby causing both glucose and triglycerides to build up in the blood.

A 2011 study published in *Oman Medical Journal* showed that there is a strong relationship between serum triglyceride elevation and increased levels of high blood glucose, but high cholesterol did not have the same effect.

Samples were collected from 438 males and females, both non-diabetic and non-insulin dependent type 2 diabetic patients. The patients' serum glucose, cholesterol and triglyceride levels were measured simultaneously.

The results showed that the elevation in triglycerides, but not cholesterol, has the same effects of both triglyceride and cholesterol elevation on increasing levels of high glucose in blood.

Hypertriglyceridemia plays an increasingly important role in the current obesity epidemic as well. Research shows that triglyceride levels correlate more closely with waist circumference, and weight loss significantly improves hypertriglyceridemia.

In a trial study that involved randomized individuals with diabetes, those who underwent intensive lifestyle intervention lost 8.6 percent of their initial weight (compared with 0.7 percent in the control group) and lowered their triglyceride levels by more than twice as much as the control group, despite receiving fewer lipid-lowering medications. The study demonstrates that weight loss can achieve major metabolic improvements, and there is indeed a correlation between weight loss and decreased triglycerides.

# How to Lower Triglycerides Naturally

## 1. Cut Back on Calories

Because of the relationship between increased weight circumference and high triglycerides, cutting back on calories and losing weight can have a big impact on triglyceride levels. Stick to cholesterol-lowering foods, such as vegetables, nuts, seeds, garlic and sweet potatoes.

In a study conducted at the Metabolic Research Centre's School of Medicine and Pharmacology at the University of Western Australia, compared with weight maintenance, weight loss significantly decreased body weight, plasma insulin, triglycerides, total cholesterol and LDL cholesterol levels.

To lose weight fast, begin by avoiding the consumption of empty calories throughout the day. This means cutting back on sweetened beverages, refined carbohydrates and baked goods.



## 2. Avoid Sugary Foods

A study published in the *American Journal of Physiology* found that when fructose was given to rats, there was a 20 percent increase in triglyceride production. The results suggest that dietary fructose not only increases triglyceride production, but also impairs triglyceride removal.

Fructose is a natural simple sugar found in fruits, vegetables and honey. Instead of consuming too many of these high-fructose foods, focus on bringing complex carbs and healthy fats into your diet. Also, always avoid high fructose corn syrup, one of the worst ingredients out there.

## 3. Stick to Complex Carbohydrates

A 2000 study conducted at the Rogosin Institute in New York found that a very low-fat, high-carbohydrate diet enriched in simple sugars increased the fraction of newly synthesized fatty acids, along with an increase in the concentration of plasma triglycerides.

Complex carbohydrates that are high in soluble fiber make you feel full for a longer period of time, helping you lose weight and lower triglycerides naturally. Stick to sprouted seeds and nuts, quinoa, and other high-fiber foods.

## 4. Choose Healthy Fats

Foods rich in omega-3 fatty acids reduce serum triglyceride levels by decreasing free fatty acid delivery to the liver and activity of triglyceride-synthesizing enzymes. Eat omega-3 foods, such as wild salmon and mackerel, chia seeds, flaxseeds, grass-fed beef and bison, and free-range eggs.

The keto diet, high in healthy fats, can actually reduce the risk of heart disease markers, including high cholesterol and triglycerides. Learn about what high-cholesterol foods to avoid versus eat.

## 5. Reduce Alcohol

According to research published in *Current Opinion in Lipidology*, high alcohol intake can be harmful because it's associated with elevated plasma triglycerides, along with with cardiovascular disease, alcoholic fatty liver disease and the development of pancreatitis.

Although light to moderate alcohol consumption may be associated with decreased plasma triglycerides, patients who already have high triglyceride levels benefit from reducing or stopping alcohol consumption altogether.



## 6. Exercise Regularly

A study published in *Medicine and Science in Exercise and Sports* evaluated 11 healthy women who underwent a single workout that involved a brisk walk at 60 percent of peak oxygen consumption for about two hours. The results showed that triglyceride concentration was approximately 30 percent lower after the exercise trial compared with the control trial that involved no exercise.

These benefits of exercise can result from at least one hour of walking, running, weight training, yoga and any other type of movement you like.

# HOW TO LOWER TRIGLYCERIDES

## NATURALLY



### CUT BACK ON CALORIES

Because of the relationship between increased weight circumference and high triglycerides, cutting back on calories and losing weight can have a big impact on triglyceride levels

### AVOID SUGARY FOODS

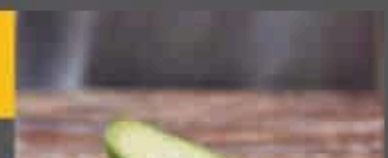
Dietary fructose not only increases triglyceride production, but also impairs triglyceride removal



### STICK TO COMPLEX CARBOHYDRATES

Complex carbohydrates that are high in soluble fiber make you feel full for a longer period of time, helping you lose weight and lower triglycerides naturally

### CHOOSE HEALTHY FATS



Foods rich in omega-3 fatty acids reduce serum triglyceride levels by decreasing free fatty acid delivery to the liver and decreasing activity of triglyceride-synthesizing enzymes



## REDUCE ALCOHOL

High alcohol intake can be harmful because it's associated with elevated plasma triglycerides, along with with cardiovascular disease, alcoholic fatty liver disease and the development of pancreatitis

## EXERCISE REGULARLY

Exercise has been shown to lower triglyceride concentration



## FISH OIL

Fish oil effectively suppresses adipose tissue inflammation and controls metabolic pathways in a tissue-specific manner, regulating nutrient traffic and reducing plasma triglycerides

## NIACIN

Niacin significantly reduces LDL cholesterol, triglyceride and lipoprotein levels, while increasing HDL cholesterol levels



## LIPOIC ACID





Researchers found that lipoic acid supplementation actually increased the rate of disappearance of triglycerides in the bloodstream after eating

## GARLIC

A meta-analysis conducted at the University of Oxford found that dried garlic powder preparations significantly lowered serum triglyceride levels when compared to placebo



## LAVENDER OIL

Lavender oil exerts antioxidant and hypolipidemic effects on rats and may serve as a beneficial form of therapy for hyperlipidemic patients

## HOLY BASIL

Holy basil extract has lipid-lowering and antioxidant effects that protect the heart against hypercholesterolemia



## LEMONGRASS ESSENTIAL OIL

Animal studies suggest that lemongrass can serve as a natural and safe form of alternative therapy in combination with diet and lifestyle changes



## 7. Fish Oil

According to researchers at the Cardiovascular Health Research Center in South Dakota, long-chain omega-3 fatty acids are effective for reducing plasma triglyceride levels. At the pharmaceutical dose of 3.4 grams per day, omega-3s reduce triglycerides by about 25 percent to 50 percent after one month of treatment, resulting primarily from the decline in very low density lipoprotein (VLDL ) production and secondarily from the increase in VLDL clearance.

Fish oil effectively suppresses adipose tissue inflammation and controls metabolic pathways in a tissue-specific manner, regulating nutrient traffic and reducing plasma triglycerides.

## 8. Niacin

Research shows that niacin (vitamin B3) consumption can lower triglyceride levels by 30 percent to 50 percent, raise HDL cholesterol levels by 20 percent to 30 percent and lower LDL cholesterol by 5 percent to 25 percent.

According to research published in *Archives of Internal Medicine*, therapy with niacin is unique in that it improves all lipoprotein abnormalities. It significantly reduces LDL cholesterol, triglyceride and lipoprotein levels, while increasing HDL cholesterol levels.

Researchers found that niacin-induced changes in serum lipid levels produce significant improvements in both coronary artery disease and clinical outcomes. Niacin use does come with a risk of side effects, such as elevated liver enzyme levels, but low-dose niacin combined with a statin has been associated with a decrease in cardiovascular events.

## 9. Lipoic Acid

Researchers found that lipoic acid supplementation actually increased the rate of disappearance of triglycerides in the bloodstream after eating.

A 2009 study published in *Archives of Biochemistry and Biophysics* tested the triglyceride levels of diabetic rats that were fed a diet containing lipoic acid for five weeks.

Researchers found that the livers from lipoic acid-treated rats exhibited elevated glycogen content, which suggests that dietary carbohydrates were stored as glycogen (glucose for animals) instead of becoming fatty acids, thereby lowering triglyceride levels.

## 10. Garlic

There are a number of garlic benefits, including its ability to help prevent heart disease.

A meta-analysis conducted at the University of Oxford found that dried garlic powder preparations significantly lowered serum triglyceride levels when compared to placebo. This analysis included 17 trials and 952 subjects.

Garlic treatment not only lowered triglyceride levels, but it also reduced total cholesterol levels.

Another study published in the *Journal of Nutrition* found that when rats received raw garlic orally or as an injection, there was a 38 percent reduction in triglyceride levels.

## Conventional Treatment

The two most common conventional treatments for high triglycerides are statins and fibrates, which both come with their own side effects.

### 1. Statins

These prescription drugs, like Lipitor or Zocor, are used by people who also have low HDL cholesterol and high LDL cholesterol. A study published in the *American Journal of Cardiology* found that statins are effective in treating high triglycerides but only in patients with hypertriglyceridemia. Data indicates that the more statins are effective in lowering LDL cholesterol levels, the more effective they will be in lowering triglycerides.

One of the most common side effects of statin use is muscle pain, and occasionally patients suffer from liver damage, increased blood sugar levels and neurological issues, such as memory loss and confusion.

### 2. Fibrates

Fibrates are used to lower triglyceride levels. Studies show that in patients with cardiovascular disease, modestly elevated triglyceride levels and low HDL cholesterol levels, fibrates have been shown to decrease the risk of cardiovascular events.

The side effects of fibrates include nausea, upset stomach and diarrhea. Fibrate use can also irritate the liver and cause gallstones when used for several years.

Sometimes fibrates and statins are used together in combination therapy, but this raises safety concerns and should be used with caution.

# Final Thoughts

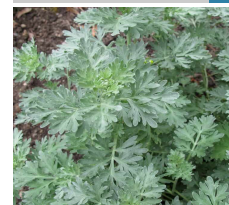
- Research shows that triglyceride levels help predict cardiovascular disease, a principal cause of morbidity and mortality in Western society.
- Triglycerides are a type of fat in your blood. Any calories that aren't needed when you eat are converted into triglycerides and stored in your fat cells. Then your hormones release triglycerides for energy in between meals. When you eat more calories than you burn, this leads to high triglycerides.
- Some major causes of high triglycerides include obesity, lack of exercise, eating more calories than you burn, type 2 diabetes, kidney disease, excessive alcohol consumption and smoking.
- The best way to prevent or reduce high triglyceride levels is to change your diet and lifestyle. Cutting back on calories, sticking to complex carbohydrates instead of refined carbs, eating healthy fats with omega-3 fatty acids and reducing your sugar intake are the best ways to naturally reduce triglyceride levels. Exercise is also important and helps decrease triglyceride and LDL cholesterol levels.
- Use supplements like fish oil, garlic, niacin and lipoic acid in combination with diet and lifestyle changes to reduce high triglycerides. Essential oils, such as lavender, holy basil and lemongrass, can also be used to help treat hypertriglyceridemia.



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