

Strategies to Lower Your Triglycerides And Increase Your HDL Cholesterol

Triglycerides are blood fats (lipids) that appear to promote clogged arteries indirectly. Triglycerides do not accumulate in the arteries like bad cholesterol (LDL) does. Instead, high triglyceride levels can cause LDL cholesterol particles to convert to a more dangerous form that damages the arteries and speeds the build-up of blockage. High triglyceride levels can also interfere with the formation of good cholesterol (HDL) particles.

Some of the triglycerides in your blood come directly from fat in foods. Others are manufactured by your body from extra calories and carbohydrates (sweets) that you eat. Your body can also release triglycerides from fat already stored in your body.

If your fasting triglycerides are above 250 mg/dL, diabetes screening is recommended. If your triglycerides are very high (over 800 mg/dL) a serious condition called pancreatitis can develop. High triglycerides in women is worse than for men. Lowering triglycerides is easier than increasing HDL cholesterol.

High triglyceride levels often accompany:

- low HDL cholesterol levels (less than 45mg/dL for men, 55 mg/dL for women)
- lack of exercise
- cigarette smoking
- diets high in fats, starches and sugars
- excessive alcohol use
- extra body weight, especially around the waist and abdomen
- some medications
- thyroid disease
- female hormones
- genetic patterns (may determine how well your blood fats respond to changes)

Your Level	Desirable:	Borderline High:	High:	Very High:
_____	Below 150 mg/dL	150-199	200-499	500 or greater

HDL Cholesterol

HDL (high density lipoprotein) cholesterol carries excess cholesterol **away** from the cells, back to the liver for removal or recycling. HDL cholesterol is called *good* or *healthy* cholesterol, so higher numbers are desirable. It is often determined by genetics. Among women, HDL cholesterol levels are better predictors of risk for developing heart disease than the total cholesterol level.

Your Level	Ideal:	High (Desirable):	Low (Undesirable):
_____	For all: 60 mg/dL or greater	Men: 45 mg/dL or above Women: 55 mg/dL or above	Men: 40 mg/dL or below Women: 50 mg/dL or below

Blood Sugar

Your Level:	Desirable:	Pre-Diabetes:	Diabetes:	2 hrs after eating
_____	Below 100 mg/dL	100-125 mg/dL	126 or greater	Below 140 mg/dL

1. Be more active.

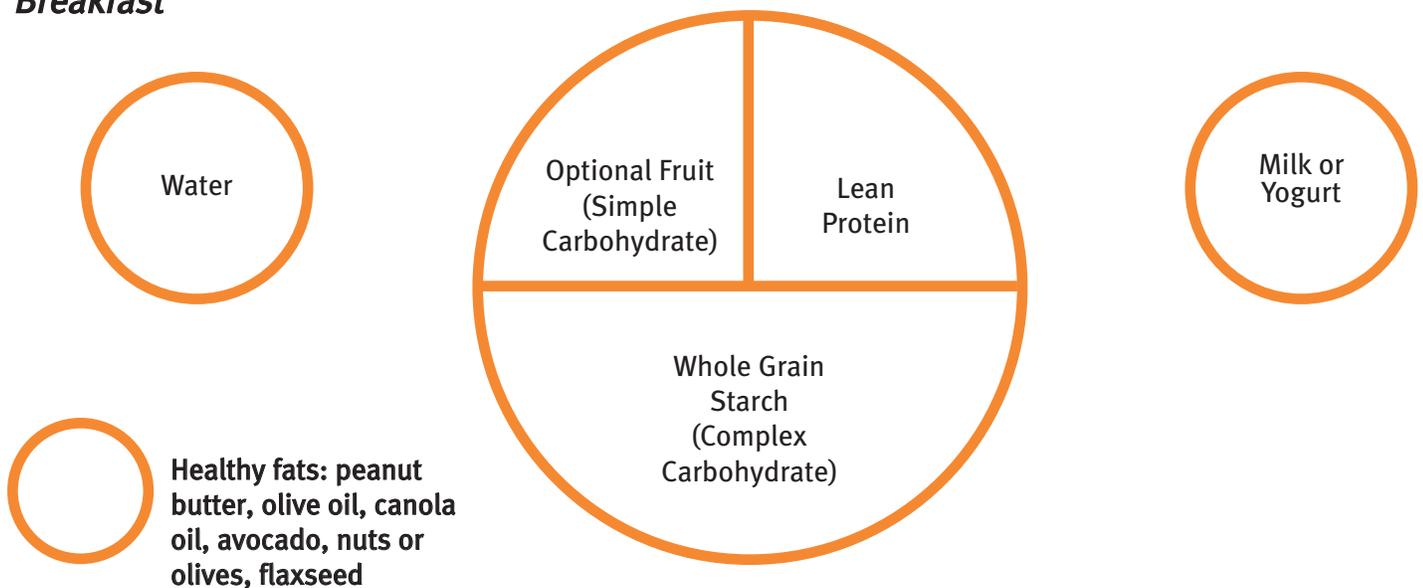
Aim to be physically active, 30 minutes most days. Being active leads to more HDL cholesterol production and a leaner body which can improve your triglyceride levels. The fat stored in your body serves as a source of triglycerides and causes the body to break down HDL faster than usual. The less body fat you have, the harder it is for your body to release triglycerides into the blood. Even losing ten pounds will reduce your triglycerides.

2. Eat the “Plate Method” way.

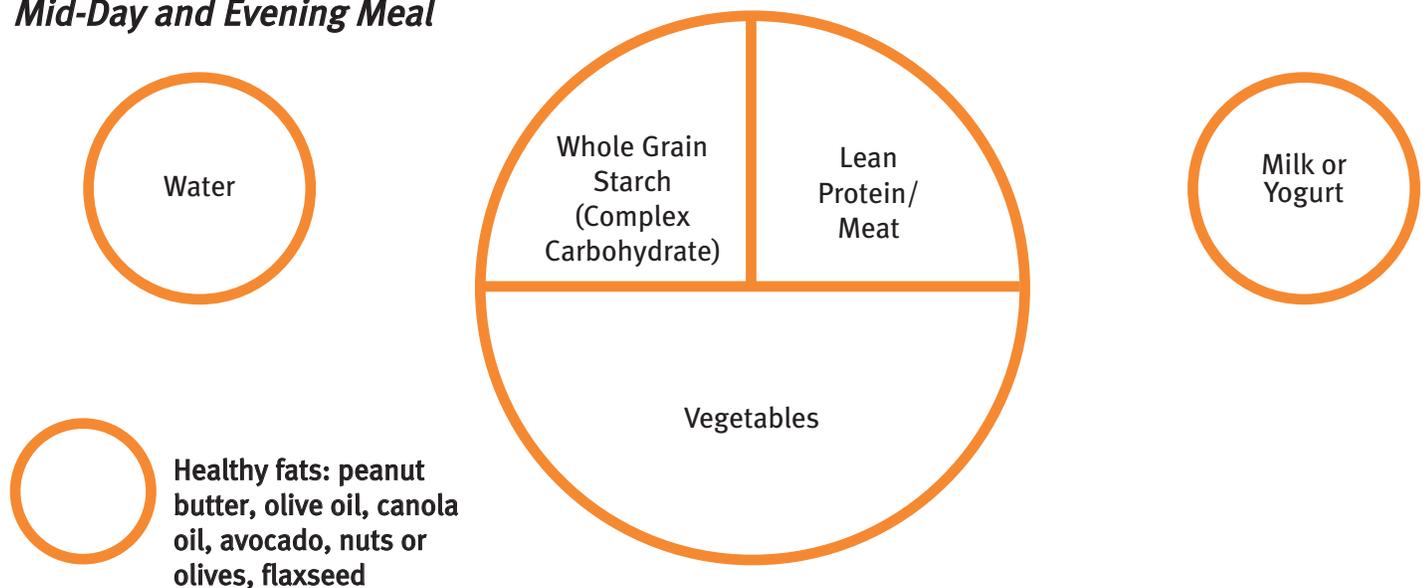
The Plate Method of Meal Planning

The *Plate Method of Meal Planning* is an easy and helpful way to plan healthy meals for everyone and particularly for those who wish to gain better control of their **triglyceride**, and **HDL cholesterol levels**, or **body weight**.

Breakfast



Mid-Day and Evening Meal



3. Eat smaller meals and more frequently.

Distribute your meals and the amount of food you eat at each meal evenly. Eating large amounts of food creates more triglycerides which will remain elevated for longer than if smaller meals are consumed. Try to eat three smaller meals and two-three small snacks throughout the day.

4. Eat fewer fats.

All fats are high in calories and eating too much fat makes it hard to lose weight. Some fats are healthier than others.

5. Eat fewer unhealthy fats.

Saturated fats and trans-fats can raise your **cholesterol** and affect your **triglyceride** and **HDL cholesterol** levels negatively.

- Avoid saturated fats found in fatty meats, lard, bacon drippings, full-fat dairy products (butter, cheese, cream, milk), coconut oil, palm oil, and vegetable shortening.
 - Avoid trans-fats found in bakery goods, cookies, crackers, fast foods, deep-fried foods, partially hydrogenated vegetable oils, margarine (especially regular stick varieties), and commercially prepared fried foods.
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6. Eat more monounsaturated fats (MUFA), but sparingly.

Monounsaturated fats need to be your primary fat source to lower your **triglycerides** and improve your **HDL cholesterol**. Eating these fats reduces your chance of developing insulin resistance (pre-diabetes) or Type 2 diabetes also.

- An appropriate amount to eat is about 15-25 grams per day, depending on your calorie needs. Replace saturated fats with monounsaturated fats whenever possible. Choose one serving 3-5 times daily. Be aware of your portions since these foods have lots of calories in very small portions.
- 1 serving = 5 grams of fat (50 calories)
 - 1 tsp. MUFA-rich oil (canola, olive, peanut oil)
 - 1/8 medium avocado
 - 5-10 olives
 - 2 tsp. peanut butter
 - 6-10 nuts

Divide fat grams in a food by 5 to determine the number of teaspoons of fat in a serving.

7. Eat fewer polyunsaturated Fats (PUFA). These fats may decrease your good **HDL cholesterol** so use sparingly. Found in corn oil, soy oil, sunflower oil, salad dressings, and tub margarine.

8. Eat fish and seafood which contain omega-3 fats. Omega-3 fats are a special polyunsaturated fat that lower your **triglycerides** and increase your **HDL cholesterol**.

- Choose to eat 2-3 servings for a total of 12 oz of both lean and fatty varieties of fish weekly.
- Omega-3 fatty acids are found in fatty fish in the greatest quantity.

Fish:	Albacore tuna	Lake Trout	Seafood:	Lobster
	Anchovies	Mackerel		Mussels
	Herring	Salmon		Oysters
		Sardines		Scallops
				Shrimp

- All fish contain some omega-3 fatty acids. Some fish are contaminated with mercury and/or pollutants.
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9. Take fish oil supplements regularly.

The American Heart Association recommends taking 2000-4000 mg of omega-3 fats (the sum of omega-3 fats or DHA plus EPA) from supplements daily if you have high triglycerides.

- A 1000 mg fish oil gel cap generally contains only 300 mg of omega-3 fats. So seven gel caps would provide 2100 mg of omega-3 fat. (300 mg x 7 gel caps = 2100 mg). Prescription strength fish oil makes it possible to take fewer pills.
- Fish oil supplements have a gas side affect (burping/flatulence) so it helps to take them at bed time. You will sleep through the side affects. Start with one gelcap and see how you tolerate it before you start to add more. Then add them slowly, they can all be taken at once, once you tolerate them.
- Mercury-free fish oil supplements can be purchased from a well-known vitamin or drug supplier. Your registered dietitian can help you find vegan, liquid or powdered omega 3 fat supplements.
- Fish oil supplements can not be used if you have a fish allergy or are on a blood thinner such as Coumadin™ or Warfarin™. Since fish oil acts as a blood thinner, you must report taking them to your primary care provider. Stop taking fish oil a week before any surgery.

10. Eat foods rich in alpha-linolenic acid regularly.

- Use oils: canola, flaxseed, soy, walnut, and ground flaxseed meal or walnuts more often. Alpha- linolenic acid is converted to the omega 3 fats DHA and EPA by the body.
- Alpha-linolenic acid may be associated with increased risk of prostate cancer in men and should not be used by women trying to conceive, while breastfeeding or with breast cancer.
- Flaxseed: Use ground flaxseed within the expiration date on the package.
- Aim for 2 tbsp. per day by gradually increasing your use.
- Add flaxseed to drinking water and to cereals, soups, salads, casseroles, yogurt, etc.
- Try substituting in baking:
 - 3 tbsp. ground flaxseed for 1 tbsp. fat, or
 - 1 tbsp. ground flaxseed + 3 tbsp. water for 1 egg
- Store unused, ground flaxseed in a sealed container in the freezer. Flaxseed for your daily use can be stored where you will remember to use it.

11. Eat fewer concentrated sweets and sugar.

Your body converts some of the sugar (simple carbohydrate) you eat into **triglycerides**. Beware of foods and beverages high in sugar and refined starch. Avoid products containing high fructose corn syrup as one of the first listed ingredients.

Eat fewer of the following foods:

Sweets: Bars	Sweet Condiments:	Sugary Beverages:	100% fruit juices in servings greater than 4-8 oz. per day.
Cake	Honey		Soda pop
Candy	Jam		Juice drinks
Cookies	Jelly		Fruit drinks
Donuts	Sugars		Fruit punch
Frozen desserts:	Maple syrup		Fruitades
ice cream	Other syrups		Soft drinks made with sugar/high fructose corn syrup
sweetened yogurt			including sports drinks
milk			Kool-Aid®
Muffins			Lemonade
Pastries			HiC®
Pie			
Pudding			
Sweetened cereal			

Use these drinks more:

- Water
- Unsweetened tea
- Diet soda
- Beverages sweetened with Nutrasweet®, Splenda®, and other artificial sweeteners

Be careful when you choose reduced-fat or fat-free products since they may have more sugar and sodium than the regular variety.

12. Eat more fiber in your carbohydrates.

Fiber helps your body retain fewer carbohydrates from the foods that you eat. Fiber is a plant substance that can't be broken down by your body so it passes through, mostly undigested. Fiber prevents the carbohydrate in the fiber from being absorbed. You find fiber in legumes (dried beans and peas), vegetables and fruits, and in whole grain starches (complex carbohydrates):

Fiber containing foods:

barley	wheat bran	legumes
brown rice	whole wheat breads	fruits
oatmeal	whole grain breads and whole grain cereals	vegetables
oat bran cereals	whole wheat macaroni	
oat products	whole wheat pasta	
psyllium (Metamucil?)	quinoa	

Consume at least 5-9 servings of fruits (1-2 cups) and vegetables (1.5 to 2.5 cups) daily.

- Eat more legumes and oat products.
- Consume 3-5 servings of whole grain foods daily and drink 8-10 cups (8 oz. each) of fluid daily.
- Aim for 20-30 grams of fiber daily.
- If your stools float you are eating adequate fiber.
- Fruit is one of the few primarily sugar-containing foods that contain fiber. Drinking fruit juice provides no fiber.

13. Limit your alcohol consumption or don't drink at all.

Moderate consumption of alcohol may decrease your risk for heart disease and increase **HDL cholesterol**, but avoid using too much because of its toxicity. Large amounts taken regularly and frequently can increase **triglycerides** and blood pressure.

One serving for women daily and two servings for men daily may raise **HDL cholesterol** slightly and is generally considered safe. However, beer, wine or mixed drinks contain calories, may stimulate your appetite and lead to weight gain. Use of alcohol may be related to increased risk of developing alcoholism, cancer, cirrhosis and other diseases.

1 serving =	12 oz. beer
	4 oz. wine
	1 oz. liquor

12. Strive to maintain a healthy body weight.

Aim for a waist measurement that is less than 35 inches for women and 40 inches for men. For Asian women less than 31 inches and 35 inches for men.

13. Do things that can increase your HDL cholesterol.

- Be active
- Stop smoking. Even 6 cigarettes daily can lower HDL cholesterol. Quitting can increase your HDL by 5 points.
- Eat more healthy fats and fewer saturated and trans fats.
- Eat enough vitamin C rich produce such as citrus fruits, kiwi fruit, berries, tomatoes, broccoli, cauliflower, peppers, and green vegetables.
- Limit eating and drinking too many sweets.
- Limit drinking too much alcohol.
- Maintain a healthy body weight.
- Eat fish and seafood and/or take fish oil supplements.

14. Eat as well as you can as often as you can.