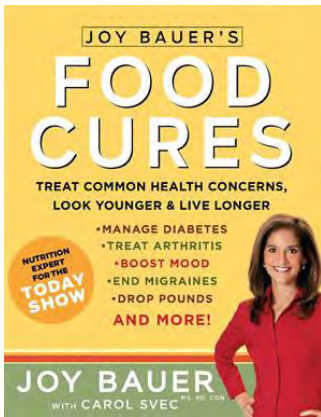


# Foods can lower your cholesterol

In her book, 'Food Cures,' Joy Bauer tells what you can eat to be healthier

By Joy Bauer



Updated: 7:53 a.m. PT April 9, 2007

I often tell my clients to take nutritional changes at a pace that feels comfortable to them. That's not good enough when it comes to cardiovascular disease. The consequences of doing too little are severe — heart attack, stroke, or even worse. Sadly, not everyone gets a second chance. So *please* don't wait until after the next vacation, or your daughter's wedding, or that anniversary dinner to start. My advice is to start immediately and go for broke! Change your diet, change your habits, change your lifestyle.

## Cholesterol 101

Cholesterol is a natural fat-like substance found in all animal tissue — humans included—because it is part of all cell membranes. Cholesterol is also part of the myelin sheath that surrounds and protects nerves, and it is used to make vitamin D, bile, and some hormones. Our bodies make all the cholesterol we need for good health, so extra cholesterol coming from a poor diet provides NO benefit (in fact, quite the contrary — it clogs our arteries).

Cholesterol comes in two main varieties: low-density lipoprotein (LDL) cholesterol (commonly called “bad cholesterol” — remember L for LOUSY), and high-density lipoprotein (HDL) cholesterol (“good cholesterol” — remember H for HERO). LDL cholesterol is one of the components of vessel-clogging plaque. Over time, plaque can incorporate calcium and other substances that make the plaque hard and brittle. If the plaque deposits grow large enough, they can block a blood vessel. In addition, the brittle plaque can break off, travel through the blood stream, and form a clot anywhere in the body.

### ***LDL-Cholesterol***

The higher your LDL cholesterol, the greater your risk of developing life-threatening plaque. So, you want your *low*-density *low*. According to the National Institutes of Health (NIH), the optimal level of LDL cholesterol is below 100 mg/dL. High LDL cholesterol is defined as 160 mg/dL and higher — but certainly anything above 130 is worth treating.

### ***HDL-Cholesterol***

HDL cholesterol, on the other hand, is like nature's plaque vacuum cleaner — it picks up the vessel-clogging cholesterol and carries it away to the liver, where it is disposed of in the form of bile. The higher your HDL

levels, the cleaner your blood vessels will be. So, you want your *high-density lipoprotein*. According to the NIH, people with HDL of 60 mg/dL or higher have a lower risk of heart disease ... whereas HDL below 40 mg/dL is considered too low.

### ***Cholesterol Ratio***

Because HDL is so important to the health of blood vessels, some physicians prefer to talk about the cholesterol ratio — your total cholesterol divided by your HDL cholesterol. For example, if your total cholesterol number is 250 and your HDL is 50, your ratio is 250/50 or 5. A ratio of 3.5 is considered optimal, and people are urged to aim for a ratio of 5 or less.

High cholesterol can be caused by several factors, some you can change, and some you can't. Heredity can play a big part. Some people can have a perfect heart-healthy lifestyle, and still have skyrocketing cholesterol because their bodies naturally make too much of it — our bodies' production of cholesterol is independent from what we eat. Also, LDL cholesterol increases naturally with age, so even if you put up all-star numbers when you were younger, each passing year has made you that much more likely to have problems.

High LDL cholesterol (the "lousy" type) leads to atherosclerosis ...which causes narrowing of the blood vessels...which means your heart has to pump that much harder to squeeze blood through them...which means increased blood pressure and other life threatening concerns. You can improve your cholesterol profile by reducing body weight (if you are overweight), increasing physical activity, and following my cholesterol-busting nutrition program.

### **Lowering cholesterol through Diet!**

Right off the bat, I tell you this: If you are overweight, focus on losing weight. Research has shown that losing just 10 pounds can reduce LDL cholesterol by 5 to 8 percent. Become more physically active. Even moderate exercise can help improve your cholesterol, as well as triglycerides, and blood pressure.

### ***Specific foods to limit or avoid:***

The top dietary recommendations for lowering cholesterol are to eliminate or at least drastically limit the foods you eat that contain saturated fats, trans fats, dietary cholesterol, and refined carbohydrates.

- Saturated fats: They are found in animal-based foods, including meats, butter, whole-milk dairy products (including yogurt, cheese, and ice cream), and poultry skin. They are also found in some high-fat plant foods, including palm oil. The Nurses' Health Study, which included more than 80,000 participants, showed that saturated fats increase the risk of coronary artery disease. Numerous studies have shown that by replacing saturated fat with olive oil or nuts (monounsaturated fat)... you can reduce LDL-cholesterol by significant amounts.
- Trans fats: They were developed in a laboratory to improve the shelf life of processed foods —and they do. But calorie for calorie, trans fats are even more dangerous than the saturated fats. Most stick margarines contain trans fats, and trans fats are found in many packaged baked goods, potato chips, snack foods, fried foods, and fast food that use or create "hydrogenated oils". (All food labels must now

list the amount of trans fats, right after the amount of saturated fats – good news for consumers.) By substituting olive oil or vegetable oil for trans fats in just 2 percent of your daily calories, you can reduce your risk of heart disease by 53 percent. In a 2000 calorie-a-day diet, that's about *40 calories*. Think of it this way — an average serving of French fries contains about 5 grams of trans fats, or about 45 calories worth of evil trans fats, and a daily serving would be enough to *double* your risk of heart disease. There is no safe amount of trans fats, so try to keep them as far from your plate as possible.

- Cholesterol-rich foods: Years ago, doctors used to recommend that people with heart disease avoid all high-cholesterol foods. But dietary cholesterol does not harm health as much as saturated fats and trans fats do. Research into the effects of dietary cholesterol have been mixed, which is not surprising — different people have different susceptibilities. Still, if you want to take a firm hand to reduce your risk factors, you may want to consider cutting down on all high-cholesterol foods, including egg yolks, shellfish, liver, and other organ meats like sweetbreads and foie gras.

### ***Good foods to choose:***

- Soluble fiber: This may help reduce cholesterol by grabbing onto cholesterol and escorting it through your digestive system and out of your body. It also may reduce the intestinal absorption of cholesterol as well. Research has shown that eating an additional 5 to 10 grams of soluble fiber a day can reduce LDL cholesterol by 3 to 5 percent. If you eat a few foods rich in soluble fiber every day, you'll get *at least* 5 grams. It is a small improvement, but every percentage point counts! Some of the best soluble fiber rich foods include; oatmeal, barley, lentils, Brussels sprouts, peas, beans (kidney, lima, black, navy, pinto), apple, blackberries, pears, raisins, oranges, grapefruit, dates, figs, prunes, apricots, broccoli, and sweet potato.
- Omega-3 fats and monounsaturated fats: There was a time when heart researchers slapped the same label — “bad” — on every kind of fat. Now, we know that trans fats and saturated fats are amazingly dangerous for cardiovascular health, but omega-3 fats and monounsaturated fats are actually good for your heart.

Heart-healthy fish oils are especially rich in omega-3 fatty acids. In multiple studies over the past 15 years, people who ate diets high in omega-3s had 30 to 40 percent reductions in heart disease, and fewer cases of sudden death from arrhythmia. Although we don't yet know why fish oil works so well, there are several possibilities. Omega-3s seem to reduce inflammation, reduce high blood pressure, decrease triglycerides, help to make blood thinner and less sticky so it is less likely to clot ... PLUS raise HDL cholesterol! So omega-3s affect nearly every risk factor for heart disease. I recommend eating at least three servings (4-ounce portions) of one of the omega-3-rich fish every week — fish like wild salmon, sardines, anchovies and mackerel (not king). If you cannot manage to eat that much fatty fish, incorporate omega 3 fortified eggs and additional plant based sources like walnuts, soybeans and ground flax. Also, consider taking fish oil capsules.

Scientists discovered the benefits of monounsaturated fats, mainly found in olive oil by observing

Mediterranean populations. They use olive oil more than any other form of fat and typically have low rates of coronary artery disease. Research shows it doesn't help to just *add* monounsaturated fats to your diet — you need to replace some of the unhealthy fats that are already in your diet (all those saturated and trans fats mentioned earlier) with better choices. There is evidence that substituting olive oil for saturated fat and low-quality refined carbohydrates can lower LDL-cholesterol and increase HDL-Cholesterol.

Best foods for monounsaturated fats include: Olive oil and olives, canola oil, avocado, macadamia nuts, hazelnuts, pecans, almonds, peanuts, cashews, pistachio nuts and peanut butter.

- Plant sterols or stanols: These are natural substances found in small amounts in the cell membrane of plants, including fruits, vegetables, legumes, nuts, and seeds. Sterols are found in relatively high amounts in pistachio nuts, sunflower seeds, sesame seeds, and wheat germ. In terms of their effects in the human body, plant sterols and stanols are virtually the same.

Sterols and stanols have a structure similar to cholesterol, and they compete with cholesterol for access to receptors in the small intestines. Imagine 15 people all hoping to get a ride in their friend's Volkswagen Beetle — not everyone is going to be riding in the car. Sterols/stanols compete with cholesterol, effectively blocking its access. Research has shown that sterols and stanols have been shown to cut the amount of cholesterol absorbed by the small intestines by about 50 percent, and to reduce LDL cholesterol levels by between 5 and 14 percent.

You can reap these cardiovascular benefits with just 2 grams of sterol/stanol per day, though you can't get that much eating fruits and vegetables alone. Sterols and stanols have been added to certain heart-healthy spreads that taste and cook just like margarine, including *Take Control* and *Benecol* spreads. These spreads have been found to be safe, with very few side effects (although some people complained of upset stomach). That said they're only for those with cholesterol problems, who should consume no more than the amounts recommended: 2 to 3 tablespoons per day (each tablespoon provides one gram of sterol/stanol). You can use it on whole-grain bread, melt it on heart-healthy vegetables, or use it in cooking. I recommend trying the *light* versions of these spreads to save yourself 30 calories per tablespoon. If you're not a bread eater, please don't start just to have a vehicle for these spreads! Instead consider the plant stanol/sterol supplements.

My favorite is *Cholest-Off* by Nature Made. You have to take two tablets in the morning and two tablets at night (a total of four tablets a day), 15 to 30 minutes before a meal. If you are taking a prescription cholesterol-lowering medication, talk with your doctor before taking sterol/stanol supplements.

- Alcohol: The benefits of alcohol depend, in part, on exactly what your cardiovascular risk factors are. Research suggests that drinking moderate amounts of alcohol (that's no more than one serving per day for women, and no more than two servings per day for men) may reduce the risk of coronary artery disease by about 25 percent, and reduces the risk of death from heart disease by about 12 percent.  
\*Alcohol seems to increase the good HDL cholesterol and to prevent clots.

Although all alcohol has heart-healthy benefits, red wine also contains antioxidants called flavonoids and resveratrol—an extra boost of nutrition.

However, BIG CAVEAT: if your problem is high triglycerides, or you're at high risk for breast cancer, alcohol is contraindicated and should be enjoyed as a very occasional treat. Also, if you are currently taking medication for lowering blood pressure or cholesterol, or if you have diabetes, ALWAYS talk with your doctor about whether drinking alcohol makes sense for you. There are some questions about whether alcohol might interact with medications, or complicate potential liver problems.

# How to Increase HDL Cholesterol

---

## How to Increase HDL Cholesterol

Having high levels of HDL cholesterol (at least **60** mg/dL) helps protect against heart disease and also offers even wider health benefits. You should check the Internet (hundreds of articles) on how to increase your HDL cholesterol. We recommend these 2 websites, and there are other good sites that may be helpful.

<http://www.mayoclinic.org/diseases-conditions/high-blood-cholesterol/in-depth/hdl-cholesterol/art-20046388>

<http://www.prevention.com/health/health-concerns/15-ways-improve-your-cholesterol>

To improve your health and get savings on your Life insurance premiums, begin immediately to increase your HDL cholesterol. Your heart will thank you.

**Lifestyle** has the single greatest impact on your HDL cholesterol. Even small changes to your daily habits can help you meet your HDL target. The key is **diet and exercise**.

- A. Be more physically active, best to have 30 minutes activity 5 days per week (2 months of aerobic exercise increases HDL 5% or more, typically that is needed for the Life insurance savings).
  1. Substantially reduce sugar and carbohydrates (what you do eat should be whole-grain so high in fiber like whole wheat and oatmeal).
  2. Minimize saturated and trans fats (no fried foods, etc.).
  3. Eat more good fats (nuts, beans, fatty fish, olive oil, avocados & guacamole) and try 50 grams of dark chocolate (about 1.5 ounces) daily.
  4. The best nuts for this are walnuts, almonds, cashews, peanuts, pistachios, pecans, peanuts, and hazelnuts.
  5. The best fish for this and highest in omega-3 fatty acids are salmon, mackerel, albacore tuna, and halibut.
  6. Eat more fruits and veggies, including plums, apples, grapes, raspberries, oats, spinach, purple cabbage, eggplant, and garlic.
  7. Limit alcohol to a maximum of 1 drink a day, and if you drink it should be red wine.

## Cholesterol-Lowering Foods

by Elizabeth M. Ward, M.S., R.D.

<http://health.yahoo.com/search/miavita?lb=p&p=id%3A37830>

If you have high cholesterol, simple dietary changes can lower it by 5% - 10%, on average. It may not sound like much, but that's a bold improvement -- a 10% reduction in blood cholesterol reduces your heart disease risk by about 20 - 30%. See the lists below for foods that can help, and foods that can hurt. A diet that helps you beat high cholesterol is low in total fat, saturated fat and trans-fatty acids, with the right number of calories to achieve and maintain a healthy weight. Often, losing even a few pounds makes a difference.

### Tips To Lower Total Cholesterol

- Avoid high-fat meat.
- Avoid full-fat dairy or high-fat processed foods.
- Choose low-fat or fat-free dairy, and lean poultry breast (without the skin).
- Get more protein from seafood, soy and beans.
- Eat more fruits and vegetables.
- Use olive oil and pan sprays for cooking.
- Enjoy small portions of foods that are rich in "good fats," such as nuts and seeds, as calories allow.
- Eat 25 grams of soy protein a day. You'll get there with about 2 heaping tablespoons of soy powder, or 2 cups of low-fat soymilk and 4 ounces of firm tofu. (If your cholesterol level is above 240 mg/dL, you may want to aim for 25 - 30 grams.)

### Foods To Avoid

Each of these foods is a significant source of saturated fat -- the major dietary culprit in high cholesterol. Trans fats are even worse; to limit them, avoid processed foods made with partially hydrogenated vegetable oils.

Butter	Canned shortening	Bacon
Red meat (beef,pork,lamb)	Commercial donuts	Sausage
Poultry skin	Commercial cakes	Coconut oil
Stick margarine	Commercial cookies	Palm oil
Fast foods (pizza,deep-fried, burgers)	Commercial pies	Palm kernel oil
Full-fat cheese	Ice cream	
	Whole- and 2%-fat milk	

### Low-Calorie, High-Fiber Winners

These foods are low in calories and high in fiber -- adding 6 grams of soluble fiber (one large orange and a cup of strawberries would do it) to your daily diet reduces harmful LDL cholesterol an average of 10 - 20%.

Pay attention to food color, too: Whole foods in a rich shade of red, orange, yellow or blue usually contain a health promoting phytochemical.

Dark green leafy vegetables

Garlic and onions

Strawberries, citrus fruits, blueberries and other fruit of varying colors

**Good Grains** - Whole grains are rich in fiber; oatmeal's soluble fiber is especially efficient at lowering high LDL cholesterol. ([Whole grains](#), [Oatmeal](#), [Oat bran](#))

### **Good Fats**

Use "good" fats in place of saturated fats -- nuts instead of cheese, olive oil instead of butter. But remember, even good fats have lots of calories; so don't overdo it. Gaining weight by itself can raise your blood cholesterol -- just as losing weight often lowers it. ([Olive oil](#), [Nuts and seeds](#), [Avocados](#))

### **Have A Drink On Us**

[Green tea](#) and, to a lesser extent, black tea, contain antioxidants that guard LDL cholesterol from the free radicals that endanger your arteries. Many vegetables and fruits also contain LDL-protective antioxidants. [Alcohol](#) in moderation typically raises levels of protective HDL cholesterol, though it doesn't lower harmful LDL. One drink a day lowers heart disease risk for a woman; two do the trick for a man. Red wine also contains beneficial antioxidants. Make sure that you account for the calories provided in alcohol -- at 20 calories an ounce, it adds up fast! ([Green tea](#), [Red wine](#))

---

## **Study: Exercise Hits Cholesterol Risk**

Wed Nov 6, 8:08 PM ET 2002 By *DANIEL Q. HANEY, AP Medical Editor*

BOSTON (AP) - Need another reason to exercise? Scientists have discovered it makes cholesterol less dangerous. A new study found that even modest exercise changes the size and density of cholesterol-carrying proteins so they do less damage. And the benefits occur even if people's total amount of cholesterol and their weight stay the same.

Staying active has many health benefits, but improving cholesterol is not usually considered one of them. People who exercise often lose weight, and while that can improve their cholesterol levels, exercise by itself was thought to have little or no effect. Workouts fail to lower LDL, the dangerous form of cholesterol, and only rigorous exercise can nudge up HDL, the good form that protects against heart attacks.

But the study, by Dr. William E. Kraus of Duke University, found a new way that exercise can affect cholesterol — by altering the number and size of the particles that carry cholesterol through the bloodstream. "People in the exercise field have always wondered why it doesn't affect total cholesterol and LDL," Kraus said. "We always knew low levels of exercise are helpful. This helps solve that paradox."

His work, published in Thursday's issue of the New England Journal of Medicine ([news - web sites](#)), is the latest chapter in an evolving view of cholesterol's effects. A generation ago, doctors worried only about the total amount of cholesterol. Later, the importance of the main subtypes, especially HDL, became apparent. Now experts are turning their attention to the physical structure of cholesterol in the bloodstream.

Cholesterol is an essential fat, or lipid. It circulates through the body by attaching to protein particles. Cholesterol appears more likely to clog the arteries when it is carried by small, dense protein particles than when it is moved by relatively large, fluffy ones. The latest study finds that people who exercise develop these bigger particles, even if their total amount of cholesterol stays the same. "Using this analysis shows clearly that exercise has beneficial effects that are not revealed by standard tests," said Dr. Ronald M. Krauss of the Lawrence Berkeley National Laboratory, who studies the protein particles.

The study, conducted at Duke and East Carolina University, involved 111 sedentary, overweight men and women. They were randomly assigned to three exercise groups: the equivalent of walking 12 miles a week, jogging 12 miles a week or jogging 20 miles a week. All were instructed to eat enough to keep their weight constant. They found that the cholesterol effects of walking and jogging 12 miles were the same, while jogging 20 miles resulted in more pronounced changes. Measuring protein particle size is sometimes done in large medical centers, but it is not part of standard physicals. Kraus said he expects the tests, which cost two or three times more than standard cholesterol tests, to become more widely used.

Dr. Joann Manson, head of preventive medicine at Harvard's Brigham and Women's Hospital, noted that exercise has already been found to have many other benefits for the heart, including improvements in blood pressure, blood sugar, clotting and inflammation. Studies show that briskly walking 30 minutes a day can lower the risk of heart disease by 30 percent to 40 percent.

"Lipids are not the full story," Manson said. EDITOR'S NOTE: Medical Editor Daniel Q. Haney is a special correspondent for The Associated Press. On the Net: <http://content.nejm.org>



This page gives how to raise HDL (good) cholesterol. You The information given in this page is a general guidance only. It is in no way a medical advice. Please consult your doctor.

## **Raise HDL Cholesterol (Good Cholesterol)**

A low level of HDL (less than 35mg/dL) is considered as a risk factor, even if your total cholesterol is within limits, i.e. your risk of heart disease is elevated. It is found that even small increases in HDL cholesterol could reduce the risk of heart attacks. For each 1 mg/dL increase in HDL cholesterol there is a 2 - 4% reduction in the risk of coronary heart disease.

You can raise your HDL cholesterol by simple life style modifications. Regular [aerobic exercise within your target heart rate](#) and weight loss will help. You can raise the level of HDL cholesterol by the following:

1. **Foods that raise HDL cholesterol include onions, omega-3 acids, and soluble fibers. Eat half a raw onion a day** raises HDL (good) cholesterol an average of 25 percent in most people with cholesterol problems.
2. **Eat at least two servings of foods high in soluble fiber.** Soluble fiber is found in whole grains, oats and oat bran, brown rice, fruits such as citrus fruit, apples, grapes, etc. and legumes & lentils. The soluble fiber raises HDL levels and helps lower total cholesterol. The wholegrain are also good source of linoleic acid.
3. [Use cooking oils higher in monounsaturated fats](#), such as canola or olive oil. It is found that monounsaturated fats raise HDL levels.
4. **Increase your consumption of omega-3 fatty acids** found in fish, cold-pressed flaxseed oil, safflower oil, sunflower oil, canola oil, dark green vegetables, etc.
5. **Eat at least two servings of soy (phytoestrogens) products.** Tofu, tempeh, and TVP (texturized vegetable protein) may help raise HDL levels. Include at least two servings each day.
6. **Avoid trans fatty acids i.e. hydrogenated oil or vegetable shortening (*Dalda, Rath, and Vanaspati* in India). Choose a liquid or semisoft variety of margarine in your diet** Trans fatty acids are found in and many fast foods and french fries, baked goods such as cookies, crackers and cakes. Remember, the softer the spread, the less trans fat it contains.
7. **Avoid refined carbohydrates** like sugar and refined flour. These have shown to raise blood cholesterol and triglycerides.
8. **Avoid** food sources of cholesterol such as egg yolk, liver, kidney, brains, etc.
9. **Avoid** high fat dairy products such as regular milk, cheese and cream.
10. **Reduce** alcohol intake. However, alcohol (wine or beer) in moderation may raise HDL levels. However, if your do not drink, don't start to raise HDL, it is not a medicine.
11. Do aerobic exercise (brisk walking, jogging, etc.) every alternate day.

Note that [LDL HDL cholesterol ratio](#) is more important than their individual values.

## **HDL or Good Cholesterol Foods**

**Red Wine:** Drinking red wine is yet another option as long as it is consumed within reason. *"There are antioxidants contained in red wines such as cabernet sauvignon, Merlot, and pinot noir, that help slow down the oxidation of HDL and LDL cholesterol"*, according to Vincent Rifici of the Robert Wood Johnson Medical School. What was shown is not that the HDL was higher than those not drinking, but that the HDL contained higher levels of several types of blood fats, thus giving the positive result. There is still a lot more research required but this could prove to be a wonderful option.

**Orange Juice:** There was one specific study conducted at the University of Western Ontario in Canada where 25 students drank orange juice every day for four weeks. The results were amazing. HDL was raised an astounding 21%. The individual leading this study, Elzbieta Kurowska, stated this increase might have been caused by the flavonoid in the orange juice.

**Beans:** Kidney and red beans are a wonderful choice for raising HDL. These foods are low-glycemic carbohydrates that during digestion do not cause insulin spikes. Studies conducted where people ate foods rich in low-glycemic carbohydrate measure with the highest level of HDL.

**Fish:** Fish eaten several times a week can also be beneficial in raising HDL since it contains omega-3 fatty acids. This fish would include sardines, salmon, sea bass, herring, etc. If you do not like to eat fish, [fish oil](#) can be used as a supplement although the benefit takes much longer.

**Olive Oil:** Use oils higher in mono-unsaturated fats, such as olive oil or canola oil. Including 1-2 teaspoons of olive or canola oil with each meal would be sufficient.

**Oat bran:** Lowers cholesterol and LDL and raises HDL. In one study, two ounces of oat bran per day was associated with a 16% lowering of LDL and, after 3 months, an increase in HDL of as much as 15% ([JAMA](#). 1991. 285. 1833-1839).

**Onions:** Some research suggests that half of raw onion/day may raise HDL as much as 30%.

**Soy Products:** A 1995 meta-analysis of 38 studies of soy confirmed that it lowers total cholesterol, LDL ("bad") cholesterol, and triglycerides, and raises HDL ("good") cholesterol.

**Soluble Fiber:** Add more soluble fiber to diet. Soluble fiber is found in fruits such as apples, grapes, and citrus fruits. The fiber in these foods helps lower total cholesterol and often raises HDL levels. You need to consume at least 30 grams of fiber per day.

## Good Cholesterol, Bad Cholesterol Can exercise make a difference?

by Martica Heaner, M.A., M.Ed., for MSN Health & Fitness



**Q.** How does exercise lower cholesterol? What activities are the most effective?

**A.** For the record, cholesterol in the body is a good thing—it is needed for cell membranes and the production of hormones, among other functions. But too much can signal that there is too much fat in the blood. Back in the '80s when people became aware of the need to control their cholesterol levels, many did so by shunning eggs since they contain a large amount of the substance. However, eggs are not a problem. The body makes what cholesterol it needs; the more that comes from food, the less the body makes. So cholesterol levels are controlled automatically. But a diet high in saturated and trans fats, typical of someone who eats lots of unhealthy food, may overload the body beyond its ability to regulate its levels.

Cholesterol levels reflect the amount of fat being carried through your blood by different “lipoproteins.” These numbers are used as a measure to predict your risk for heart disease. Your total cholesterol number is not as important as the figures for each of the components: your LDLs, HDLs and triglycerides.

High-density lipoproteins (HDLs) are considered to be beneficial since they sweep the blood of excess fat and cholesterol. On the other hand, low-density lipoproteins (LDLs) are worrisome because they can contribute to the build-up of plaque in your arteries. Recent research shows that the size of each of these particles is as important as the number. So with LDLs, if they are bigger and fluffier they are less likely to contribute to plaque than the smaller and denser variety. (The type of blood test to ascertain size is not often performed in a regular check-up, however.)

Experts agree that out-of-whack cholesterol, especially LDL at or above borderline levels, needs to be treated to lower the risks of heart disease. Doctors recommend an LDL level below 100 mg/dL (milligrams per deciliter of blood.), and below 70 mg/dL for those with other risk factors. Triglycerides should be below 150 mg/dL, and “good” cholesterol, HDLs, should be kept high, above 40 mg/dL and more than 60 mg/dL optimally. To find out more check out: <http://www.nhlbi.nih.gov/health/public/heart/index.htm#chol>

People with Type 2 diabetes or existing heart disease may need to lower their cholesterol right away, so doctors usually prescribe a quick fix, statins such as Lipitor and Zocor. At their highest doses, these potent pharmaceuticals have the ability to lower “bad” cholesterol from 20 percent to as much as 60 percent in just a few months. But even when statins are prescribed, lifestyle changes—better diet and more exercise—are an integral part of long-term management.

Diet guidelines are to reduce the main culprits: saturated animal fats (like high-fat meat and dairy) and trans fats (hydrogenated oils) in foods. A recommended diet should have less than 35 percent total fat with less than 7 percent of that saturated fat and minimal trans fat. Eating plenty of fruits, vegetables, grains and “good” unsaturated fats, such as those found in nuts, can also help lower LDLs and boost HDLs. A high soluble-fiber diet, the kind of fiber found in oatmeal, psyllium supplements and dried beans, can lower LDLs, too.

One problem with fighting high cholesterol with diet only is that even if LDLs decrease, HDLs may drop, too. Keeping HDLs high is important because it is estimated that for every 1 mg/dl increase in HDL, the risk for coronary heart disease is reduced by up to 3 percent. But doing aerobic exercise along with diet changes can prevent or decrease a drop in HDLs.

Exercise alone works to a degree, too. The biggest effect of exercise on improving cholesterol levels is boosting HDLs and lowering triglycerides. But to give HDL levels a good boost above the baseline, exercise must be regular and expend enough energy to burn at least 800 to 1,200 calories per week. Any aerobic exercise—from walking and running to swimming and cycling—counts. Walking at three miles in an hour burns about 300 calories, on average. To meet the threshold then, a person needs to walk around eight to 12 miles a week, or do some other aerobic activity for at least 30 minutes on six or more days per week.

As far as triglycerides go, exercise can reduce them by around 15 percent to 25 percent. There appears to be a similar threshold of regular exercise required to trigger the effect—expending at least 1,200 calories a week, with up to 2,500 to 3,000 calories a week recommended.

How fitness affects LDLs is less clear. Reductions from 5 percent to 19 percent have been seen, but often with concurrent weight or fat loss. However, some studies have found that LDL is reduced even without weight change, usually from burning at least 1,200 calories per week. While exercise may not consistently decrease LDLs, it may improve their quality. Early research suggests that regular aerobic exercise can produce more of the bigger, fluffier variety.

It's unclear whether weight training affects cholesterol levels. Since changes seem dependent on total calories burned and weight training tends to burn fewer calories than moderate or vigorous aerobic activity, the impact appears minimal. Also, the jury is still out on whether intensity—how hard a workout is—plays a role. To see most cholesterol changes, exercise must be at least moderate (a brisk walk or cycle ride where you move at an intensity that feels “somewhat hard” or “hard.”). An exact dose-to-response has not been yet been determined, but a session may need to last long enough to burn around 350 calories at a time, or result in an accumulation of 1,200 to 2,500 calories over a week.

Exercise as an anti-cholesterol treatment does not work for everyone. Some people seem more resistant to changes, especially in HDLs, probably due to genetics. Keep in mind that using exercise is a slow approach and you may not see changes for three to six months, if you do at all. But even if exercise does not improve the numbers, exercise is always a good thing since it helps reduce other heart disease risk factors, such as high-blood pressure.