Non-Drug Ways to Promote Health by Lowering Cholesterol

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Garlic & Onions

It seems that foods that cause your breath to smell are also very good for you. Garlic and onions are from the allium family. Garlic appears to be most helpful if you chop it and then eat it 10-15 minutes later. Chopping activates allicin, which is one of the active ingredients. Eating ½-1 clove of fresh garlic a day can reduce cholesterol by 10%. Garlic in capsule or supplemental form does not appear to help cholesterol levels. Garlic also modestly lowers blood pressure, reduces "hardening of the arteries" (a build-up of cholesterol and other substances in the blood vessels), and helps prevent blood clots by thinning the blood. This helps promote heart health. It is a good idea to eat these vegetables regularly.

Artichoke

Substances in artichoke extract work similarly to statin medications in lowering cholesterol. Try to eat the whole food as a part of your Mediterranean diet.

- **Artichoke Extract Supplement** – Some promising research suggests that a supplement of artichoke extract may be able to lower LDL cholesterol by 23% over a 6-week period. Possible side effects include abdominal gas or an allergic reaction. Otherwise artichoke appears to be safe with no known drug-herb interactions.

  Dose: take 1800 mg of Artichoke Extract each day in divided doses (either 600 mg three times a day or 900 mg twice a day).

Grapes

Grape products contain chemical substances called polyphenols. These don't seem to lower cholesterol, yet they appear to protect the body against heart disease. This is particularly the case for people who eat a diet high in saturated fat. One of the polyphenols found in grapes (particularly pinot noir wine), is called resveratrol. A study in the journal *Nature* found that rodents fed a high saturated fat diet while given high doses of resveratrol significantly outlived the rats not given resveratrol. They also had better coordination and stamina. But this is not a reason to start drinking wine if you don't do so now. For humans to achieve a similar dose of resveratrol, they would have to drink 150-200 bottles of wine a day! The beneficial phenols found in grapes may help explain why the French who tend to love wine have a lower risk of heart disease, despite a diet high in fat.

Foods rich in polyphenols

Foods rich in polyphenols include: grapes, wine, blueberries, cranberries, bilberries, black currant, peanuts, green and black tea, onions, legumes and parsley. Any blue, purple or dark colored grape or berry will be rich in these polyphenols.

Red Yeast Rice (RYR)

This supplement is made by fermenting white rice with the yeast, *Monascus purpureus*. The fermentation process turns the yeast red and produces mevinic acids. One of these acids is called monacolin K or mevinolin, which is also found in the statin drug, lovastatin. These acids reduce the amount of cholesterol made in the liver. Red yeast also contains sterols, including beta-sitosterol (also found in vegetables); isoflavones (also found in soy); and monounsaturated fatty acids (also found in olive oil). It is likely that red yeast rice lowers cholesterol because of both the mevinic acids and these other ingredients.

A study compared cholesterol levels in two groups of patients. One group received 40 mg of simvastatin (a prescription statin drug) and an educational pamphlet. Another group took 1200 mg of red yeast rice twice a day, about 3.5 gms of fish oil every day and took part in a12-week program that focused on the importance of a Mediterranean diet, exercise

and relaxation. After 12 weeks, the group who took simvastatin on average reduced their LDL 39%. The people who took the red yeast rice reduced their LDL 42%. Research in China has shown that patients who had a previous heart attack who took red yeast rice during the study were less likely to have another heart attack or die during the study than the group who did not take red yeast rice.

Dose: 1200 to 1800 mg twice daily. (3.6 gms of red yeast rice is similar to 6 mg of lovastatin). If the fermentation process is not done correctly, the chemical *citrinin* may be made. *Citrinin* can damage the kidneys.

Products that have been found to be free of *citrinin* while having high amounts of active ingredients as tested by a private lab (consumerlab.com) include:

- Cholestene Red Yeast Rice, 600 mg capsules.
- Chole-sterin Red Yeast Rice, 600 mg capsules.
- Healthy America Red Yeast Rice, 600 mg capsules.

NOTE: Red yeast rice seems to be less damaging to the muscles than statin drugs. But it can still injure muscles and the liver as do statin drugs. Your primary care practitioner should monitor the health of your liver regularly if you take red yeast rice.

How can niacin help?

Niacin (Vitamin B_3) can decrease the total cholesterol, LDL and triglyceride levels while increasing the good (HDL) cholesterol. Its main drawback is the side effects of flushing and stomach upset. The usual dose of Niacin is 1000-1500 mg daily taken in divided doses. But you need to start low and increase the dose slowly as you are able. See below for a dosage chart. Niacin can affect the liver, so it is a good idea to see your health care practitioner to get a baseline blood test for liver function before you start taking niacin. If you work up to 800 mg or more per day, you should have a repeat blood test within four weeks of starting this higher dose.

Immediate release niacin

You can buy immediate release niacin over-the-counter without a prescription. It is available in 100 mg, 250 mg, 500 mg, and 1000 mg tablets. Avoid the "no-flush" niacin (Inositol Hexaniacinate) because it is not effective.

Sample brands of immediate-release niacin are: Twinlabs, NOW, Nature's Way, Solaray.

Sample dosing schedule for immediate-release niacin:

Day #	Breakfast 100mg	Dinner 100mg	Total Dose per Day
1 - 3	0	1	100 mg
4 - 6	1	1	200 mg
7 - 9	1	2	300 mg
10 -12	2	2	400 mg
13 - 15	2	3	500 mg
16 - 18	3	3	600 mg
19 - 21	3	4	700 mg
22 - 24	4	4	800 mg **

** Continue the same dose gradually until taking 1000 mg to 1500 mg a day total. A repeat blood test should be done at that time.

Extended-release niacin

Extended-release niacin is more convenient because you can take it once a day at bedtime. It causes less flushing but can also cause problems in the liver. If you take this form of niacin, your health care practitioner should order blood tests regularly to determine that you are not developing liver problems. Extended-release Niacin requires a prescription Niaspan® (Abbott Laboratories) 500, 750 and 1000 ER. Start 500 mg at bedtime and increase by 500 mg each week building up to a maximum dose of 2000 mg at bedtime.

Reducing side effects
The most common side effect from niacin is flushing of the skin. This skin flushing is often described as redness or itching and tingling sensations that usually occur on the face, neck, chest, and back. The flushing sensation can be a nuisance but is not serious. The flushing usually will go away within 10 to 60 minutes. As your body adjusts to the niacin, the flushing will become milder and eventually stop.

Following are some tips to minimize the flushing side effect:

- Do not take niacin with hot beverages, alcohol, or spicy food.
- Increase the dosage VERY SLOWLY, every 3 to 7 days.
- Take the niacin with breakfast and dinner to avoid stomach upset and promote more even absorption.
- Take half of a regular adult aspirin or 81 mg twenty minutes before each niacin dose. You may need to take the aspirin for three to four weeks, until your body adjusts.

NOTE: If your cholesterol remains too high after trying these non-drug ways to lower it, your liver may be making too much cholesterol. It then would be a good idea to try a prescription medication (statin) to reduce your risk for developing heart disease or stroke.

To raise HDL (the good cholesterol) in your body:
Each 1 point (mg/dl) rise in HDL reduces cardiovascular risk by 2-3%

- **Avoid smoking:** stopping smoking raises HDL by 4 mg/dl.
- **Engage in aerobic exercise:** the more the better. Aerobic exercise raises HDL 5-10%.
- **Maintain appropriate weight:** 22 lbs of weight loss (10 kg) raises HDL by 20%.
- **Eat a balanced diet, with fewer sugars and starches and more soy protein, fiber, and monounsaturated fats including olive/canola oils and avocados.**
- **Eat foods rich in polyphenols (e.g., dark grapes, blueberries, cranberries)**
- **Consider taking niacin**: at appropriate doses, niacin raises HDL 15-37%.

Summary

	LDL Cholesterol	HDL Cholesterol	Triglycerides
Fiber	↓ 5-26%	–	–
Soy	↓ 13%	↑3%	↓ 11%
Plant Stanols/Sterols	↓ 5-17%	–	–
Nuts (Walnuts)	↓ 8-16%	–	–
Fish Oil	–	–	↓ 20-30%
Garlic	↓ 4-12%	–	–
Artichoke Extract	↓ 10-23%	–	–
Red Yeast Rice	↓ 25-35%	–	–
Niacin	↓ 10-15%	↑ 35%	↓ 20-50%

Above chart adapted from Natural Medicines Comprehensive Database. Monograph on Clinical Management of Hyperlipidemia. http://www.naturaldatabase.com. Last accessed: 6/23/09.

The information in this handout is for general education. It is not meant to be used by a patient alone. Please work with your health care practitioner to use this information in the best way possible to promote your health.

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Date revised: July, 2009

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