

Researchers Agree:

New Plant Extract Offers Powerful Protection Against Heart Disease

It's hard to not be frightened. Heart disease kills or cripples more people than any other cause. Cardiovascular disease (CVD) affects over 60 million Americans with heart disease and stroke, causing almost half of all deaths.¹ CVDs include problems not only with the heart but also high blood pressure and the much-feared "brain attack" we call stroke.²

Fortunately, researchers have demonstrated that Policosanol, an exciting new dietary supplement extracted from the wax that covers sugar cane stems, may help. Policosanol has been shown to lower LDL cholesterol and raise HDL cholesterol as well as or better than drugs, and without the serious side-effects of pharmaceuticals. Preliminary research suggests it may help reduce abnormal clotting as well.

Nutritional Help for Cholesterol

Cholesterol problems often run in families. The defect appears to be a lack of liver receptor cells that bind to LDL, thereby removing it from the blood. The result: LDL-cholesterol levels 2-1/2 times normal.³ Because the liver manufactures most of this cholesterol internally,⁴ adopting a low-cholesterol diet may not bring the level down much. Obviously, adjusting liver function is a key to cardiovascular health.

Many people with heart disease deny their symptoms and risks, even to themselves. However, all adults

Policosanol Reduces Cardiovascular Risk Several Ways

- Down-regulates cholesterol synthesis in the liver.⁶
- Increases LDL receptors to speed removal from blood.⁶
- Increases HDL levels.^{7,8,9,10}
- Does not inhibit synthesis of enzymes essential for CoQ10 synthesis.⁶
- Reduces oxidation of cholesterol, reducing plaque formation in the arteries.¹¹
- Has a synergistic effect with aspirin to reduce blood "stickiness."^{12,13}
- Reduces proliferation of smooth muscle cells within blood vessel walls.¹⁴
- Works synergistically with fibrate medications.⁶
- Reduces claudication (leg pain).¹⁵
- Prevents injury to arteries' inner walls.^{16,17}
- May ease carotid artery blockages in the neck.¹⁸

should know their cholesterol levels, and everyone should realize that lowering LDL cholesterol and raising HDL cholesterol can substantially reduce the risk of having a second or even a first heart attack. Experts recommend keeping total cholesterol levels below 200—even below 180—to reduce heart attack risk.¹⁹

For every 1% increase in total cholesterol over 200 mg/dL, a person's risk of heart attack rises

2%, according to the Framingham Heart Study.²⁰ An especially bad factor is LDL cholesterol, but even this isn't the whole story.

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Even people with low LDL still die from heart attack. **Raising HDL appears to be an even more important protection than lowering LDL.** This may result in part from HDL's function as a "vacuum cleaner" that removes LDL. An analysis of four major heart studies,²¹ including Framingham, shows that each 1mg/dL increase in HDL reduces risk of cardiovascular disease by 2%-3%. This same 1 point increase in HDL concentration also cuts risk of dying from cardiovascular disease by 3.7%-4.7%. Interestingly, the higher benefits occurred for women.

Corrects Cholesterol Balance Naturally

In repeated, well-controlled trials, Policosanol showed consistent improvement in blood cholesterol profiles.^{7,9,10,22,23} Decreases in total cholesterol ranged from 14.7%-17.4%. Decreases in LDL cholesterol ranged from 15.6%-29%. And increases in HDL ranged from 15%-29.1%.

In one large open label study, more than 3000 people took Policosanol for an average of 2.5 years²⁴ and only 26 dropped out because of side effects. By chance, the Policosanol group reported more hypertension, ischemic cardiovascular disease and vascular events **before** the study began. However, **after treatment** the Policosanol group had **significantly fewer** hospitalizations and fewer coronary events than those on placebo.²⁴

- **Cardiovascular disease is the Number 1 killer in the United States,⁵ claiming 950,000 lives in the United States in 1998. That includes 459,841 from coronary heart disease and 158,448 from stroke.²**
- **1 in 3 men can expect to develop major cardiovascular disease before the age of 60; the odds for women are 1 in 10.⁵**

Policosanols Effects in People with High Cholesterol

Additional Study Characteristics	Total Cholesterol	LDL	HDL
Atherosclerosis ²²	-14.8%	-15.6%	---
Additional coronary risks ⁷	-17.4%	-25.6%	+28.4%
Elderly ⁸	-15.6%	-23%	---
Postmenopausal women ⁹	-17%	-25%	+29%
Additional coronary risks ¹⁰	-16.2%	-24.4%	+29.1
Over age 60 ²³	-14.7%	-17.9%	---

Better Than Statins?

American doctors write 30 million prescriptions each year for drugs that lower blood fats, including the popular statins.²⁵ Although the statins do lower cholesterol, they are also expensive, can cause liver and muscle toxicity, and interfere with the body's production of CoQ10.

Luckily, Policosanol has been shown to work as well as or better than statin drugs.^{26,27,28,29} Both lower LDL and total cholesterol, and Policosanol performs significantly better at elevating HDL.

In an 8-week randomized study of women aged 60-80 with high blood cholesterol levels, Policosanol yielded significantly better results than the prescription drug fluvastatin with fewer side effects.²⁶ Another randomized, double-blind study compared policosanols and lovastatin in patients with high cholesterol and noninsulin dependent diabetes mellitus. Both treatments lowered LDL, but Policosanol

yielded significantly better changes in HDL, and researchers noted it had a better safety and tolerability profile.²⁷ Similar results have been obtained for lovastatin and simvastatin,²⁸ and pravastatin.²⁹

Blood vessels are subject to damage, and a rabbit study showed Policosanol stopped the proliferation of smooth muscle cells in the walls of blood vessels.^{14,16} This indicates Policosanol may reduce formation of scar tissue that can narrow the arteries, a finding in keeping with effects reported for other lipid lowering drugs, such as most of the statins.⁶

More Effective than Fibrate Medications

Although Policosanol does not itself consistently affect triglyceride levels, it does appear to have a synergistic effect with fibrate medications, which lower triglycerides and raise HDL.⁶ Although studies have been small, the results have been consistent. In all but one study, both policosanols and fibrate medications significantly increased HDL values. A combination of policosanols and gemfibrozil worked better than either by itself. In addition, Policosanol dramatically enhanced the ability of bezafibrate to lower LDL and total cholesterol.⁶

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<i>Effects on Blood Cholesterol</i>		
Comparison Statin	Policosanol	Statin
Decrease in Total Cholesterol		
Fluvastatin ²⁶	-19.3%	-16.7%
Lovastatin ²⁷	-14.2%	-14.0%
Decrease in LDL Cholesterol		
Fluvastatin ²⁶	-29.2%	-22.9%
Lovastatin ²⁷	-20.4%	-16.8%
Lovastatin ²⁸	-24%	-22%
Simvastatin ²⁸	-24%	-15%
Increase in HDL Cholesterol		
Fluvastatin ²⁶	19.8%	9.2%
Pravastatin ²⁹	18.4%	Not significant
Increase in HDL/LDL ratio		
Lovastatin ²⁷	23.7%	14.9%
Pravastatin ²⁹	28.3%	18.9%

Oxidation and Blood Vessel Health

In addition to helping the body remove LDL from the blood stream, Policosanol protects LDL against the oxidation that contributes to artery-clogging plaque. In laboratory conditions that mimic what goes on within arteries, 10 mg/day of Policosanol significantly reduced the oxidation of blood cholesterol by 32.2%³⁰ confirming results of animal studies.¹¹ Also, Policosanol reduced foam cell formation in rats,¹⁴ indicating a reduced inflammatory response and less blood vessel destruction.

Five Steps to Heart Health

1. Start exercising
2. Quit smoking
3. Adopt a healthy diet
4. Check cholesterol level
5. Keep LDL below 180¹⁹

Reduces Clotting, Lowers Blood Pressure

Policosanol also seems to work synergistically with aspirin to reduce abnormal blood clotting. In healthy subjects, a daily dose of 20 mg of Policosanol reduced platelet aggregation (i.e., decreased their stickiness) as effectively as 100 mg of aspirin.¹³ A comparison showed that aspirin was better at reducing one type of platelet aggregation but Policosanol was better at inhibiting another type. Together, Policosanol and aspirin worked better than either alone.¹³ Policosanol's ability to reduce aggregation may stem in part from its inhibiting effect on thromboxane, a chemical produced by blood cells that promotes clotting and constricts blood vessels.¹² Fortunately, it does this without inhibiting the production of beneficial prostacyclin, which relaxes blood vessel walls and promotes free flow of blood.¹²

In a long-term study, heart disease patients who took Policosanol with

aspirin had significantly fewer cardiac events, improved exercise function and better ECG responses than those who took either Policosanol or aspirin alone.³¹ These results suggest Policosanol might become as important as aspirin for reducing heart attack risk.

Other Potential Benefits

In a placebo-controlled study, patients with intermittent leg pain took 20 mg of Policosanol daily. After six months of treatment, the patients who took Policosanol were able to walk an average of about 70 meters farther without pain.¹⁵ This 50% improvement in performance was statistically significant.

In a double-blind trial, healthy subjects who took octacosanol, the primary ingredient of Policosanol, experienced a significant increase in grip strength and reaction time.³² In a double-blind placebo controlled trial, healthy subjects also experienced improved reaction time and brain activity after taking Policosanol for one week.³³

A small one-year pilot study suggested that Policosanol may also help atherosclerosis that affects arteries of the neck,¹⁸ and more research is needed. Animal studies also show that Policosanol helps stop the formation of artery lesions in rats¹⁶ and rabbits.¹⁷

How Policosanol Works

Policosanol is a purified mixture of molecules known as "long chain alcohols," (without intoxicating effects). With its wide range of protective actions, Policosanol shows great promise for people who want to reduce their cardiovascular risk.

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Policosanol has been extensively studied at medical facilities in other countries, notably Cuba, a nation that has few financial resources for treating heart patients, yet has an abundance of sugar cane fields.

Policosanol appears to work through several mechanisms. It inhibits the liver's production of LDL cholesterol,⁶ but unlike statins, it inhibits neither the HMG-CoA reductase enzyme⁶ nor the production of CoQ10. Also, animal studies have shown that Policosanol does not interfere with the liver's cytochrome P450 enzyme system that is responsible for the metabolism of many widely used drugs.⁶ Policosanol also increases receptors that help remove LDL from the body,⁶ further contributing to the drop in circulating LDL levels.

Animal studies show that octacosanol, the primary component of Policosanol, is initially taken up rapidly by the liver, which may relate to its beneficial cholesterol effects. It also accumulates in muscles, which may relate to its ability to increase muscle endurance.³⁴

Using Policosanol Safely

In short-term, placebo-controlled trials, more people complained about side effects of the placebo than of Policosanol in every category except abdominal pain (which was reported equally in both). Policosanol has shown no toxicity³⁵ and no carcinogenicity.³⁶

Typical recommended dosage is 10-20 mg daily. People taking blood thinners or anti-platelet medications should talk with their health care advisor before taking Policosanol.

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