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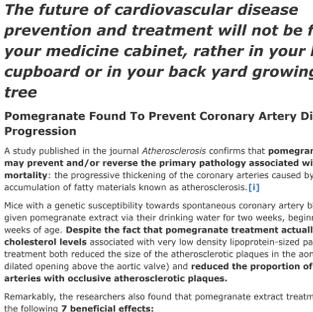
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## How to Clean Your Arteries With One Simple Fruit

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Written By: Sayer Ji, FounderThis article is copyrighted by GreenMedInfo LLC, 2020  
Visit our [Re-post guidelines](#)**The future of cardiovascular disease prevention and treatment will not be found in your medicine cabinet, rather in your kitchen cupboard or in your back yard growing on a tree****Pomegranate Found To Prevent Coronary Artery Disease Progression**A study published in the journal *Atherosclerosis* confirms that **pomegranate extract may prevent and/or reverse the primary pathology associated with cardiac mortality**: the progressive thickening of the coronary arteries caused by the accumulation of fatty materials known as atherosclerosis. [1]Mice with a genetic susceptibility towards spontaneous coronary artery blockages were given pomegranate extract via their drinking water for two weeks, beginning at three weeks of age. **Despite the fact that pomegranate treatment actually increased cholesterol levels** associated with very low density lipoprotein-sized particles, the treatment both reduced the size of the atherosclerotic plaques in the aortic sinus (the dilated opening above the aortic valve) and **reduced the proportion of coronary arteries with occlusive atherosclerotic plaques**.Remarkably, the researchers also found that pomegranate extract treatment resulted in the following **7 beneficial effects**:

1. Reduced levels of oxidatives stress
2. Reduced monocyte chemotactic protein-1, a chemical messenger (chemokine) associated with inflammatory processes within the arteries.
3. Reduced lipid accumulation in the heart muscle
4. Reduced macrophage infiltration in the heart muscle
5. Reduced levels of monocyte chemotactic protein-1 and fibrosis in the myocardium
6. Reduced cardiac enlargement
7. Reduced ECG abnormalities

**How can something as benign and commonplace as a fruit extract reverse so many aspects of coronary artery disease, simultaneously, as evidenced by the study above?** The answer may lie in the fact that our ancestors co-evolved with certain foods (fruits in particular) for so long that a lack of adequate quantities of these foods may directly result in deteriorating organ function. Indeed, two-time Nobel Prize winner Linus Pauling argued that vitamin C deficiency is a fundamental cause of cardiovascular disease, owing to the fact that our hominid primate ancestors once had year-round access to fruits, and as a result lost the ability to synthesize it.**There's another obvious clue as to how pomegranate may work its artery opening magic.** Anyone who has ever tasted pomegranate, or consumed the juice, knows it has a remarkable astringency, giving your mouth and gums that dry, puckering mouth feel. This cleansing sensation is technically caused, as with all astringents, by shrinking and disinfecting your mucous membranes.Anyone who drinks pomegranate juice, or is lucky enough to eat one fresh, can understand why it is so effective at cleansing the circulatory system. Nature certainly planted enough poetic justice clues there for us: **its juice looks like blood, and it does resemble a multi-chambered heart**, at least when you consider its appearance in comparison to most other fruits.**Indeed, your mouth and your arteries are lined with the same cell type: epithelial cells.** Together, they make up the epithelium, one of four basic tissue types within the body: along with connective tissue, muscle tissue and nervous tissue, and which comprises the interior walls of the entire circulatory system. So, when you feel that amazing cleansing effect in your mouth, this is in fact akin to what your circulatory system -- and the epithelium/endothelium lining the inside of your veins and arteries -- "feels" as well.**The Pomegranate "Artery Cleaning" Clinical Trial**

Clinical nutrition (2004) 29, 423-433

ORIGINAL ARTICLE

**Pomegranate juice consumption for 3 years by patients with carotid artery stenosis reduces common carotid intima-media thickness, blood pressure and LDL oxidation**Michael Aviram<sup>a,\*</sup>, Mira Rosenblat<sup>a</sup>, Dana Gaitini<sup>b</sup>, Samy Nitecki<sup>a</sup>, Aaron Hoffman<sup>a</sup>, Leslie Dorfmeid<sup>a</sup>, Nira Volkova<sup>a</sup>, Dita Presser<sup>a</sup>, Judith Atlas<sup>a</sup>, Harley Rappoport<sup>a</sup>, Tony Hayek<sup>a</sup><sup>a</sup>The Lipid Research Laboratory, Rappoport Family Institute for Research in the Medical Sciences, Rambam Medical Center, Haifa 31096, Israel; <sup>b</sup>The Department of Diagnostic Radiology, Rambam Medical Center, Haifa, IsraelPublished in *Clinical Nutrition* in 2004 and titled, "Pomegranate juice consumption for 3 years by patients with carotid artery stenosis reduces common carotid intima-media thickness, blood pressure and LDL oxidation," Israeli researchers discovered pomegranate, administered in juice form over the course of a year, reversed plaque accumulation in the carotid arteries of patients with severe, though symptomless, carotid artery stenosis (defined as 70–90% blockage in the internal carotid arteries).

The study consisted of nineteen patients, 5 women and 14 men, aged 65-75, non-smokers. They were randomized to receive either pomegranate juice or placebo. Ten patients were in the pomegranate juice treatment group and 9 patients that did not consume pomegranate juice were in the control group. Both groups were matched with similar blood lipid and glucose concentrations, blood pressure, and with similar medication regimens which consisted of blood-pressure lowering (e.g. ACE inhibitors, β-blockers, or calcium channel blockers) and lipid-lowering drugs (e.g. statins).

The ten patients in the treatment group received 8.11 ounces (240 ml) of pomegranate juice per day, for a period of 1 year, and five out of them agreed to continue for up to 3 years.

**The remarkable results were reported as follows:****"The mean intima media thickness the left and right common carotid arteries in severe carotid artery stenosis patients that consumed pomegranate juice for up to 1 year was reduced after 3, 6, 9 and 12 months of pomegranate juice consumption by 13%, 22%, 26% and 35%, respectively, in comparison to baseline values."****You can only imagine what would happen if a pharmaceutical drug was shown to reverse plaque build up in the carotid arteries by 13% in just 3 months!** This drug would be lauded the life-saving miracle drug, and not only would be promoted and sold successfully as a multi-billion dollar blockbuster, but discussion would inevitably follow as to why it should be mandated.While these results are impressive, if not altogether groundbreaking for the field of cardiology, they may be even better than revealed in the stated therapeutic outcomes above. When one factors in that the carotid artery stenosis increased 9% within 1 year in the control group, the pomegranate intervention group may have seen even better results than indicated by the measured regression in intima media thickness alone. That is, if we assume that the pomegranate group had received no treatment, the thickening of their carotid arteries would have continued to progress like the control group at a rate of 9% a year, i.e. 18% within 2 years, 27% within 3 years. **This could be interpreted to mean that after 3 years of pomegranate treatment, for instance, the thickening of the arteries would have been reduced over 60% beyond what would have occurred had the natural progression of the disease been allowed to continue unabated.****3 Ways How Pomegranate Heals The Cardiovascular System****The researchers identified three likely mechanisms of action behind pomegranate's observed anti-atherosclerotic activity:**

- **Antioxidant properties:** Subjects receiving pomegranate saw significant reductions in oxidative stress, including decreases in autoantibodies formed against ox-LDL, a form of oxidized low density lipoprotein associated with the pathological process of atherosclerosis. Decreases in oxidative stress were measurable by an increase in the blood serum enzyme paraoxonase 1 (PON1) of up to 91% after 3 years; PON1 is an enzyme whose heightened activity is associated with lower oxidative stress. All of this is highly relevant to the question of pomegranate's anti-atherosclerotic activity because of something called the lipid peroxidation hypothesis of atherosclerosis, which assumes that it is the quality of the blood lipids (i.e. whether they are oxidized/damaged or not), and not their quantity alone that determine their cardiotoxicity/atherogenicity. Essentially, pomegranate prevents the heart disease promoting effects of oxidative stress.

- **Blood Pressure Lowering Properties:** The intervention resulted in significant improvement in blood pressure: the patient's systolic blood pressure was reduced 7%, 11%, 10%, 10% and 12% after 1, 3, 6, 9, and 12 months of pomegranate consumption, respectively, compared to values obtained before treatment.

- **Plaque Lesion Stabilization:** Because two of the ten patients on PJ (after 3 and 12 months) experienced clinical deterioration, carotid surgery was performed and the lesions were analyzed to determine the difference in their composition to those who did not receive pomegranate. The researchers-noticed four distinct positive differences in the composition of the pomegranate-treated lesions: 1. **Reduced Cholesterol Content:** "The cholesterol content in carotid lesions from the two patients that consumed PJ was lower by 58% and 20%, respectively, in comparison to lesions obtained from CAS patients that did not consume PJ (Fig. 3A)."

- 2. **Reduced Lipid Peroxides:** "T[he] lipid peroxides content in lesions obtained from the patients after PJ consumption for 3 or 12 months was significantly reduced by 61% or 44%, respectively, as compared to lesions from patients that did not consume PJ (Fig. 3B). 3. **Increased Reduced Glutathione Content:** "A substantial increase in the lesion reduced glutathione (GSH) content, (GSH is a major cellular antioxidant) by 2.5-fold, was observed after PJ consumption for 3 or 12 months (Fig. 3C). 4. **Reduced LDL Oxidation:** "LDL oxidation by lesions derived from the patients after PJ consumption for 3 or 12 months, was significantly (P<0.01) decreased by 43% or 32%, respectively, in comparison to LDL oxidation rates obtained by lesions from CAS patients that did not consume PJ (Fig. 3D)."

Essentially these results reveal that not only does pomegranate reduce the lesion size in the carotid arteries, but **"the lesion itself may be considered less atherogenic after PJ consumption, as its cholesterol and oxidized lipid content decreased, and since its ability to oxidize LDL was significantly reduced."****This finding is quite revolutionary, as presently, the dangers of carotid artery stenosis are understood primarily through the lesion size and not by assessing for the quality of that lesion.** This dovetails with the concept that the sheer quantity of lipoproteins (i.e. "cholesterol") in the blood can not accurately reveal whether those lipoproteins are actually harmful (atherogenic); rather, if lipoproteins are oxidized (e.g. ox-LDL) they can be harmful (or representative of a more systemic bodily imbalance), whereas non-oxidized low density lipoprotein may be considered entirely benign, if not indispensable for cardiovascular and body wide health. Indeed, in this study the researchers found the pomegranate group had increased levels of triglycerides and very low density lipoprotein, again, underscoring that the anti-atherosclerotic properties likely have more to do with the improved quality of the physiological milieu within which all our lipoproteins operate than the number of them, in and of itself.Finally, it should be pointed out that all the patients in this study were undergoing conventional, drug-based care for cardiovascular disease, e.g. cholesterol and blood pressure-lowering agents. **Not only did the pomegranate treatment not appear to interfere with their drugs, making it a suitable complementary/adjunct therapy for those on pharmaceuticals, but it should be pointed out that the control group's condition got progressively worse** (e.g. the mean JHT increased 9% within 1 year), speaking to just how ineffective drugs are, or how they may even contribute to the acceleration of the disease process itself.**Further Validation of Pomegranate's Artery-Clearing Properties**

Pomegranate's value in cardiovascular health may be quiet broad, as evidenced by the following experimentally confirmed properties:

- **Anti-Inflammatory:** Like many chronic degenerative diseases, inflammation plays a significant role in cardiovascular disease pathogenesis. There are five studies on GreenMedInfo.com indicating **pomegranate's anti-inflammatory properties**.

- [i] **Blood-Pressure Lowering:** Pomegranate juice has natural angiotensin converting enzyme inhibiting properties, [iv] and is a nitric oxide enhancer, two well-known pathways for reducing blood pressure. [v] Finally, pomegranate extract rich in punicalagin has been found reduce the adverse effects of perturbed stress on arterial segments exposed to disturbed flow. [vi]

- **Anti-Infective:** Plaque buildup in the arteries often involves secondary viral and bacterial infection, including hepatitis C and Chlamydia pneumoniae. [vii]

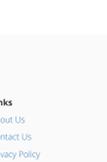
- **Antioxidant:** One of the ways in which blood lipids become heart disease-promoting (atherogenic) is through oxidation. LDL, for instance, may be technically "elevated" but harmless as long as it does not readily oxidize. Pomegranate has been found to reduce the oxidative stress in the blood, as measured by serum paraoxonase levels. One study in mice found this decrease in oxidative stress was associated with 44% reduction in the size of atherosclerotic lesions. [viii]

- **Anti-Infective:** While it is commonly overlooked, cardiovascular disease, and more particularly atherosclerosis, is connected to infection. Dentists know this, which is why they often prescribe antibiotics following dental work which releases bacteria into systemic circulation. Plaque in the arteries can also harbor viral pathogens. Pomegranate happens to have potent antiviral and antibacterial properties relevant to cardiovascular disease initiation and progression. It **has been studied** to combat the following infectious organisms:

1. Avian Influenza
2. Candida
3. Escherichia Coli
4. Hepatitis B
5. HIV
6. Influenza A
7. Poxvirus
8. Salmonella
9. SARS
10. Staphylococcus aureus
11. Vaccinia virus
12. Vibrio (Cholera) virus

For additional research on pomegranate's heart friendly properties read our article: **Research: Pomegranate May Reverse Blocked Arteries, and to learn more about it's broadly therapeutic properties read: 100+ Health Properties of Pomegranate Now Includes Helping Diabetics.**Also, view our dedicated research section on reversing arterial plaque: **Clogged Arteries****References**[1] Aishah Al-Jarallah, Maria Igldoura, Yi Zhang, Christine B Tenecero, Elizabeth J White, Melissa E Macdonald, Suleiman A Igldoura, Bernardo L Triggatti. **The effect of pomegranate extract on coronary artery atherosclerosis in SR-B1/APOE double knockout mice.** *Atherosclerosis*. 2013 May ;228(1):80-9. Epub 2013 Mar 7. PMID: 23528829[ii] Michael Aviram, Mira Rosenblat, Diana Gaitini, Samy Nitecki, Aaron Hoffman, Leslie Dorfmeid, Nira Volkova, Dita Presser, Judith Atlas, Harley Liker, Tony Hayek. **Pomegranate juice consumption for 3 years by patients with carotid artery stenosis reduces common carotid intima-media thickness, blood pressure and LDL oxidation.** *Clin Nutr*. 2004 Jun;23(3):423-33. PMID: 15158307[iii] GreenMedInfo.com, **Pomegranate's Anti-Inflammatory Properties**[iv] Mahalaxmi Mohan, Harshal Wagholde, Sanjay Kasture. **Effect of pomegranate juice on Angiotensin II-induced hypertension in diabetic Wistar rats.** *Phytother Res*. 2009 Dec 17. PMID: 20020514[v] Filomena de Nigris, Maria Luisa Balestrieri, Sharon Williams-Ignarro, Francesco P D'Armiento, Carmela Fiorito, Louis J Ignarro, Claudio Napoli. **The influence of pomegranate fruit extract in comparison to regular pomegranate juice and seed oil on nitric oxide and arterial function in obese Zucker rats.** *Nitric Oxide*. 2007 Aug ;17(1):50-4. Epub 2007 May 5. PMID: 17553710[vi] Filomena de Nigris, Sharon Williams-Ignarro, Vincenzino Sica, Lilach O Lerman, Francesco P D'Armiento, Russell E Byrns, Amelia Casamassimi, Daniela Cerpetano, Concetta Schiano, Daigo Sumi, Carmela Fiorito, Louis J Ignarro, Claudio Napoli. **Effects of a pomegranate fruit extract rich in punicalagin on oxidation-sensitive genes and eNOS activity at sites of perturbed shear stress and atherosclerosis.** *Cardiovasc Res*. 2007 Jan 15;73(2):414-23. Epub 2006 Sep 1. PMID: 17014835[vii] Yasunori Sawayama, Kyoko Okada, Shinji Maeda, Hachiro Ohnishi, Norihito Furusyo, Jun Hayashi. **Both hepatitis C virus and Chlamydia pneumoniae infection are related to the progression of carotid atherosclerosis in patients undergoing lipid lowering therapy.** *Kokoro* [Tokyo, Japan]. 2006 Aug;57(8):245-55. PMID: 17087362[viii] M Aviram, L Dorfmeid, M Rosenblat, N Volkova, M Kaplan, R Coleman, T Hayek, D Presser, B Fuhrman. **Pomegranate juice consumption reduces oxidative stress, atherogenic modifications to LDL, and platelet aggregation: studies in humans and in atherosclerotic apolipoprotein E-deficient mice.** *Am J Clin Nutr*. 2000 May ;71(5):1062-76. PMID: 10799367Sayer Ji is founder of [GreenMedInfo.com](#), a reviewer at the [International Journal of Human Nutrition and Functional Medicine](#), Co-founder and CEO of [Système Biomed](#), Vice Chairman of the Board of the [National Health Federation](#), Steering Committee Member of the [Global Non-GMO Foundation](#)

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