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Acai Helps Maintain Cholesterol Health

By Greg Arnold, DC, CSCS, January 8, 2010, abstracted from "Diet supplementation with acai (*Euterpe oleracea Mart*) pulp improves biomarkers of oxidative stress and the serum lipid profile in rats" printed online in Nutrition

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Cardiovascular diseases (CVD), including heart disease and stroke, which are the first and third leading causes of death for both men and women in the United States, account for 1 in 3 of all U.S. deaths. They are expected to cost our healthcare system \$473 billion in 2009. If all major types of cardiovascular disease were eliminated, U.S. life expectancy would increase by nearly 7 years (1).

One of the biggest factors for the onset of cardiovascular disease is the presence of high levels of Low-density lipoprotein cholesterol. Low-density lipoprotein cholesterol, when damaged by free radicals due to inadequate presence of antioxidants, are taken up by white blood cells called macrophages. These accumulate in the walls of blood vessel and form the "foam cells" that are the beginnings of atherosclerosis and cardiovascular disease.

Preventing the oxidation of low-density lipoprotein cholesterol is central to helping maintain heart and blood vessel health. So it's no surprise that high levels of antioxidant levels in the blood have been associated with a lower frequency of coronary disease (3). Now a new study in mice (4) has found that Acai, a fruit whose antioxidants are thought to be [one of the strongest scavengers of free radicals known](#) (5), can help maintain cholesterol health.

In the study, researchers fed 32 female rats either a standard diet (AIN-93 diet (6)) or a high-cholesterol diet that contained 25% soybean oil and 1% cholesterol. They then took 8 mice from each group and supplemented their diets with acai pulp (2% of total food weight) for six weeks. At the end of six weeks, the researchers obtained blood and liver samples to measure for cholesterol levels, as well as proteins markers of free radical damage that include carbonyl and sulphydryl groups.

The researchers found that carbonyl groups, whose high levels have been implicated in chronic disease such as Alzheimer's Disease, rheumatoid arthritis, and diabetes (7), were 62.5% lower in the acai-supplemented standard diet group compared to placebo (0.21 vs. 0.56 nanomoles/milligram of protein) and 30% lower in the acai-supplemented high cholesterol group compared to placebo (0.33 vs. 0.47 nmol/mg/protein). When looking at sulphydryl groups, whose levels get depleted in the presence of free radicals (8), those in the acai-supplemental standard and high-cholesterol groups had 24% more sulphydryl groups than the placebo (407.64 vs. 309.55 micromoles/Liter). The acai high cholesterol group had 38% more sulphydryl groups, compared to the non-supplemented high cholesterol groups (478.41 vs. 295.96 micromoles/Liter).

Finally, levels of total cholesterol levels were 33% lower (5.42 vs. 8.12 millimoles/Liter) in the acai-supplemented high-cholesterol group vs. the un-supplemented group. Low density lipoprotein cholesterol levels in the acai-supplemented normal and high-cholesterol groups were 44% lower (0.29 vs. 0.52 mmol/L) and 34% (5.12 vs. 7.84 mmol/L), respectively, vs. the non-supplemented groups.

For the researchers, "These results suggest that the consumption of acai improves antioxidant status and has a [cholesterol-lowering] effect in an animal model of dietary-induced hypercholesterolemia."



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