

COCOA AND CHOCOLATE: WHAT THE SCIENCE SHOWS

Inside this brochure are just a few of the hundreds of studies focusing on cocoa to highlight the convincing scientific evidence demonstrating that cocoa and chocolate can be an important component of a healthy lifestyle.

ANTIOXIDANT/OXIDATIVE STRESS

KEY BENEFITS

- Free radical damage is linked to more than 100 conditions ranging from heart disease and arthritis to dementia and diabetes
- Many of chocolate's benefits are based around its various ingredients to fight free radicals and minimize the effects of aging
- Cocoa contains twice the antioxidants of red wine and three times that of green tea
- Cocoa's ORAC score (measures antioxidants) is about 10 times that of spinach
- The cacao bean contains various antioxidant compounds, including catechins and flavanols

SCIENTIFIC SUPPORT

"Theobroma cacao L. is known to have potential cardiovascular and cancer chemopreventive activities because of its high content of phenolic phytochemicals and their antioxidant capacities."

J Agric Food Chem. 2009 Nov 2. Protective Activity of Theobroma cacao L. Phenolic Extract on AML12 and MLP29 Liver Cells by Preventing Apoptosis and Inducing Autophagy.

"Cocoa flavonoids have shown a powerful antioxidant activity providing protection against oxidation and helping prevent oxidative stress-related diseases."

J Nutr Biochem. 2009 Feb 4. Cocoa flavonoids up-regulate antioxidant enzyme activity via the ERK1/2 pathway to protect against oxidative stress-induced apoptosis in HepG2 cells.

IMMUNE FUNCTION

KEY BENEFITS

- Cocoa appears to enhance the function of specific immune cells
- Cocoa appears to have some antimicrobial properties

SCIENTIFIC SUPPORT

"Studies in this line suggest that high-dose cocoa intake in young rats favours the T helper 1 (Th1) response and increases intestinal gammadelta T lymphocyte count."

Br J Nutr. 2009 Apr;101(7):931-40. Cocoa: antioxidant and immunomodulator.

CARDIOVASCULAR HEALTH

KEY BENEFITS

- The protective effects of cocoa on the heart and vascular system are probably its most well-documented
- Cocoa's antioxidants neutralize free radicals, minimize oxidative stress and relieve inflammation
- Cocoa can stimulate the production of nitric oxide, which relaxes blood vessels
- Research shows that cocoa can improve platelet function, decrease blood clotting and control blood sugar/insulin levels

SCIENTIFIC SUPPORT

"The acute ingestion of both solid dark chocolate and liquid cocoa improved endothelial function and lowered blood pressure in overweight adults."

Am J Clin Nutr. 2008 Jul;88(1):58-63. Acute dark chocolate and cocoa ingestion and endothelial function: a randomized controlled crossover trial.

"Diets rich in flavanols reverse vascular dysfunction in diabetes, highlighting therapeutic potentials in cardiovascular disease."

J Am Coll Cardiol. 2008 Jun 3;51(22):2141-9. Sustained benefits in vascular function through flavanol-containing cocoa in medicated diabetic patients a double-masked, randomized, controlled trial.

"Dark chocolate induces coronary vasodilation, improves coronary vascular function, and decreases platelet adhesion 2 hours after consumption."

Circulation. 2007 Nov 20;116(21):2376-82. Dark chocolate improves coronary vasomotion and reduces platelet reactivity.

SPORTS/ATHLETIC PERFORMANCE

KEY BENEFITS

- Cocoa can help repair exercise-induced muscle damage, enhance energy metabolism and improve cardiovascular and lung function

SCIENTIFIC SUPPORT

"The results of this study suggest that chocolate milk is an effective recovery aid between two exhausting exercise bouts."

Int J Sport Nutr Exerc Metab. 2006 Feb;16(1):78-91. Chocolate milk as a post-exercise recovery aid.