# MOOD



### KEY BENEFITS

- Chocolate positively improves blood flow to the brain, thereby affecting mental function, cognition and mood
- Several chemicals in cocoa enhance mood, decrease depression and moderate emotional response

## SCIENTIFIC SUPPORT

"In this socioeconomically homogenous male cohort, chocolate preference in old age was associated with better health, optimism and better psychological well-being."

Eur J Clin Nutr. 2008 Feb;62(2):247-53. Chocolate, well-being and health among elderly men.



### **KEY BENEFITS**

- Numerous studies indicate that dark chocolate has a very favorable effect on blood sugar levels and the symptoms of diabetes
- Cocoa polyphenols protect blood vessels from scarring by excess glucose and insulin
- Minimizes symptoms of neuropathy
- Protects from cardiovascular symptoms related to blood-glucose abnormalities

# SCIENTIFIC SUPPORT

"Dietary supplementation with [cocoa] can dose-dependently prevent the development of hyperglycemia . . . The dietary intake of food or drinks produced from cacao beans might be beneficial in preventing the onset of type 2 diabetes mellitus."

Nutrition. 2007 Apr;23(4):351-5. Dietary supplementation with cacao liquor proanthocyanidins prevents elevation of blood glucose levels in diabetic obese mice.



### KEY BENEFITS

- Cholesterol is implicated in various forms of cardiovascular disease and stroke
- · Cocoa can minimize the oxidation of harmful cholesterol
- Cocoa appears to slow the absorption of cholesterol in the intestinal tract

## SCIENTIFIC SUPPORT

"Results indicate that regular consumption of chocolate as part of a low-fat diet may support cardiovascular health by lowering cholesterol and improving blood pressure."

J Nutr. 2008 Apr;138(4):725-31. Daily consumption of a dark chocolate containing flavanols and added sterol esters affects cardiovascular risk factors in a normotensive population with elevated cholesterol.

# INFLAMMATION

### **KEY BENEFITS**

- A growing body of research associates chronic inflammation with a number of diseases
- Cocoa flavanols inhibit activity of inflammation messengers such as leukotrienes
- Flavonoids are inhibitors of the COX-1 and COX-2 enzymes, which contribute to inflammation

#### SCIENTIFIC SUPPORT

"Epicatechin or other flavonoids [in cocoa] were found to suppress lipid peroxidation in LDL induced by [the proinflammatory enzyme] myeloperoxidase."

Am J Clin Nutr. 2005 Jan;81(1 Suppl):304S-312S. Cocoa polyphenols and inflammatory mediators.

"In a combination of in vivo and in vitro studies, we and others have observed that cocoa can be an anti-inflammatory modulator."

J Med Food. 2009 Feb;12(1):1-7. Cocoa flavanols and procyanidins can modulate the lipopolysaccharide activation of polymorphonuclear cells in vitro.

"Our findings suggest that regular consumption of small doses of dark chocolate may reduce inflammation."

J Nutr. 2008 Oct;138(10):1939-45. Regular consumption of dark chocolate is associated with low serum concentrations of C-reactive protein in a healthy Italian population.

# CANCER/CELL PROTECTION

### **KEY BENEFITS**

- Recent years have revealed the potential of chocolate's primary compounds to protect the cell and fight cancer
- Cocoa's primary nutrients help minimize damage to cell DNA
- Cocoa's primary nutrients stimulate the activity of detoxification enzymes and induce apoptosis (death) of problematic cells
- Cocoa decreases inflammation, a key contributor to cancer formation

### SCIENTIFIC SUPPORT

"Due to their high concentration of catechins and procyanidins, cocoa and chocolate products may have beneficial health effects against oxidative stress and chronic inflammation, risk factors for cancer."

Nutr Cancer. 2009;61(5):573-9. Cancer protective properties of cocoa: a review of the epidemiologic evidence.

"A significant reduction in the incidence of prostate tumors was also observed . . . In conclusion, [cocoa] protected from prostate carcinogenesis."

Eur J Cancer Prev. 2008 Feb;17(1):54-61. Protective effect of Acticoa powder, a cocoa polyphenolic extract, on prostate carcinogenesis in Wistar-Unilever rats.