The following are prominent universities and research institutions that have funded independent research on cacao, cocoa and chocolate:

- Heinrich-Heine-University, Duesseldorf,
-感觉

Dozens of studies demonstrate that cacao, cocoa and high-quality dark chocolate foods can support human health in a variety of ways. The following are just a few of the dozens of scientific journals that have published research on the health benefits of cacao, cocoa and chocolate:

- American Journal of Clinical Nutrition
- British Journal of Medicine
- Journal of Nutrition
- Journal of Cardiovascular Pharmacology
- Journal of Nutrition, Health & Aging
- American Journal of Hypertension
- Prostaglandins, Leukotrienes and Essential Fatty Acids
- Journal of Oral Health

"If these observations [regarding cocoa epicatechin] predict the future, then we can say without blushing that they are among the most important observations in the history of medicine. . . . Epicatechin could potentially get rid of 4 of the 5 most common diseases in the western world. How important does that make epicatechin? I would say very important."

-Norman Hollenberg, PhD, MD, Harvard University

No less interesting, a current research report in the Journal of Oral Health suggests that epicatechin can interfere with the activity of some oral bacteria. Furthermore, it may have some effect on the growth of human prostate cancer and normal cells.

-Nemecz, G.  The Health Benefits of Dark Chocolate  US Pharmacist 29:2

**Additional References**

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 evidence showing 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 potentiating 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

SCIENTIFIC SUPPORT
• The cacao bean contains various antioxidant compounds, including catechins and flavanols
• Cocoa’s primary nutrients stimulate the activity of primary compounds to protect the cell and fight cancer
• Numerous studies indicate that dark chocolate has a highly favorable effect on blood health and blood pressure in a normotensive population with elevated cholesterol

SPORTS/ATHLETIC PERFORMANCE

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

SCIENTIFIC SUPPORT
• Studies have suggested that high-dose cocoa intake in young rats favours the T helper 1 (Th1) response and decreases apoptosis in HepG2 cells.

KEY BENEFITS
• Numerous studies indicate that dark chocolate has a highly favorable effect on blood health and blood pressure in a normotensive population with elevated cholesterol

SCIENTIFIC SUPPORT
• “Our findings suggest that regular consumption of chocolate milk can prevent high-fat diet-induced obesity by regulating the expression of genes for fatty acid metabolism.

SCIENTIFIC SUPPORT
• “Ingested cocoa can prevent high-fat diet-induced obesity by regulating the expression of genes for fatty acid metabolism.

SCIENTIFIC SUPPORT
• Cocoa polyphenols minimize free radical damage and inflammation which contributes to heart disease and diabetes.

SKIN

KEY BENEFITS
• Cocoa polyphenols protect skin from UV radiation
• These polyphenols likely minimize inflammation in skin tissue

SCIENTIFIC SUPPORT
• “Our study demonstrated that regular consumption of a chocolate snack rich in polyphenolic compounds significantly protects skin and can be an effective at protecting human skin from UV damage.

SCIENTIFIC SUPPORT
• “Cocoa polyphenols protect skin from UV radiation and sunburn, and protect against photocarcinogenesis.

CARDIOVASCULAR HEALTH

KEY BENEFITS
• The protective effects of cocoa on the heart and blood vessels are probably linked to its antioxidant and anti-inflammatory properties
• Cocoa’s antioxidants neutralize free radicals, minimize oxidative stress and reduce inflammation

SCIENTIFIC SUPPORT
• “Ingestion of proanthocyanidins from cocoa procyanidins has been shown to reduce cardiac oxidative stress in mice and rats.

KEY BENEFITS
• Numerous studies indicate that dark chocolate has a highly favorable effect on blood health and blood pressure in a normotensive population with elevated cholesterol

SCIENTIFIC SUPPORT
• “Our findings suggest that regular consumption of chocolate milk can prevent high-fat diet-induced obesity by regulating the expression of genes for fatty acid metabolism.

SCIENTIFIC SUPPORT
• “Ingested cocoa can prevent high-fat diet-induced obesity by regulating the expression of genes for fatty acid metabolism.

SCIENTIFIC SUPPORT
• Cocoa polyphenols protect skin from UV radiation and sunburn, and protect against photocarcinogenesis.

SCIENTIFIC SUPPORT
• “Cocoa polyphenols protect skin from UV radiation and sunburn, and protect against photocarcinogenesis.

CANCER/CELL PROTECTION

KEY BENEFITS
• Recent years have revealed the potential of chocolate’s primary antioxidants to protect the cell and fight cancer
• Cocoa’s primary antioxidants help minimize damage to cell DNA
• Cocoa’s primary antioxidants minimize the activity of DNA-damaging enzymes and induce apoptosis (death) of problematic cells
• Cocoa decreases inflammation, a key contributor to cancer formation

SCIENTIFIC SUPPORT
• “Our findings suggest that regular consumption of chocolate milk can prevent high-fat diet-induced obesity by regulating the expression of genes for fatty acid metabolism.

SCIENTIFIC SUPPORT
• “Ingested cocoa can prevent high-fat diet-induced obesity by regulating the expression of genes for fatty acid metabolism.

SCIENTIFIC SUPPORT
• “Our findings suggest that regular consumption of chocolate milk can prevent high-fat diet-induced obesity by regulating the expression of genes for fatty acid metabolism.

DEMENTIA

KEY BENEFITS
• Obesity is a huge and growing problem in the United States
• Cocoa may regulate genes that control weight gain
• It also appears to suppress appetite and stabilize blood sugar levels
• Cocoa may influence brain chemicals to reduce cravings

SCIENTIFIC SUPPORT
• “Ingestion of proanthocyanidins derived from cacao inhibits diabetes-induced cataract formation possibly by virtue of its antioxidant activity.

SCIENTIFIC SUPPORT
• “The prospect of increasing cerebral perfusion [blood flow] with cocoa flavanols is extremely promising.

SCIENTIFIC SUPPORT
• “The prospect of increasing cerebral perfusion [blood flow] with cocoa flavanols is extremely promising.

VISUAL/EYE HEALTH

KEY BENEFITS
• Cocoa’s antioxidants protect the eye’s sensitive tissue and nerves
• Cocoa’s antioxidant properties protect the eye’s sensitive tissue and nerves
• Cocoa polyphenols protect skin from UV radiation and sunburn, and protect against photocarcinogenesis.

SCIENTIFIC SUPPORT
• “Cocoa’s antioxidants protect the eye’s sensitive tissue and nerves

MOOD

KEY BENEFITS
• Cocoa polyphenols significantly reduce depression and moderate emotional response
• Obesity is a huge and growing problem in the United States
• Cocoa may influence brain chemicals to reduce cravings

SCIENTIFIC SUPPORT
• “The prospect of increasing cerebral perfusion [blood flow] with cocoa flavanols is extremely promising.

SCIENTIFIC SUPPORT
• “The prospect of increasing cerebral perfusion [blood flow] with cocoa flavanols is extremely promising.

IMMUNE FUNCTION

KEY BENEFITS
• Cocoa enhances the function of specific immune cells
• Cocoa therefore has apparent immune system benefits

SCIENTIFIC SUPPORT
• “Our findings suggest that high-dose cocoa intake in young rats favour the T helper 1 (Th1) response and increases (normalizes genetically mediated) lymphocyte count.

SCIENTIFIC SUPPORT
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WEIGHT CONTROL

KEY BENEFITS
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SCIENTIFIC SUPPORT
• “The prospect of increasing cerebral perfusion [blood flow] with cocoa flavanols is extremely promising.

BRAIN/STROKE

KEY BENEFITS
• The antioxidants in cocoa protect brain cells, block vessels and tissue
• Cocoa improves blood flow to the brain for improved cognitive performance

SCIENTIFIC SUPPORT
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SCIENTIFIC SUPPORT
• “Ingested cocoa can prevent high-fat diet-induced obesity by regulating the expression of genes for fatty acid metabolism.

SCIENTIFIC SUPPORT
• “Ingested cocoa can prevent high-fat diet-induced obesity by regulating the expression of genes for fatty acid metabolism.

INFLAMMATION

KEY BENEFITS
• Cocoa polyphenols significantly reduce inflammation with a number of diseases
• Cocoa polyphenols exhibit activity of inflammation (messengers such as leukotrienes)
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SCIENTIFIC SUPPORT
• “Our findings suggest that regular consumption of chocolate milk can prevent high-fat diet-induced obesity by regulating the expression of genes for fatty acid metabolism.

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ORAL HEALTH

KEY BENEFITS
• Cocoa polyphenols minimize free radical damage and inflammation which contribute to oral health
• Cocoa polyphenols minimize free radical damage and inflammation which contribute to oral health
• Cocoa polyphenols minimize free radical damage and inflammation which contribute to oral health

SCIENTIFIC SUPPORT
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