



THE SCIENCE OF CACAOFRUIT

Composed of almost 20,000 different types of molecules, **the seed of the cacao fruit**, also known as the cocoa bean, is one of **the most complex food substances on earth**. More than 200 chemical compounds have been identified in the cacao fruit seed, and most of them are stored in the vacuoles of the "polyphenolic cells". Approximately 60% of the total polyphenol content in unfermented cacao fruit seeds corresponds to cacao fruit flavanols.

The health effects of cacao fruit flavanols have been studied for decades to find sound scientific proof of their benefits on human health and wellness.

15+ years of Scientific Research and 100+ Human Clinical Studies ran in many countries worldwide on the health and wellbeing effect of cacao fruit flavanols have provided this proof and have been approved by the **European Food Safety Authority** as follows:

'Cacao fruit flavanols help maintain the elasticity of blood vessels which contributes to normal blood flow'*

Vascular function can be measured in healthy people with an ultrasound technique that shows the percentage increase in blood vessel diameter following the release of a cuff which was placed around the arm. The percentage flow-mediated dilation (FMD) is a well known biomarker for the elasticity of the blood vessel wall.

Research has confirmed a negative correlation between age, unhealthy lifestyle-related factors and FMD. It has been shown that with increasing age, smoking, or being under stress, FMD is impaired. Therefore, FMD may well be one of the most important determinants of the relationship between aging and cardiovascular risk.

Through enabling a normal blood flow, **cacao fruit flavanols support cardiovascular health and overall well-being as well as building the foundations of a healthy lifestyle.**

* minimum 200 mg cacao fruit flavanols

BENEFITS RESULTING FROM AN IMPROVED BLOOD FLOW

The better the blood flow, the better the blood acts as a provider to the organs, which leads to more efficient working function of the organs.



Cardiovascular Health: Eating with Heart

High blood pressure and high cholesterol are known as “silent killers”, causing damage to blood vessels and increasing the risk of stroke or other cardiovascular disease. Cacaofruit flavanols may play a role in cardiovascular protection.

Cacaofruit flavanol effects on Cardiovascular Health following the daily intake of minimum 220 mg of cacaofruit flavanols

Blood Pressure after 1 week

- Lowered blood pressure

Blood Cholesterol level after 4 weeks

- LDL cholesterol decrease with +/-15 mg/dl
- HDL cholesterol increase with +/-3 mg/dl
- Total cholesterol decrease with +/-12 mg/dl



Brain Health: Mindful Eating

Cognitive health is about how the brain works, including the ability to learn new things, intuition, language and memory — all abilities that slow down with age. Lifestyle improvements, such as better diet and exercise can improve cognitive abilities and brain health across the human lifespan, and slow or prevent the progressive cognitive decline. Bioactive substances such as cacaofruit flavanols enable the brain to perform at its best.

Daily cacaofruit flavanol intake

Instant Impact

Long term impact

250 mg

Alertness & Speed Reaction:

- Lower mental fatigue
- Faster reaction time

Improved Blood Flow In Active Brain Regions:

- Positive effect on blood oxygenation and an increase in blood flow in active brain regions after 5 days of daily intake.

350 mg

Better Focus And Accuracy:

- Better (faster) visual search efficiency without losing accuracy
- Increase in blood flow across some regions* of the brain

*particularly in the anterior cingulate cortex and the central opercular cortex of the parietal lobe.

Improved Mental Health And Working Memory:

- Enhanced positive mood state: (self-rated) calmness and contentedness after 30 days of daily intake.
- Increased neural efficiency in spatial working memory after 30 days of daily intake.

600 mg

Improved attention and verbal episodic memory (based on modified Stroop test)



Skin Health: The Beauty from Within

As flavanols exert antioxidant, anti-inflammatory and anti-DNA-damaging effects that may enhance the skin's microcirculation, regular cacaofruit flavanol consumption can have positive effects on facial appearance including wrinkles, hydration, elasticity and photosensitivity. Cacaofruit flavanol supplementation may contribute to the prevention of the progression of photo-aging.

Daily cacaofruit flavanol intake

Instant Impact

Long term impact

350 mg

Improved blood flow across the skin.

After 3 months of daily intake:

- Protection against UV induced reddening

After 6 months of daily intake:

- Positive impact on facial wrinkles
- Improved skin elasticity

600 mg

Improved skin elasticity



Muscle Performance and Recovery

Sports is segmented in 3 phases: preparation, performance and recovery. Flavanols play an important role in the performance and recovery phases.

Performance: To improve one's performance, energy is required. Through better transport of sugar/glucose in blood and better draining of the lactic acids, the performance and endurance of the muscles will increase.

Recovery: Having too much lactic acid in the muscles may cause cramps. A better blood flow helps drain these lactic acids more efficiently and therefore helps prevent cramps. A better blood flow also helps to restore storage and repair the muscles.

Daily cacaofruit flavanol intake

Instant Impact

7 days impact

350 mg

Improved vascular function on the muscles.

600 mg

Vasodilatory effects of flavanols may contribute to improved delivery of blood.

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