

**For elastic
Blood vessels***

Cardio Care Dr. Wolz

Cardio Care from Dr. Wolz contains a high standardised content of cocoa flavanols to support vascular health* and thus blood flow.

- To support healthy blood circulation*
- For risk factors that are often associated with endothelial dysfunction such as arteriosclerosis, diabetes type II, hypertension, smoking, obesity, stress
- For endurance athletes

Natural active ingredient for healthy blood circulation*

Cardio Care contains a high standardised content of cocoa flavanols to support vascular health*. The European Food Safety Authority (EFSA) has recommended the following health claim for cocoa flavanols: „Cocoa flavanols promote the elasticity of the blood vessels, which contributes to normal blood flow“.

The cocoa flavanols contained in Cardio Care regenerate the function of the endothelium by inducing an increase in nitric oxide (NO) from the endothelium into the blood. As a result it dilates the blood vessels and improves the blood circulation. NO relaxes the smooth muscles of the vessels. This means that cocoa flavanols improve the blood flow in patients with endothelial dysfunction - e.g. diabetes type II or patients with arteriosclerosis. Also the pressure can also be improved by the regeneration of endothelial function, because the increased release of the vessels are dilated by the increased release of NO.



Cocoa flavanols for Vascular elasticity*

COCOA FLAVANOLS AND CARDIOVASCULAR HEALTH

According to the German Nutrition Society (DGE), flavonoids are associated with a reduction in the risk of cardiovascular diseases. Dark chocolate in particular has been the subject of many studies. The proportion of flavonoids belonging to the group of flavanols is particularly high here. The flavanol epicatechin which, according to a Harvard study, has a significant positive effect on cardiovascular health.¹

By improving endothelial or vascular health, better blood flow can be achieved, which not only supports but is of particular importance for cardiovascular health. Healthy blood flow is important for the transport of oxygen and nutrients, especially in the capillary flow area, and for organ functions. Healthy blood circulation and good endothelial function reduce plaque formation and improve cognitive performance. The better the blood, the more efficient the removal of metabolic waste products, the higher the energy turnover and the shorter the recovery time from injury.^{2, 3, 4}

THE THERAPEUTIC USE OF COCOA

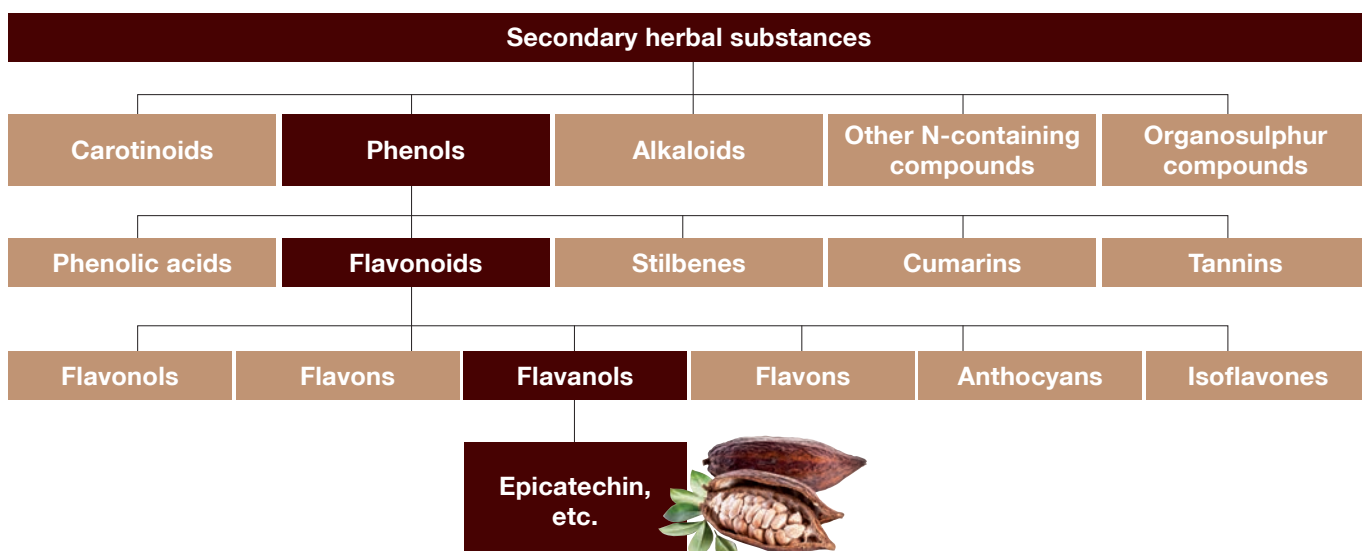
However, the recommendation to consume cocoa drinks or chocolate is not recommended for large patient groups (diabetic patients, patients with metabolic

syndrome) due to the high sugar content and the high energy of approximately 500 kcal/100 g: The consumption of one bar of chocolate a day would lead to a weight gain of about 1 kg in 14 days! The consumption of dark chocolate is better because of its high flavanol content. However, due to the technological processing of the cocoa (fermentation, drying and roasting), the valuable flavanols are removed from the cocoa powder. Therefore the content in the various chocolates varies greatly. In addition the flavanol content varies depending on the origin of the cocoa. Due to the different climatic conditions, the cocoa content declared on chocolates and cocoa beverages must not be equated with the flavanol content.

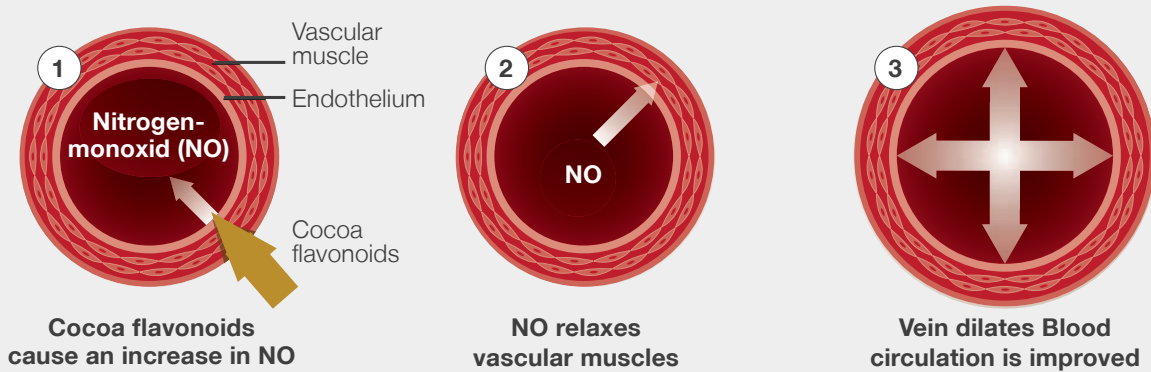
In addition, the effect of the flavanols can be impaired by the simultaneous consumption of other foods (e.g. milk). A standardised administration of cocoa flavanols is not possible. In addition, several studies clearly indicate that the protective effect on the endothelium is significantly better with sugar-free cocoa than with regular cocoa.⁵

CARDIO CARE: HIGH QUALITY COCOA FLAVANOLS

Cardio Care was developed in order to be able to use the cocoa flavanols in a targeted manner. The natural, concentrated cocoa powder used in Cardio Care is a new, special process that makes it possible to obtain



Effect of Cardio Care Dr. Wolz



very high flavanols in the cocoa powder: In Cardio Care 80% of the flavanols remain in the raw cocoa, which are mainly destroyed by conventional production methods. In addition, the necessary degree of polymerisation is guaranteed. Because only with this characterisation, the preparation is effective and is not affected by mixing it with milk. Cardio Care contains a standardised cocoa powder with 200 mg flavanols per daily dose.

MODE OF ACTION: REGENERATION OF THE ENDOTHELIUM

The cardiovascular protective effect of flavanols is based on the endothelium, i.e. the cell layer on the inside of the of the blood vessels. This synthesises various messenger substances which, determine the blood pressure by widening or by dilating or contracting the vessels. The importance of the endothelial system is made clear by the large area of 4000 to 7000 m², which comes into contact with the blood. Dysfunction of the endothelium is typical of early arteriosclerosis and thus for most cardio - vascular risk factors. In the presence of endothelial dysfunction, less nitric oxide (NO) can be released into the vessels (reduced vascular bioavailability of NO). However, NO is necessary for the vascularisation and thus for the the ability of the vessels to transport as much oxygen and nutrients as possible to the organs. In addition Endothelial dysfunction is also characterised by increased formation of free oxygen radicals and increased production of vasoconstrictors such as angiotensin II and endothelin⁶ - endothelial dysfunction is thus the beginning of arteriosclerosis.⁶

The cocoa flavanols contained in Cardio Care regenerate endothelial function by inducing an

increase of NO from the endothelium into the blood. This dilates the blood vessels and improves blood flow and circulation. NO relaxes the smooth muscles of the vessels. This means that cacao flavanols improve the function of the vessels in patients with endothelial function. In addition, a clinical study showed that cocoa flavanols also improve vascular elasticity via the proliferation of so-called endothelial progenitor cells (EPC). These cells have the ability to differentiate into endothelial cells, and thus make a further contribution to the cardiovascular protective function of the cocoa flavanols.⁷ The positive effect on the endothelium is not only short-term: regular intake also has a positive effect on endothelial function.

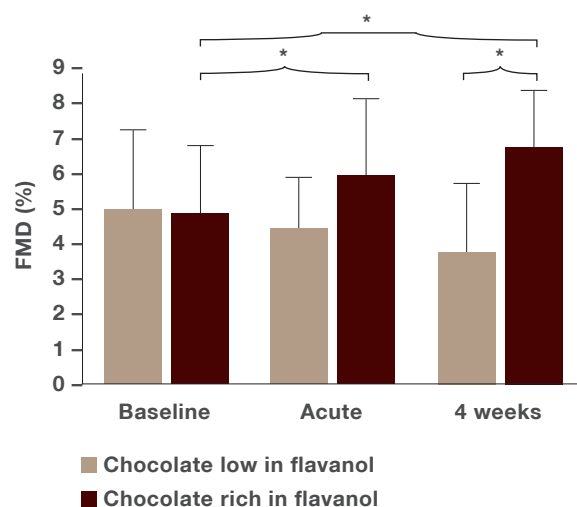


Fig. 3: acute (2 hours) and chronic effect (4 weeks) of consuming a chocolate rich or low in flavanol on endothelial function, measured as flow-dependent vasodilatation (FMD) * p < 0.05. (modified according to [8]).

10 good reasons for Cardio Care Dr. Wolz

- 1 Per daily dose 200 mg natural, standardised, therapeutic-grade cocoa flavanols.
- 2 Direct effect on vascular endothelium - for vascular health and healthy blood flow.
- 3 Effect confirmed by gold standard studies
- 4 Officially recognised by the European Food Safety Authority's Health Claim EFSA
- 5 Manufacturing process preserves 80% of the cocoa flavanols normally destroyed in the cocoa manufacturing process.
- 6 Allows cocoa to be given without caloric load
- 7 No side effects
- 8 Necessary degree of polymerisation is ensured, i.e. cocoa flavanols remain intact even after being mixed with other foods (e.g. milk).
- 9 Vegan and without questionable additives and fillers such as magnesium stearate or titanium dioxide
- 10 Constant monitoring for residues by independent laboratories



QUALITY PROMISE FROM DR. WOLZ

For us quality calls for a careful choice of raw materials, rolling analyses of residue, a certified production process and efficacy being checked by independent research establishments.

* The cocoa flavanols in Cardio Care Dr. Wolz promote blood vessel elasticity, thus contributing to normal blood flow. ¹ Schroeter H et al.: (-)-Epicatechin mediates beneficial effects of flavanol-rich cocoa on vascular function in humans. Proc Natl Acad Sci U S A. 2006 Jan 24;103(4):1024-9. Epub 2006 Jan 17. ² Janszky I, Mukamal KJ, Ljung R et al. Chocolate consumption and mortality following a first acute myocardial infarction: the Stockholm Heart Epidemiology Program. J Intern Med, 2009. 266 (3): 248-257. ³ Buijsse B, Weikert C, Drogan D et al. Chocolate consumption in relation to blood pressure and risk of cardiovascular disease in German adults. Eur Heart J, 2010. 31 (13): 1616-1623. ⁴ Djousse L, Hopkins PN, North KE et al. Chocolate consumption is inversely associated with prevalent coronary heart disease: the National Heart, Lung, and Blood Institute Family Heart Study. Clin Nutr. 2008 Jul;88(1):58-63. ⁵ Faridi Z et al.: Acute dark chocolate and cocoa ingestion and endothelial function: a randomized controlled crossover trial. Am J Clin Nutr. 2008 Jul;88(1):58-63. ⁶ Sudano I, Roas S, Noll G. Vascular abnormalities in essential hypertension. Curr Pharm Des, 2011. 17(28): p. 3039-44. ⁷ Heiss C, Jahn S, Taylor M et al. Improvement of endothelial function with dietary flavanols is associated with mobilization of circulating angiogenic cells in patients with coronary artery disease. J Am Coll Cardiol, 2010. 56 (3): 218-224. ⁸ Flammer AJ, Sudano I, Wolfrum M et al. Cardiovascular effects of flavanol-rich chocolate in patients with heart failure. Cardio Eur Heart J, 2012. 33 (17): 2172-2780.

Cocoa flavanols in high quality

CONSUMPTION RECOMMENDATION

The beneficial effect is achieved when 2 capsules (containing 200 mg of cocoa flavanols) per day with a drink. For certain indications with a significantly increased cardiovascular risk, a higher dose of up to 4 capsules is recommended.

NOTES

Side effects and interactions are not known. Suitable for diabetics. 1 daily portion of 2 capsules contains:

Active ingredient	100 g	2 capsules
Cocoa flavanols	22,3 g	200 mg

NOTE ON THE RECOMMENDATION

Because of its effect on vascular elasticity and healthy blood flow, Cardio Care is recommended for all groups of people who need to maintain a healthy blood flow, such as:

Elderly people. People with cardiovascular diseases. Type II diabetics. Hypertensives. People with arteriosclerosis and other vascular diseases (PAVK). Smokers. Obese people. Persons with increased stress. Endurance athletes.



Gluten free and free
from Gelatine, lactose,
Fructose and colourings



Literature

We have compiled an extensive list of literature and studies for you.
Do not hesitate to request them from us: info@wolz.com

Questions? Questions!



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