

MARS Center for Cocoa Health Science

MARS Center for Cocoa Health Science is based at University of California – Davis Campus (which is near Sacramento). Ronald Krauss, one of the authors of Astrup’s 2019 paper *WHO draft guidelines on dietary saturated and trans fatty acids: time for a new approach?* ¹ is based at University of California – San Francisco campus.

MARS has contributed \$40 million to fund the institute.

Mars and the University of California, Davis have a long history of collaborative cocoa flavanol research dating back to the 1990s. ²

Between 2000 and 2021, the MARS institute has produced 157 articles extolling the benefits of chocolate and cocoa. ³

Since raw cocoa is bitter and distasteful to most people, manufacturers add sweeteners, oils and dairy to ensure it is palatable.

MARS acknowledged “there is a risk its cocoa research could lead to confusion about chocolate’s health benefits.”

That is the intention.

According to MARS, “chocolate should not be considered a health food. Chocolate is a treat and should be enjoyed as such, and in moderation.” ⁴

“Everyone knows” that chocolate is really healthy and good for you based on research such as this.

Effect of Lipids on Endothelial Function

All fats damage the endothelial lining of the arteries – cells cannot produce nitric oxide which ensures that arteries remain dilated. This is why people use nitroglycerin patches.

A 2015 journal article titled *Cocoa flavanol intake improves endothelial function*, ⁵ explores the benefits of cocoa flavanol supplements. Improved endothelial function improves arterial blood flow. At the end of the one month trial performed on low-risk, healthy individuals taking

cocoa supplements, resulted in an increase in blood flow by an average of 1.2%.

This really is not a very impressive result.

The co-author Hagen Schroeter was employed by MARS Inc., is a member of the Flaviola research consortium and a company engaged in flavanol research and flavanol-related commercial activities.

Flow-mediated brachial artery vasoactivity is a sensitive, nitric oxide-dependent index of endothelial function. This study compared to the effect of a single high-fat meal (Sausage and Egg McMuffin with 50 g fat) on the arterial blood flow compared to a meal that had no fat.⁶

Brachial artery vasoactivity was measured hourly for 6 hours after eating the above meals. Each hour, a baseline measurement was taken. Another was taken 1 minute after the release of 5 minutes pressure of a blood pressure cuff on the upper arm. The percentage change is the measure of flow-mediated vasoactivity.

Before the high-fat meal, the measurement was 21%. The vasoactivity decreased at 2, 3 and 4 hours to 11%, 11% and 10%. It takes about 6 hours to recover a normal flow rate in the artery - which is not enough time to fully recover before your next high-fat meal.

With the low-fat meal, the measurement prior to the meal was 18% with the 2, 3 and hour measurements all being 17%.

Meal	Before	1 hour	2 hours	3 hours	4 hours	5 hours	6 hours
High fat	21%	15%	11%	11%	10%	13%	15%
Low fat	18%	18%	17%	17%	17%	17%	16%

According to the study,

These results demonstrate that a single high-fat meal transiently impairs endothelial function. These findings identify a potential process by which a high-fat diet may be atherogenic independent of induced changes in cholesterol.

What impact is expensive cocoa supplementation going to have in overcoming the effects of this single high-fat meal? To claim that cocoa flavanols improves endothelial function is being imaginative.

High levels of blood glucose also causes an acute but transient decrease in blood flow caused by a reduction in endothelial function.⁷

The “oral glucose loading” was 75g (15 teaspoons). These findings do NOT suggest that drizzling maple syrup over your pancakes is causing any harm.

Footnotes

1. Astrup, A. et al. (2019) WHO draft guidelines on dietary saturated and trans fatty acids: time for a new approach? *BMJ*. 366 (366), 14137.
2. MARS Center for Cocoa Health Science. (n.d.). University of California, Davis | Mars Center For Cocoa Health Science. Retrieved August 6, 2019, from <https://www.marscocoascience.com/research/partnership/ucdavis>
3. MARS Center for Cocoa Health Science. (n.d.). Published Research | Mars Center For Cocoa Health Science. Retrieved August 6, 2019, from <https://www.marscocoascience.com/publications>
4. Neiburg, O. (2018, January 19). Mars defends flavanol research: ‘Chocolate should not be considered a health food.’ Retrieved September 24, 2019, from Mars defends flavanol research: ‘Chocolate should not be considered a health food’ website: <https://www.confectionerynews.com/Article/2018/01/17/Mars-defends-flavanol-research-Chocolate-should-not-be-considered-a-health-food>
5. Sansone, R. et al. (2015) Cocoa flavanol intake improves endothelial function and Framingham Risk Score in healthy men and women: a randomised, controlled, double-masked trial: the Flaviola Health Study. *British Journal of Nutrition*. 114 (8), 1246–1255.
6. Vogel, R. A. et al. (1997) Effect of a Single High-Fat Meal on Endothelial Function in Healthy Subjects. *American Journal of Cardiology*. 79 (3), 350–354.
7. Title, L. M. et al. (2000) Oral glucose loading acutely attenuates endothelium-dependent vasodilation in healthy adults without diabetes: an effect prevented by vitamins C and E. *Journal of the American College of Cardiology*. 36 (7), 2185–2191.