

The Importance Of Metabolism In Understanding Health Benefits Of Cocoa Flavanols

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A comprehensive investigation of flavanol absorption and metabolism has provided a critical step forward in our understanding of how cocoa flavanols work in the body to exert their circulatory and cardiovascular benefits. Through the development of improved analytical methods, this recent work provides detailed insights into the extensive metabolism of flavanols, which calls into question the reliability of in vitro studies using un-metabolized materials. This collaborative research was conducted by an international team of scientists from Mars, Incorporated, the University of California, Davis (US) and the University of Reading (UK).

Increasing scientific evidence indicates that (-)-epicatechin, the main flavanol in cocoa, can have a positive impact on the circulatory and cardiovascular systems. Absorption and metabolism, however, play a key role in determining the exact effect food constituents and nutrients such as (-)-epicatechin have in the body. Following absorption, nutrients are metabolized - transforming them into new compounds that are different from those originally present in food. As metabolic transformation has a significant impact on how nutrients support healthy functions, investigating this process is critical to furthering our understanding of exactly how cocoa flavanols are linked to health benefits.

While the metabolism of flavanols has been established in previous studies, the development and validation of improved analytical methods in this research enabled a far more detailed assessment than previously possible. As a result, this study was able to clearly and reliably demonstrate the extensive metabolism of (-)-epicatechin following consumption of a flavanol-containing cocoa drink. As in vitro studies using un-metabolized cocoa flavanols do not take this metabolism into account, they are not able to accurately reflect what is happening in the body. For example, early findings looking at flavanols in a test tube suggested that they exerted their benefits through an antioxidant mechanism. However, this latest research adds to a growing body of evidence challenging this notion and indicating that - when examined in the body - flavanols' cardiovascular benefits are in fact independent of any antioxidant properties.

Commenting on the impact of this work for future research in the field, Dr. Hagen Schroeter - study author and director of fundamental health and nutrition research at Mars, Incorporated - stated: "By significantly advancing our understanding of the absorption and metabolism of cocoa flavanols, this research helps to address existing disagreement in this area and sets a new standard in flavanol analytics that will improve the scientific tools available. Furthermore, this work again calls into question the validity of in vitro research that does not take into account the extensive metabolism of compounds like (-)-epicatechin."

"The study provides a critical step towards a more complete understanding of flavanols and their benefits and, ultimately, towards the translation of this knowledge into innovative flavanol-rich food products and concrete health recommendations," added Dr. Schroeter.