

The effect of caffeine on carbohydrate and protein digestion

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Caffeine is a natural compound found in coffee, tea and cocoa. It is a central nervous system stimulant and is probably the world's most widely consumed psychoactive drug. While the ingestion of caffeine was previously considered to have the potential for causing harmful effects, recent studies have provided evidence of several health benefits.

The effect of caffeine on the digestive system is still not clear. For example, recent studies suggest that caffeine alters salivary alpha amylase activity, but the results are contradictory. Other studies report that caffeine interacts with trypsin to form a caffeine-trypsin complex. However, the significance of this finding is unclear.

The aim of this study was to further investigate *in vitro* the effects of caffeine on the activity of alpha amylase, and of trypsin, using a spectrophotometric method. Starch and BSA (Bovine Serum Albumin) solutions were used as substrates to investigate alpha amylase and trypsin *in-vitro* degradation, respectively.

It was found that caffeine significantly inhibited both alpha amylase and trypsin activity in a dose-dependent manner.

We postulate that the inhibition of alpha amylase caused by caffeine may reduce the level of various sugars in the small intestine, thereby reducing the amount of glucose that is absorbed into the bloodstream. This may be beneficial in, for example, diabetic or obese individuals.

Our findings also suggest that caffeine administration may reduce amino absorption from the gastro-intestinal tract. The significance of this effect is unclear.

Biography

Irit Rutman Halili completed her PhD at the age of 36 years at Bar-Ilan University, Israel. She is a senior lecturer at the Department of Science Education of the Hemdat Hadarom Academic College of Education, Israel and also a director of research cooperation between the Katif Research Centre and the college. She has published her research findings in publications in a variety of research disciplines.

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