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# The bioavailability of a green coffee bean containing product

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**Background & Aim:** Caffeine is the most utilized psychoactive drug in the United States of America and is commonly used to enhance athletic performance. An additional psychomotor agent recently explored is chlorogenic acid. One novel caffeine and chlorogenic acid containing substance is 'whole green coffee powder' (GoBean/WGCP). The first step to examining the efficacy of a supplement is to determine if it is bioavailable for the substances it is purported to contain. The purpose of this pilot study was to examine the bioavailability of caffeine and chlorogenic acid in WGCP both before and following 7 days of supplementation.

**Methods:** A pilot pharmacokinetics, trial was conducted on three individuals before and after a 7 day loading period. On day one college aged subjects were given one serving (1645 mg) of WGCP on an empty stomach. Blood draws were taken at 0, 30, 1, 2, 3, 4, 5, 6, 7 and 8 hours post ingestion. Following the acute trial, subjects loaded the supplement (1 serving, 2x per day) for 7 days. The procedures were then repeated on Day 8. Analysis included caffeine and chlorogenic acid concentrations in serum. A repeated measures analysis of variance was used to determine differences between baseline and post supplementation.

**Results:** Caffeine significantly increased from baseline (0.63 ug per ml) to all points measured up to 6 hours on day one (with a range 2.2 to 4.23 ug/ml). Similarly chlorogenic acid increased from baseline (0.18 ng/ml) to all time points through 5 hours (ranging from 0.59 to 2.76 ng/ml), returning to baseline thereafter. Caffeine was significantly elevated at baseline on day 8 (3.07 ug/ml) compared to day one and increased after supplementation on that day from 30 minutes to 4 hours post supplementation (ranging from 4.5 to 6.4 ug/ml). Chlorogenic acid levels were not different on days 1 and 8. However, on day 8 chlorogenic acid levels rose from baseline (0.15 ug/ml) to 30 minutes (1.71 ng/ml) and 1 hour (1.25 ng/ml) post supplementation.

**Conclusions:** Whole green coffee powder was bioavailable for both caffeine and chlorogenic acid. As such individuals who are interested in raising these two substances in their blood can utilize WGCP.

## Biography

Jacob Wilson has completed BS in Sports Nutrition, two Master degrees in Exercise Physiology and Sports Psychology and a Doctorate in Exercise Physiology. He is the Director of the human performance laboratory at Applied Science and Performance Institute. His research has covered the cellular, molecular and whole body changes in muscle size, strength and power in response to novel products, training and nutrition interventions. On these topics he has published over 150 peer-reviewed papers, book chapters and abstracts. He has won several awards including the NSCA's 2013 Terry J. Housh Young Investigator of the Year Award, 2013 bodybuilding.com Writer of the Year Award and the 2014 bodybuilding.com Column of the Year Award.

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