



Nutritional and clinical research performed and presented by Richard Cohen MD and Bioletics

## A Comparison of Two BCAA Formulas for Potential Excess Gluconeogenesis

Two BCAA sports nutrition products, Chain'd Out® and a Leading Brand, were evaluated for their potential for GI and circulatory gluconeogenesis (conversion to glucose). This is an important factor in performance nutrition as well as potential for values of protein synthesis, inhibition of catabolism and the percentage of BCAAs available to tissues. A Leading Brand's formula is based upon free form BCAAs and additional co-nutrients. Chain'd Out®'s formula is based upon BCAAs with a malate alpha hydroxy moiety and co-nutrients.

In a double blind cross over and placebo clinical study conducted by Richard Cohen MD, 12 healthy athletic persons were screened for health and normal blood glucose (BG) markers and/or complications. 2 of the 8 chosen were noted as having moderate chronic elevation of BG but still within guidelines of high normal. The chosen 8 were validated as not using any performance enhancement drugs nor drugs affecting blood glucose. The test group was composed of 2 females and 6 males ranging in age from 21-48 years of age. Family history for diabetes and hypoglycemia were accessed. Each was given a 2 consecutive day testing period with a 1 day wash out period before crossing over to the opposing formula and repeated again for placebo comparison. Both the Leading Brand and Chain'd Out® were administered at equal dosages and there was a double cross over with placebo.

All subjects were instructed to not eat for 12 hours prior to testing. Blood draws were done in a fasted state 20 minutes post waking. The second blood draws were performed 20 then 30 minutes post ingestion of either Chain'd Out® or the Leading Brand in a double blind cross over testing protocol.

Conclusions: Fasted subjects ingesting the Leading Brand showed a rapid and significant increase in blood glucose elevation resulting in a lower percentage of the two main gluconeogenic BCAAs Valine and IsoLeucine remaining available to muscle and other lean tissues. Additionally, this significant increase in glucose suggest a higher potential for lipolysis and low potential for adipose loss during the elevated period.

Fasted subjects ingesting Chain'd Out® showed a significant decrease in blood glucose suggesting confirmation of prior research on a alpha hydroxyl moiety bound to reactive compounds as a means of GI and circulatory protection from physiological chemistry alterations such gluconeogenesis. Due to a lack of metabolic loss alpha hydroxyl protected compounds have been shown to allow for great percentages of the compounds ingested to be utilized. In regard to BCCAs this would support potential for greater anabolism and lower rate of lipogenesis.

### Results:

#### Leading Brand

Pre-ingestion:

96mg/dL (+-0.60)

20 minutes post ingestion:

123mg/dL (+-0.55)

30 minutes post ingestion:

129mg/dL (0.77)

#### Chain'd Out®

Pre-ingestion

96mg/dL (+-0.60)

20 minutes post ingestion:

93mg/dL (0.80)

30 minutes post ingestion:

89mg/dL (+-0.44)

#### Placebo

Pre-ingestion:

96mg/dL (+-0.60)

20 minutes post ingestion:

96mg/dL (+-0.7)

30 minutes post ingestion:

95mg/dL (+-0.8)

\* Many factors affect a person's blood sugar level. A body's homeostatic mechanism, when operating normally, restores the blood sugar level to a narrow range of about 82 to 110 mg/dL