RESULTS: The baseline glucose levels between bitter melon and waking conditions were similar (6.6 ± 0.9 vs. 6.8 ± 0.7 mmol/L, P=0.57). There were no statistical differences for the mean glucose during the 2-h postprandial period (13.7 ± 2.8 vs. 13.0 ± 2.4 mmol/L, P=56) and 2-h postprandial glucose (AUC (12.6 ± 4.8 vs. 10.7 ± 3.6 mmol/L, P=0.38) between the bitter melon and walking conditions. There was no treatment x time interaction on glucose values (P=0.56). When comparing the glucose levels between the two conditions at each time point, there was also no statistical difference in glucose values at 30 minutes (12.4 ± 2.1 vs 10.5 ± 2.1 mmol/L, P=0.086), at 60 minutes (14.5 ± 2.8 vs 13.6 ± 2.7 mmol/L, P=0.56), 90 minutes (14.7 ± 3.7 vs 14.4 ± 3.3 mmol/L, P=0.88), or 120 minutes (13.5 ± 4.6 vs 13.4 ± 3.9 mmol/L, P=0.95), respectively, between bitter melon and waking conditions.

CONCLUSIONS: Our findings suggest that, among patients with type 2 diabetes, the intake of 100 ml of bitter melon juice can elicit similar postprandial glucose responses, as compared with performing 30 minutes of walking at moderate-intensity.

Board #211

Allyl Isothiocyanate Enhances Brain Neuronal Plasticity Proteins Via Inhibition Of Inflammation Proteins

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BACKGROUND: Oxidative stress caused by the overproduction of reactive oxygen species (ROS) is considered to be responsible for the detrimental effects of traumatic brain injury (TBI), such as disruption of the membrane phospholipid architecture, DNA damage or dysfunction of brain-derived neurotrophic factor (BDNF). The objective of this study was to investigate whether allyl isothiocyanate (AITC) reduce inflammatory mediator levels, serum immunoglobulin G marker for blood-brain barrier and reduces edema and infarction progression in brain.

PURPOSE: We hypothesized that treatment of TBI with the antioxidant molecule, allyl isothiocyanate (AITC) in mustard oil, could provide beneficial health outcomes by alleviating the damage caused by ROS in the brain.

METHODS: We induced TBI in male Balb/c mice using a liquid nitrogen cooled copper probe for 60 seconds and immediately after the cold injury-induced trauma, animals were treated with either vehicle control or AITC (10 mg/kg, ActivAIT). Twenty-four hours after the injury, animals were sacrificed and tissues were collected. The volume of injury which was calculated from the cresyl violet stained coronal brain sections was significantly lower in the AITC group. BBB integrity was evaluated by serum IgG.

RESULTS: AITC significantly increased protein expressions of brain neuronal plasticity marker proteins: GAP-43, NCAM, Nr2f2 and BDNF. Moreover, expressions of inflammation-related proteins, NF-kB, IL1B and IL6 and glial scar marker GFAP, were significantly reduced in the AITC-treated group, suggesting a protective role of AITC in the neuro-inflammation processes.

CONCLUSION: In conclusion, our results demonstrate that the antioxidant molecule AITC when applied immediately after the TBI in mice, provides beneficial effects on inflammatory processes, while promoting the expressions of plasticity proteins and therefore, could be a candidate molecule for future clinical studies in human patients.

F-62 Free Communication/Poster - Ergonomic Aids VI - Other

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Mouth rinsing a carbohydrate solution improves exercise performance in athletes, but whether it benefits exercise performance in overweight adults is unknown.

PURPOSE: This study determined the effect of carbohydrate mouth rinse on running performance and energy intake in overweight participants.

METHODS: In a counterbalanced and placebo controlled design, 21 males (Age: 21.0 ± 1.8; BMI: 27.6 ± 1.1) with depleted glycogen stores, completed a graded treadmill exercise test to exhaustion following a 10-s mouth rinse with a solution of either 7.5% carbohydrate (CHO), placebo (PLA), or a no rinse (CON), followed by standardized meal. Anthropometrics, 24-hour energy intake, heart rate (HR), oxygen consumption (VO2), and rating of perceived exertion (RPE) were measured.

RESULTS: All participants completed the trials. Mean time to exhaustion in seconds per treatment was greater for CHO (1048.7 ± 91.8) versus PLA (1034.4 ± 83.6, p = 0.02), and CON (1012.2 ± 75.7, p = 0.001) (p=0.430). Peak treadmill speed (km/h) was greater for CHO (11.5 ± 0.8) versus PLA (11.3 ± 0.7, p = 0.011), and CON (11.2 ± 0.6, p = 0.003) (p=0.354). Subsequent trial energy intake (kcal) was lower for CHO (577.5 ± 50.5) versus PLA (622.8 ± 78.3, p < 0.0001), and CON (615.2 ± 69.4, p < 0.0001) (p=0.530). The 24-hour energy intake, HR, VO2 and RPE did not change (p > 0.05).

CONCLUSION: Carbohydrate mouth rinse improves both running duration and speed in overweight adults with depleted glycogen stores.