

P03-024-23 Effects of Blenderized Watermelon With Rind Consumption on Blood Pressure, Anxiety, Mood, and Skin Health in Adults

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Objectives: Studies have shown that L-arginine may lower blood pressure and reduce anxiety or positively impact mood. Watermelon is a great dietary source of L-citrulline, which is precursor of L-arginine. The objective of the study was to determine the effects of blenderized watermelon with rind consumption on blood pressure, anxiety, mood and skin health.

Methods: In a randomized, crossover study, 22 adults (19 females, 3 males, age 27.8 ± 7.2 years) blenderized watermelon with rind (240 mL, 72 kcal) vs isocaloric sugar sweetened beverage (SSB) control. Blood pressure was measured every 15 minutes over a total of 45 minutes. Mood and anxiety were examined pre beverage consumption and post 45 minutes using Mood and Feelings Questionnaire (MFQ), and GAD-7 anxiety questionnaire, respectively. Skin sebum, pigment, and moisture levels on right cheek were measured pre and post blenderized watermelon- or placebo control- soaked gauze application.

Results: Watermelon consumption significantly lowered systolic blood pressure in 30- and 45-minute post consumption compared to baseline ($P < 0.05$). There was a non-significant tendency of reducing diastolic blood pressure (DBP) at 15 minute post watermelon consumption compared to baseline ($P = 0.061$), while a significant increasing at 15 minute post SSB consumption ($P = 0.043$). Both treatments decreased skin moisture and sebum levels ($P = 0.001$) but there were no significant differences between the two treatments. No significances were found on skin pigment levels between or within trials. Both trials lowered anxiety scores at 45 post consumption compared to baseline ($P = 0.031$) but no significant differences were observed between trials. Mood scores were lowered with drink consumption in both trials ($P = 0.001$) with greater reduction with watermelon consumption compared to SSB ($P = 0.049$).

Conclusions: This study suggests that the consumption of blenderized watermelon may have some benefits in postprandial blood pressure control and mood improvement. It could serve as a good replacement for sugar sweetened beverages. Future research on the long-term effects of blenderized watermelon consumption on mood and anxiety and skin health and their mechanism is warranted.

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P03-025-23 The Intake of Yogurt With Omega-3 Fatty Acids Affects Bone Quality in Growing Wistar Rats. Influence of Previous Nutritional Status

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Objectives: Omega-3 fatty acids are important on cardiovascular health, inflammation, immune system, bone development, cognition among others. The objective was to analyze the effect of the administration of yogurt alone and added with omega-3 polyunsaturated fatty acids (PUFA) particularly eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) -free and nanoencapsulated-, as part of the usual intake, on bone quality of growing Wistar rats.

Methods: A model of renourished after severe protein malnutrition and the corresponding wellnourished control model was used. Eight groups ($n = 6$) of wellnourished Wistar rats at weaning, were used; four of them were fed with a protein free diet until 25% of initial body weight loss. The renutrition was achieved with an experimental diet according to AIN93 (Renourished group = R) during 28 days. Another group received the same diet plus yogurt (RY group), yogurt supplemented with free omega-3 PUFA 20 mg/day (RYF group) or nano encapsulated (RYN). The four groups corresponding to the wellnourished control model were C, CY, CYF and CYN. Biomechanical Testing on Femur: A three point bending mechanical test (Instron machine, model 4442; Instron Corp) was used to assess right femur biomechanical competence. The structural bone properties evaluated are as follows: load at the yielding point (Wy) and structural strength (Wfmax). Statistical analysis: two way ANOVA with simple effects and post hoc tests. Results were expressed as Mean \pm SE.

Results: Wy (N): C $67,01 \pm 2,75b$ CY $62,38 \pm 3,30b$ CYF $61,5 \pm 3,09b$ CYN $64,51 \pm 1,75b$ R $54,52 \pm 3,94a$ RY $50,89 \pm 2,83a$ RYF $53,73 \pm 3,70a$ RYN $48,42 \pm 3,08a$ Wf max (N): C $75,36 \pm 2,11b$ CY $74,74 \pm 5,65b$ CYF $73,81 \pm 3,68b$ CYN $76,44 \pm 1,57b$ R $62,92 \pm 4,32a$ RY $61,57 \pm 3,03a$ RYF $68,42 \pm 2,35a$ RYN $58,09 \pm 4,68a$. Means with one letter (a,b) in common, were not significantly different ($p > 0.05$). (¥, &) indicates there is no difference between the groups that consumed yogurt supplemented with free omega-3 PUFA. The renourished animals did not recover the bony structural variables (catch up) in the time the study lasted. However, the Wy and Wfmax variables showed no significant differences between RYF and CYF.

Conclusions: Yogurt supplemented with omega-3 PUFA could be effective to recover structural bone properties in this model of re-nourishing after severe protein malnutrition.

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