

Ten Years after Moderate to Severe Traumatic Brain Injury, Community Integration and Related Factors

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Introduction

Adipokines (CTRP9 and CTRP2) levels, growth differentiation factors 8 and 15 (GDF8 and GDF15), metabolic profiles, body composition, anthropometric measurements, and cardio-respiratory indices were assessed. For every measure, there were significant differences between the groups ($p < 0.05$). While GDF15 levels were identical to CG ($p > 0.05$), post-hoc analysis revealed that CTRP9, CTRP2, and GDF8 levels were different from CG ($p < 0.05$). GDF8 levels were comparable in the SG and TG groups ($p > 0.05$), while GDF15 levels decreased in both training groups ($p < 0.05$). Taking astaxanthin supplements and exercising for a total of 12 weeks reduced adipokine levels, anthropometrical variables (BMI), and body composition (weight,%fat), and enhanced lipid and metabolic profiles. These advantages were more pronounced for the TSG group's obese men [1-3].

Description

There were 101 participants who initially volunteered for the study after calling in public spaces like gyms, medical clinics, hospitals, and social networks. Of these, 33 were ruled ineligible, leaving 68 participants in the study (mean age: 27.6 8.4 yrs; mean height: 167.8 3.1 cm; mean weight: 94.7 2.0 kg; mean BMI: 33.6 1.4 kg/m²), who were split into 4 groups of 17 participants BMI > 30 kg/m², inactivity for the previous six months, absence of endocrine, metabolic, or cardiovascular illnesses, and abstinence from alcohol use were the inclusion criteria for the study. Participants with joint diseases or physical limitations as well as those taking supplements and drugs that can affect adipose and muscle tissue were also excluded from the study. All participants underwent a physical assessment by a doctor and a clinical exercise physiologist during the initial visit. Each participant filled out a Physical Activity Readiness Questionnaire (PAR-Q) and gave written informed permission papers. The initial visit included an explanation of the study's protocols, and all of them were approved by the Islamic Azad University's Research and Ethics Committee (Ethics code: IR-IAU1400-47). The Declaration of Helsinki's most recent revision was followed in all processes [4-6].

Conclusion

Our research shows that exercise training and astaxanthin supplementation reduced adipokine levels, body fat percentage, weight, and anthropometrical variables, and enhanced lipid and metabolic profiles over the course of 12 weeks. These advantages were more pronounced in obese individuals who exercised and supplemented with astaxanthin. GDF8 may play a function in

the control of body fat and overall energy metabolism because its release is higher in overweight and obese people. Skeletal muscle mass may be negatively regulated by GDF8. In comparison to when either intervention was evaluated separately, our study indicated that the group receiving both astaxanthin and HIFT training had lower circulating levels of GDF8. Obesity, chronic inflammation, decreased exercise training, and circulating levels of GDF15 are all associated with these conditions. The bulk of other research, in contrast to our findings, show increases in GDF15 levels after exercise in healthy and obese people, most likely as a result of acute episodes of metabolic and inflammatory stress. GDF8 may play a function in the control of body fat and overall energy metabolism because its release is higher in overweight and obese people.

Acknowledgement

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Conflict of Interest

None.

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