

Relationship Between Body Composition, Diet, and Food Addiction in Young Adult Females

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ABSTRACT

Addictive behavior in relation to food is often a consistent variable with obesity and aberrant eating. However, body composition alone is not a strong indicator of food addiction, rather is associated with other factors such as quality of diet, making the compulsive behavior difficult to diagnose. Eating disorders are widespread amongst young adult females and warrant further investigation. **PURPOSE:** To identify various factors that may attribute to food addiction symptoms in young adult females. **METHODS:** The study consisted of twelve physically healthy females (age = 20.8 ± 1.6 yr and BMI = 21.9 ± 1.6 kg/m²). Dual-Energy X-ray absorptiometry was used to evaluate body composition. A 3-day dietary log was collected (2 weekdays and 1 weekend day) and analyzed using the Food Processor Software. Symptoms of food addiction were evaluated using the Yale Food Addiction Scale 2.0. Six participants displaying food addiction symptoms (FAS) were matched (BMI, age, fat-free mass, and body fat %) and compared with 6 complementary females without food addiction symptoms (WFAS). Data were analyzed via a Pearson correlation analysis and a one-way ANOVA ($p < 0.05$). **RESULTS:** There was no statistically significant difference found in intake of energy, carbohydrates, proteins, fats, and saturated fats based on total calories. Although not statistically significant, the mean omega-3 intake of FAS ($.88 \pm .58$ g) was lower than that of WFAS (1.07 ± 1.03 g), and omega-6 was 6.2 ± 4.9 g for FAS and 4.2 ± 2.5 g for WFAS, respectively. The macronutrient breakdown for FAS was as follows: total intake - 1572 ± 69 kcal/day, carbohydrates - 706 ± 132 kcal/day, proteins - 308 ± 52 kcal/day, and fats - 557 ± 83 kcal/day. The macronutrient breakdown for WFAS was 1923 ± 527 kcal/day (total intake), 875 ± 208 kcal/day (carbohydrates), 346 ± 123 kcal/day (proteins), and 701 ± 248 kcal/day (fats). WFAS consumed 208 ± 72 kcal/day of saturated fats, while FAS consumed 25% more saturated fats (265 ± 35 kcal/day). Waist to hip ratio between FAS and WFAS was significantly different ($p = .032$), where FAS = 0.75 ± 0.03 and WFAS = 0.70 ± 0.03 . **CONCLUSION:** Though there was no significant statistical difference in total caloric intake between the food addictive and non-addictive groups, there was a noticeable trend that the food addictive group consumed fewer calories but had a higher waist to hip ratio. This trend suggests that the quality of diet, rather than total intake, may be related to a higher waist to hip ratio. Additionally, the food addictive group had a lower total fat intake and consumed more saturated fats than the non-addictive group. Saturated fats are conventional in most heavily processed foods. Though the food addictive group is consuming fewer total calories, there is a larger portion of their diet made up of saturated fats suggesting an imbalance in diet quality associated with food addiction. Future research analyzing the type and quality of food consumed in larger sample size is encouraged.