D3.3: Depressive Symptoms and Food Energy Density are Independent Predictors of Abdominal Obesity

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Abstract:
**Introduction:** Approximately 50% of US adults have abdominal obesity (AO) which is associated with increased cardiometabolic disease risk. Stress can precipitate or exacerbate depressive symptoms, reinforce unhealthy dietary patterns and potentially lead to AO, as indicated by increased waist circumference (WC). High energy dense diets, characterized by high total and saturated fat and calories, may contribute to AO. Purpose: To examine depressive symptoms, perceived stress and food energy density (ED [kilocalories/gram]) as predictors of WC in overweight adults.

**Method(s):** Participants were overweight adults (n=87), 73.6% women, 50.6% African-American, mean age 41.3 ± 10.2 years, mean BMI 32.1 ± 6.1 kg/m2. Variables and measures: Depressive symptoms (Beck Depression Inventory-II [BDI-II]), Perceived stress (Perceived Stress Scale [PSS]), weighed 3-day food record to calculate ED (mean energy of food/mean weight of food) and consumed food weight (grams). Height and weight were measured to calculate BMI, and WC was measured using standardized procedures. Descriptive statistics and multiple regression to predict WC were used.
**Results:** WC was $103.4 \pm 12.7$ cm for men and $103.2 \pm 14.9$ cm for women, with 73.6% reflecting increased cardiometabolic risk. PSS was $16.47 \pm 7.19$, and BDI-II was $8.67 \pm 8.34$ with 21.8% reporting mild to severe depressive symptoms. PSS and BDI-II were moderately correlated ($r=.60$, $p<.01$). Consistent with national data, mean food ED was $1.84 \pm .43$ kcal/g. Multiple regression revealed that BDI-II ($p<.01$) and food ED ($p=.02$) explained 15.5% of WC variance above that accounted for by age ($p=.06$) and consumed food weight ($p<.01$). PSS did not contribute to WC variance.

**Discussion & Conclusions:** Increased depressive symptoms and higher food ED independently predicted elevated WC explaining WC variance above that accounted for by older age and heavier consumed food weight. Higher stress may contribute to increased depressive symptoms, leading to higher food ED, thus indirectly contributing to elevated WC. Reducing depressive symptoms and lowering food ED by replacing high caloric, high fat foods with those high in water and fiber may be important targets of intervention to lower WC and decrease cardiometabolic disease risk in otherwise healthy adults.

**Abstract History:**
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