



Associations between alcohol intake and anthropometric measurements in an Irish obstetric cohort

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Visceral Adipose Tissue (VAT) is defined as adipose tissue which lies within the omental fat compartment surrounding the body's abdominal organs. Its deposition is associated with the release of adipokines which increase insulin resistance and large amounts of VAT contribute to the development of metabolic syndrome⁽¹⁾. Ireland continues to rank among the highest consumers of alcohol in the European Union⁽²⁾. Alcohol consumption in Ireland has increased substantially over the past five decades, with the average consumption in 2010 being 145% higher than that consumed in 1960⁽²⁾. The majority of existing evidence suggests a positive correlation between VAT accumulation and alcohol consumption in both men and women⁽³⁾. Suboptimal maternal body composition in pregnancy, including abdominal obesity, has been linked with unfavourable outcomes in the offspring⁽⁴⁾.

This cross sectional study investigated the relationship between habitual, self-reported alcohol intake prior to pregnancy and maternal body composition in the first trimester of pregnancy amongst an obstetric cohort ($n = 403$) attending the Coombe Women and Infants University Hospital in Dublin. Anthropometric data were collected by 8-lead, multi-frequency bio-electrical impedance analysis (BIA) while the validated Willet food frequency questionnaire was used to assess dietary intake. Respondents reported the type, frequency and quantity of alcohol consumed before and during pregnancy in a separate lifestyle questionnaire. Univariate analysis revealed a positive correlation between self-reported alcohol consumption and VAT levels in pregnant women ($P = 0.025$). Positive correlations were also observed between alcohol intake and percentage body fat ($P = 0.007$) and fat mass index ($P = 0.016$). No association was observed between habitual alcohol intake and other anthropometric measurements such as BMI, Waist Circumference or Fat Free Mass Index. Twice as many women who consumed alcohol during pregnancy had high visceral fat levels, but this difference did not reach statistical significance (12% vs. 6%, $P = 0.77$).

These findings suggest an association between higher habitual alcohol consumption and visceral fat accumulation in young women, a known contributor to metabolic syndrome, cardiovascular disease and poorer fetal outcomes⁽⁴⁾.

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