

Adolescent females using common weight control techniques show biochemical evidence of reduced nutrition.

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Background: A large proportion of teenage females regularly use weight control techniques. The effect of habitual dieting on adolescent health has not yet been widely studied.

Objective: This study aimed to identify possible adverse biochemical effects of regularly used weight reduction or control techniques in 14 – 17 year old females attending schools within the greater Sydney and Hunter Regions.

Design: This was a cross sectional study of 482 adolescent females ages between 14 – 17 years samples from 7 schools across the greater Sydney and Hunter Regions of Australia. Participants provided a fasting blood sample followed by morphometric analysis. Under supervision, participants completed a previously validated questionnaire which documented the type and frequency of their use of weight control techniques.

Outcomes: Adolescent females who often used weight control techniques had a healthy average BMI of 22.5. Analysis of relevant blood markers showed that on average, females who often used weight control methods had a significantly low haemoglobin ($p < 0.05$), alkaline phosphatase ($p < 0.001$), bilirubin, albumin, total protein and calcium ($p < 0.05$), but higher levels of creatinine and potassium ($p < 0.05$).

Conclusion: The regular use of weight control techniques by healthy adolescent females results in a metabolically identifiable group whose results are consistent with subtle levels of chronic under nutrition. This early negative biochemical divergence may predispose these children to adverse health outcomes, such as osteoporosis, during the later adult years.