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Fruit and vegetable consumption and weight change in middle-aged participants of the UK Women's Cohort Study

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Many studies have demonstrated a link between body weight and morbidity and mortality risk in women including heart disease, diabetes and certain cancers⁽¹⁾. While it is well recognised that weight gain tends to occur throughout adulthood, the aetiology of this weight gain has been relatively under explored. The 'five a day' message for fruit and vegetables is a central tenet of existing health advice and there is some extent of assumption that adherence to this guideline will prevent the development of many chronic diseases, including obesity. However, relatively few analyses of prospective studies have been conducted to confirm this assumption.

In the present study a prospective investigation of the effects of eating patterns relating to fruit and vegetable consumption on body-weight change in the UK Women's Cohort Study (UKWCS) was undertaken. The UKWCS is a 10-year prospective investigation of the relationship between diet and health in middle-aged women across the UK. Full details of the cohort participants have been published elsewhere⁽²⁾. Information on fruit and vegetable consumption was captured using questions at baseline and follow-up that asked the participants to separately report how many servings of fruit and vegetables they consumed in an average week. Body-weight measurements were self-reported at study baseline in 1995–8 and again after follow-up in 1999–2004 (average follow-up 4.3 years) in 14 172 women within the cohort. After excluding women with missing data, incident cancer, self-reported diabetes mellitus or an eating disorder, 12 946 women were available for inclusion in a linear regression analysis that assessed the association between change in body weight and consumption of fruit and vegetables.

The women experienced a small increase in body weight (+1.5 (SD 4.7) kg) during the follow-up period. Weight was gained at a rate of 357 g per year of follow-up, which is similar to that observed in other cohorts of health-conscious individuals⁽³⁾. During the period of follow-up the women reported an increase in the number of servings of fruit and vegetables consumed (by 0.71 (SD 1.7) servings per d) from a baseline intake of 3.1 servings per d. In a model that adjusted for a range of confounders effects of baseline fruit and vegetables on weight change did not show clear trends. Effect sizes were small and crossed zero, indicating non-significance. However, small but clear trends appeared when the change in fruit and vegetable consumption between baseline and follow-up was considered. When analysed as a continuous variable, each portion increase in fruit was associated with a reduction in weight of 78 g per year of follow-up ($P < 0.001$). When change in vegetable consumption was used as the exposure, similar but slightly reduced effects were seen (reduction of 35 g per year per portion increase; $P = 0.001$). Change in fruit and vegetable consumption combined also displayed similar significant protective effects against weight gain. While causality may not be inferred from these observational data, the results of these analyses indicate that increasing consumption of fruit and vegetables may minimise some of the weight gain generally experienced by middle-aged women.

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