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Do dietary patterns track from adolescence into adulthood?

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Adolescent dietary patterns tend to be of poor quality, dominated by energy-dense, nutrient-poor discretionary food and drinks. It is unclear whether dietary patterns established in adolescence persist, or track into adulthood. This has important implications for targeted interventions and public health policies aimed at preventing obesity and chronic disease. We examined trajectories across adolescence and young adulthood for two major dietary patterns linked to obesity and chronic disease risk factors.

Using data from the Western Australian Pregnancy Cohort (Raine) Study, we analysed intakes of 38 major food groups estimated at 14, 17, 20 and 23 years of age in 1,402 participants (47% male) using evaluated food frequency questionnaires. Two major dietary patterns ('Healthy' and 'Western') were identified using factor analysis, that were consistent across follow ups. Sex-specific group-based modelling was used to assess variation in individual *z*-scores for each pattern, to identify major trajectories in scores between 14 and 23 years of age. Individuals were classified into one of two major trajectory groups for each pattern.

The majority of the cohort (71% males, 78% females) formed trajectory groups with consistently low scores for the 'Healthy' dietary pattern. The remainder showed either declines in modest scores (females 22%) or consistently modest scores (29% males) for the 'Healthy' pattern. For the 'Western' dietary pattern, the majority formed trajectories with consistently average 'Western' pattern scores (78% males) or low scores that declined over time (84% females). However, a substantial proportion of males (22%) showed a trajectory of steady, marked increases in 'Western' pattern scores over time.

Poor dietary patterns established in adolescence are likely to track into young adulthood. Adolescent boys may be particularly prone to poor dietary habits worsening as they enter adulthood. This highlights adolescence and young adulthood as critical periods for interventions to support healthy eating.

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Impact of height-adjustable desks on adolescents' energy expenditure, adiposity and perceived musculoskeletal discomfort

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During school hours, adolescents spent large amounts of time sitting (≈70%). Although breaking up sitting time using height-adjustable desks have shown positive effects on classroom energy expenditure (EE) among children, however, the impact on adolescents' health has not yet been reported. The aim of this study was to investigate the effects of height-adjustable desks into classroom, accompanied by messages encouraging breaking-up sitting on adolescents' body mass index (BMI), waist circumference (WC), EE, and musculoskeletal discomfort.

This quasi-experimental pilot study equipped one classroom in a secondary school with 27 height-adjustable desks and posters displaying information about the impact of break-up sitting on health and how often to break-up sitting while in class. Intervention teachers assisted to a professional development session. Participants included 55 adolescents and their teachers who used the intervention classroom at least 2–5 times/week and 50 adolescents and their teachers who used traditional classrooms. All measurements were taken at three time points: baseline, at 4-weeks and at 17-weeks follow-up. EE (kcal/min) was objectively assessed using a SenseWear activity monitor (Body media, Inc., Pittsburgh). BMI and WC were assessed by trained research staff. Musculoskeletal discomfort was self-reported. Hierarchical linear and multilevel logistic regression mixed models were used to examine intervention effects. All models were adjusted for baseline values, sex and age.

EE was significantly higher at 4-weeks and 17-weeks (29.4 and 37.7 kcal/lesson, respectively), BMI was higher at 4-weeks (0.34 kg/m^2), and WC was lower at 4-weeks and 17-weeks (−3.53 and −2.64 cm, respectively) in the intervention compared to the comparison group. No intervention effect was found for musculoskeletal discomfort.

The introduction of height-adjustable desks and supportive prompts in a secondary-school classroom had a beneficial impact on EE during lessons and waist circumference at 4 and 17-weeks relative to a comparison group, and did not negatively impact perceived musculoskeletal discomfort.

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