

Abstract

Dietary Patterns and Associations with Macronutrients, Body Fat Percentage and BMI in Older New Zealand Adults: The REACH Study [†]

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Abstract: Dietary patterns (DPs) explore one's whole diet and can be used to investigate associations between dietary intake and obesity. This study investigates the DPs of community-dwelling adults (65–74 years, 36% male) and associations with body mass index (BMI), body fat percent (BF%) and macronutrient intake. Dietary data (validated 109-item food frequency questionnaire) collected in the Research Eating, Activity, and Cognitive Health (REACH) study (n = 367) were collapsed into 57 food groups. The percent of macronutrient intake contributing to energy intake was calculated. BMI was calculated using measured height and weight. BF% was measured using Dual-energy X-ray Absorptiometry. Confounding factors (age, sex, physical activity and index of multiple deprivation) were collected using a questionnaire. The mean percent of energy intake from protein (18%) was within, carbohydrate (40%) below, and both total and saturated fat (36%, 15%) were above acceptable macronutrient distribution ranges. Using principal component analysis, three DPs were extracted explaining 18% of the variation in the diet: Mediterranean-style (vegetables, avocados/olives, alliums, nuts/seeds, shellfish, white/oily fish, berries and fruit), Western (processed meat/fish, sauces/condiments, cakes/biscuits/puddings and meat pies/hot chips) and prudent (legumes, soy-based foods, whole grains and carrots). Using multiple linear regression and adjusting for confounding factors, the Western DP was positively associated with BMI ($\beta = 0.87$; 95% confidence interval (CI) 0.20, 1.54; $p = 0.01$) and BF% ($\beta = 0.86$; 95% CI 0.12, 1.60; $p = 0.02$). The prudent DP was negatively associated with BMI ($\beta = -0.65$; 95% CI $-1.14, -0.16$; $p = 0.01$) and BF% ($\beta = -0.66$; 95% CI $-1.20, -0.12$; $p = 0.02$). The Mediterranean-style DP was not associated with BMI ($\beta = -0.49$; 95% CI $-0.99, 0.01$; $p = 0.06$) or BF% ($\beta = -0.49$; 95% CI $-1.04, 0.06$; $p = 0.08$). The percent of energy from carbohydrate increased and total and saturated fat decreased as Western and prudent DP scores increased. Fibre intake also increased as prudent DP scores increased. Western and prudent, but not Mediterranean-style, dietary patterns and their macronutrient intakes explain some variation in body composition.

Keywords: body composition; dietary assessment; macronutrients; obesity; older adults

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