



## The nutritional adequacy of popular weight loss diets - do they meet the requirements for dairy foods and calcium?

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Weight loss or fad diets are often promoted for rapid weight loss and by unqualified individuals and celebrities. There is sometimes limited information around the nutritional adequacy of the diet. Some diets require fasting, some modify macronutrient composition, and some restrict food groups, such as dairy foods, resulting in suboptimal intake of nutrients like calcium, potentially leading to nutrient deficiencies and disease such as osteoporosis if followed long-term. We assessed the total dairy food and calcium content of five popular weight loss diets (Intermittent Fasting, Ketogenic, Optifast, Paleolithic, 8 Weeks to Wow; 8WW), and two government recommended healthy eating principles (Australian Guide to Healthy Eating; AGHE, and Mediterranean diet; MedDiet, for weight loss). Meal plans from each diet were analysed using Foodworks Dietary Software and compared with government recommendations and dietary reference values (DRV) in Australia, the United States and Ireland to give the percentage of the recommended intake of dairy food and calcium, met by each diet<sup>(1)</sup>. Intermittent Fasting, Ketogenic and AGHE provided the most serves of dairy foods with 2.8, 2.3 and 2.2 serves/d, respectively, whilst 8WW, MedDiet, and Optifast provided 1.4, 1.3 and 1 serve/d each, respectively, and Paleolithic 0.02 serves/d. None of the dietary patterns met all government recommendations for dairy serves. Milk was the most common source of dairy food in all dietary patterns except for Ketogenic (cheese), MedDiet (yoghurt) and Paleolithic. The Ketogenic diet provided the highest calcium content (1293mg/d), followed by Intermittent Fasting (1230mg/d) and Optifast (1212mg/d). Non-dairy sources contributed to 93% of the calcium content (385mg/d) of the Paleolithic diet, 70% for Optifast and 61% in the MedDiet (631mg/d). None of the dietary patterns met all dietary reference values for calcium. There are no universal dietary recommendations for dairy foods or calcium, making cross country comparisons of dietary recommendations difficult. Only the Intermittent Fasting diet met the dietary recommendations in Australia for dairy serves for males 19-70 and females 19-50 years. None of the other diets met any recommendation for Australia, the US and Ireland. Most dietary patterns met the estimated average requirement for age and gender, for calcium for Australia, the US and Ireland, apart from the Paleolithic diet which eliminates dairy foods and the MedDiet which is naturally low in dairy foods. These data indicate that several popular weight-loss diets do not meet dietary recommendations for dairy foods or calcium. Therefore, when considering a weight loss diet or dietary pattern, it is crucial to consider the nutritional adequacy, to ensure macro and micronutrient requirements are met for health and avoidance of nutritional deficiencies, particularly if followed long-term.

**Keywords:** dietary patterns; dairy; calcium; weight-loss

### Ethics Declaration

Yes

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### Reference

1. Bracci EL, Keogh JB, Milte R & Murphy KJ (2022) *Br J Nutr* **128**, 1357–70.