

ANALYSIS OF EVIDENCE LINKING DIETARY CARBOHYDRATE AND FAT PROPORTIONS WITH BODY WEIGHT AND INSULIN RESISTANCE

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ABSTRACT

Long term success in weight loss with dietary interventions has been elusive. Diets with different macronutrient composition have been popularized without detailed evidence of their intake, efficacy and safety. This article aimed at evaluating documented change in body weight and blood glucose and insulin levels in human and animal studies using different macronutrient composition, and suggesting future avenues of investigation. Following no date restrictions, Science Direct, MEDLINE and PubMed databases were thoroughly searched for randomized controlled trials that assigned human adults and animals to low-carbohydrate or low-fat diets regardless their composition and names, with ≥ 3 weeks of follow-up for animal studies and with ≥ 2 weeks of follow-up for human studies. The primary outcome was body weight, whereas the secondary outcomes were blood glucose and insulin. A total of 20 studies met the inclusion and exclusion criteria. In overall analyses, low-carbohydrate hypocaloric diets were as effective as low-fat diets in achieving significant body weight loss. Both types of diets were associated with comparable effects on insulin sensitivity. High fat diets have inverse effects on insulin and body fat in animal models. Randomized controlled human research examining direct clinical and longitudinal effects of these diets on body weight and key markers of insulin resistance is required.

KEYWORDS: Blood Glucose, Insulin Resistance, Low-Carbohydrate Diets, Low-Fat Diets, Body Weight Loss

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