

Diets for weight loss and prevention of negative health outcomes

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Clinical question

Is any particular diet better for weight loss or prevention of negative health outcomes like heart disease or mortality?

Evidence

- Low-carbohydrate (low-carb) diet: 2 new trials provide the best evidence.
 - Two-year trial¹ of 322 patients found those following a high-carb (low-fat) diet lost 2.9 kg, those on a Mediterranean diet lost 4.4 kg, and those on a low-carb diet lost 4.5 kg.
 - The low-carb group had the highest dropout rate.
 - Two-year trial of 811 patients following 1 of 4 different diets (varying concentrations of carbohydrate, protein, and fat)² found
 - no difference in any diet (weight loss was about 3.0 to 3.5 kg at 2 years for all diets) and
 - 15% of participants lost 10% of their weight.
 - Weight loss is greatest at 6 months; regain is seen thereafter.
 - Cohort studies suggest possible increased mortality with low-carb diets,³ particularly if much of the consumed protein and fat is derived from animal sources.⁴
- Very-low-calorie diets (≤ 800 calories/d) induce impressive weight loss at 6 months (16 kg vs 10 kg with low-calorie diets).⁵
 - Participants regained weight more quickly than with other interventions and are no different after a year.^{6,6}
- Mediterranean diet: the only diet with health outcomes evidence.
 - Post-myocardial infarction trial of 584 patients over 2.3 years⁷:
 - weight, blood pressure (BP), and cholesterol—no difference;
 - cardiovascular death and myocardial infarction—2.6% versus 10.9% for a normal diet, number needed to treat (NNT) of 12 ($P=.001$);
 - death—2.6% versus 6.6%, NNT=25 ($P=.02$).
 - In 2 other trials, Mediterranean diet reduced the need for hyperglycemic medications in new diabetics (NNT=4)⁸ and reduced cardiac end points for high-risk patients (NNT=14).⁹
 - Meta-analysis of cohort studies shows that adherence to a Mediterranean diet is associated with lower mortality; relative risk of 0.91 (95% confidence interval 0.89 to 0.94).¹⁰

Context

- There is no reliable difference among any commercial diets.¹¹
 - Studies finding differences are at high risk of funding bias.¹²
- DASH diet trials generally show reductions in BP (up to 11 mm Hg in hypertensive patients).^{13,14}
 - However, trials are often short (≤ 6 months),^{13,14} and a longer trial (18 months)¹⁵ did not find significant BP reductions.
 - DASH trials have also not shown consistent weight loss and do not examine hard outcomes (eg, cardiovascular disease).¹³⁻¹⁵
- Obesity is clearly associated with increased mortality.
 - For example, life expectancy is reduced by 3 years in overweight patients and 6 to 7 years in obese patients.¹⁶
- Interestingly, in cohort studies when obese people intentionally lose weight, mortality results vary (sometimes increasing).^{17,18}
- Evidence suggests activity likely has more effect on outcomes like mortality.¹⁹

Bottom line

Weight loss for all diets is greatest around 6 months, regain is common, and by 2 years there is no consistent difference between diets. Only the Mediterranean diet has demonstrated positive benefits for heart disease and mortality, despite not causing differences in weight or surrogate markers like lipid profiles.

Implementation

If patients ask for a dietary recommendation, the Mediterranean diet should likely be recommended above others; resources are widely available (eg, from the Mayo Clinic²⁰). Regardless of the particular diet plan, patients should be encouraged to make healthy choices, set specific but moderate goals, and be offered close follow-up²¹ to prevent regain (especially after 6 months). Given the benefits of exercise, every discussion about diet and weight management should include recommendations regarding physical activity; the Public Health Agency of Canada has tip sheets to help patients get active.²² Another easy approach is to prescribe a pedometer and a step goal to reach a reasonable target of steps per day (perhaps 10 000).²³

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