

## LOW CARBOHYDRATE DIETS FOR WEIGHT LOSS & CARDIOVASCULAR RISK<sup>1</sup>

STRENGTH OF EVIDENCE: HIGH ⊕ ⊕ ⊕ ○

### Why is this important?

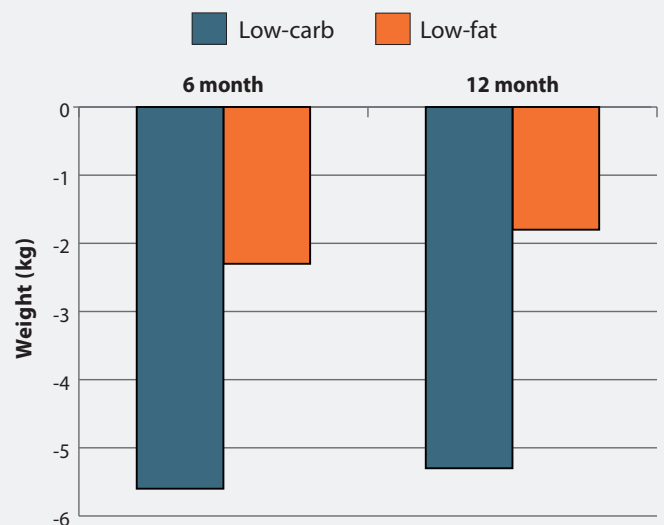
There has been much debate about the optimal diet for weight loss and cardiovascular risk reduction. Data on low fat or modified fat diets have shown modest benefits<sup>2</sup>. Prior randomized controlled trials compared low carbohydrate diets to low fat diets and found benefits regarding weight loss and cardiovascular risk factors<sup>3,4</sup>.

### Facts

- 148 adults with obesity (mean BMI 31) and without diabetes or cardiovascular disease at baseline were randomly assigned to a low-carb diet (< 40 g/d carbohydrates) or low-fat diet (<30% daily intake total fat; <7% saturated fat and 55% carbohydrates)
- There were no specific calorie or energy goals for either diet group
- Both groups had individual and small group counseling sessions with a dietician, and one daily meal replacement provided as part of the intervention
- 88% of participants were female; 50% were black
- The primary endpoint was change in body weight at 12 months. The secondary endpoints were the change in fat mass, lean body mass, HDL, and triglycerides at 12 months.

- Self-report of actual daily intake at six months was 93 g carbohydrate in low-carb group and 202 g carbohydrate in the low-fat group. Fat intake at six months was reported as 46 g in the low-fat group, 67 g in low carbohydrate.
- The low-carb group (compared to the low-fat group) had significantly average greater change in weight at 12 months (loss of 3.5 kg or ~8 lbs.)
- Participants in the low-carb group had significantly greater decreases in fat mass and triglycerides and significantly greater increases in lean body mass and HDL compared with the low-fat group.

### Change in Body Weight at 6 months & 12 months



## THE BOTTOM LINE

**A low carbohydrate diet, compared to low-fat diet, led to an average greater weight loss of 8 pounds over 12 months, and showed trends toward improved cardiovascular risk factors. However, the lack of long-term endpoints limits the applicability.**

## Strength of Evidence

(Adapted from Guyatt G BMJ, 26 April 2008)

This refers to the degree to which the findings of this study are likely to be free of bias.

⊕ ⊕ ⊕ ⊕	High
⊕ ⊕ ⊕ ○	Moderate
⊕ ⊕ ○ ○	Low
⊕ ○ ○ ○	Very low

### Tips for Discussion of Results with Patients

- Low carbohydrate diets can be effective for weight loss and appear to improve risk factors linked with cardiovascular disease, compared to low-fat diets.
- Any diet plan should be implemented in the context of comprehensive health care and review of patient preferences and comorbidities.

## References

1. Bazzano LA et al. Effects of Low-Carbohydrate and Low-Fat Diets. *Ann Intern Med.* 2014; 161:309-318
2. Hooper, L et al. Reduced or Modified Dietary Fat For Preventing Cardiovascular Disease. *Cochrane Database of Systematic Reviews.* 2012. DOI 10.1002/14651858.CD002137.pub3
3. Yancy WS et al. A Low-Carbohydrate, Ketogenic Diet versus a Low-Fat Diet To Treat Obesity and Hyperlipidemia. *Ann Intern Med.* 2004;140:769-777
4. Gardner CD et al. Comparison of the Atkins, Zone, Ornish and LEARN Diets for Change in Weight and Related Risk Factors Among Overweight Premenopausal Women. *JAMA.* 2007; 297:969-977

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The Bottom Line summaries reflect the expertise and opinions of the SGIM EBM Task Force as of the date of release of this summary.