



## Comparison between continuous and intermittent hypocaloric diets on glycemic control in patients with T2DM

Editors  
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Intermittent Energy Restriction (IER) is a profound caloric reduction limited to two days per week, with normal dietary habits during the remaining 5 days. This alternative approach to weight loss is gaining in popularity because it is apparently easier to implement than Continuous Energy Restriction (CER). A systematic review of studies of overweight or obese individuals in general good health shows that IER and CER induce a similar weight loss of 3-5 kg within about 10 weeks (1). Other IER methods, like the “modified alternate-day fasting” have also shown weight loss comparable to that obtained by CER (2). There are currently no long-term results of IER in patients with type 2 diabetes mellitus (T2DM), although results at three months seem encouraging (3).

A recent Australian non-inferiority study (4) compared 12 months of IER and CER on glycemic control and weight loss. Inclusion criteria included age  $\geq 18$  years, good general health, T2DM (average HbA1c 7.3%), obesity (average BMI 36 kg/m<sup>2</sup>, not  $< 27$  kg/m<sup>2</sup>), BP  $< 160/100$  mm Hg. Exclusion criteria were pregnancy, breast feeding and previous bariatric surgery. The 137 participants (mean age 61 years; 77 females), were randomized (1:1) into two groups:

- IER (n = 70), on 500-600 calories per day for two non consecutive days of the week, and usual diet in the remaining five days, with a total protein intake not inferior to 50 g/day;
- CER (n = 67), on stable caloric intake of 1200-1500 calories per day (proteins 30%, fat 25%, carbohydrates 45%) every day of the week.

At the beginning of the study, number and dose of diabetes medications were reduced in patients with occasional episodes of hypoglycemia. During the study, sulphonylureas and insulin were reduced when daily caloric intake was reduced, and suspended if it was less than 500-600 kcal/day.

Primary outcome: HbA1c variation. Secondary outcome: weight loss. Both outcomes underwent non-inferiority analysis.

### Results

97 patients completed the study. The intention-to-treat analysis has shown [mean (SEM)]:

- Comparable HbA1c reduction: IER -0.3% (0.1) vs. CER -0.5% (0.2);
- Comparable weight reduction: IER -6.8 kg (0.8) vs. CER -5.0 kg (0.8).

There were no significant reductions at 12 months in terms of: fat or lean mass evaluated by DEXA, fasting glucose, serum lipids. In patients on sulphonylureas or insulin there was no significant incidence of hypoglycemic or hyperglycemic episodes during the first two weeks of dietary treatment.

### Conclusion

In patients with T2DM, caloric restriction by IER may induce a reduction of HbA1c comparable to that obtained by CER.

### References

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