

Type 2 diabetes remission with low-energy diet

Intensive lifestyle intervention using a low-energy total diet replacement achieves remission in primary care setting.

A study has added to the growing body of evidence that remission of type 2 diabetes may be achieved with aggressive lifestyle changes. DiRECT-Aus set out to determine if a 12-month intervention, incorporating low-energy total diet replacement (TDR), could induce remission in adults with recently diagnosed type 2 diabetes in an Australian primary care setting.

The open-label, single-arm intervention trial recruited adults aged 20–65 years with type 2 diabetes duration of ≤ 6 years, with HbA_{1c} at entry $\geq 6.5\%$ (≥ 48 mmol/mol), BMI >27.0 kg/m² and who were not treated with insulin. At baseline, there were equal numbers of males and females, with mean age of 52.5 years, weight of 106.9 kg, BMI of 37.7 kg/m², HbA_{1c} of 7.1% (54 mmol/mol) and type 2 diabetes duration of 2.8 years. Glucose-lowering medications were used by 88%.

Participants ($n=155$) underwent a 13-week TDR (800–950 kcal, depending on BMI), with fortnightly dietitian visits. This was followed by an 8-week structured food reintroduction

and 31 weeks of supported weight management. An increase in daily physical activity was also encouraged, with a target of 15 000 steps.



At 12 months, 86 (56%) of participants had achieved type 2 remission (defined as $HbA_{1c} <6.5\%$ [<48 mmol/mol] and off glucose-lowering medications for ≥ 2 months ± 7 days). The number was highest at the end of the TDR phase at 102 (66%), with 99 (64%) and 92 (90%) at 6 and 9 months, respectively.

Across all of the participants, the mean adjusted weight loss after the TDR was 11.2% (95% CI, 10.3–12.1). At 12 months, it was 8.1% (7.2–9.1). The likelihood of remission was proportional to weight loss, with remission being achieved by 87% of participants who reduced their weight by $>15\%$. The TDR was well tolerated, with only a few serious adverse events that were largely related to hypotension.

Following an intensive lifestyle intervention delivered in primary care, the rate of remission of type 2 diabetes of around one in two participants was

similar to the findings of both the DiRECT and DIADEM-I trials, despite being conducted in different countries and across different ethnicities. The investigators conclude that a low-energy TDR is a robust intervention for type 2 diabetes remission, particularly if adopted within 6 years of diagnosis.

The full study findings can be read [here](#). ■

Intensive Lifestyle Intervention for Remission of Early Type 2 Diabetes in Primary Care in Australia: DiRECT-Aus

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OBJECTIVE
 We aimed to assess whether remission of type 2 diabetes (T2D) could be achieved with a low-energy total diet replacement (TDR) in an Australian primary care setting.

RESEARCH DESIGN AND METHODS
 Individuals aged 20–65 years with T2D duration up to 6 years, BMI >27.0 kg/m², and not treated with insulin were prescribed a 13-week low-energy TDR (Optifast, Nestlé Health Science) followed by 8-week structured food reintroduction and 31-week supported weight maintenance. The primary outcome was T2D remission at 12 months.

RESULTS
 A total of 155 participants completed the intention-to-treat population. At 12 months, T2D remission was achieved in 86 (56%) participants, with a mean adjusted weight loss of 8.1% (95% CI 7.2–9.1). Two serious adverse events requiring hospitalization related to the study intervention were reported.

CONCLUSIONS
 At 12 months T2D remission was achieved for one in two Australian adults in a primary care setting.

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