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Feasibility of a Remission-Targeted 5:2 Intermittent Fasting and Meal Replacement Protocol in Early Type 2 Diabetes: A Prospective Interventional Case Series

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Introduction:
Intensive total diet replacement strategies have demonstrated type 2 diabetes (T2D) remission through sustained caloric restriction, though their intensity may limit feasibility in routine practice. The 5:2 intermittent fasting (IF) model may target remission-related mechanisms through periodic energy restriction that improves hepatic insulin sensitivity and reduces β-cell metabolic stress. This prospective interventional case series evaluates the feasibility and metabolic outcomes of a remission-targeted 5:2 IF combined with once-daily meal replacement (MRP) in medication-naïve adults with early T2D (<1 year duration) over 12 weeks.

Methods:
Three (N=3) medication-naïve adults, ages 38-45 years, females (2 patients), male (1 patient), and BMI 27 – 30 kg/m^2 with recent-onset T2D underwent structured 5:2 IF (two non- consecutive low-energy days weekly) alongside daily MRP for 12 weeks. Pre–and post- assessments included body weight, BMI, fasting blood glucose (FBS), HbA1c, lipid profile, and body fat mass.

Results:
All participants completed the intervention. Mean body weight decreased from 79.0 kg to 76.3 kg (3.4% reduction). Mean HbA1c declined from 8.8% to 7.1% (−1.7%). Two of three participants (66.7%) achieved HbA1c <7.0% (8.9%→6.9% and 9.2%→6.8%), while the third improved from 8.3% to 7.6%. Fasting glucose, triglycerides, and body fat mass have also improved.

Conclusion:
T2D remission was not achieved within 12 weeks. Nonetheless, the remission-targeted 5:2 IF plus once-daily MRP was feasible and led to clinically meaningful glycemic and metabolic improvements. Initiation of oral glucose-lowering therapy following this lifestyle phase may further optimise glycaemic control toward HbA1c <6.5%, supporting a staged metabolic management approach in early T2D.