

Implementing Therapeutic Carbohydrate Reduction (TCR) in a Primary Care Setting: A Feasibility and Patient Outcomes Study

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Background

Therapeutic Carbohydrate Reduction (TCR) has gained recognition for its benefits in weight management, glycemic control, MASLD, cancer treatment, IBS, neurologic conditions, and other metabolic disorders.^{1,2,3,4,5,6} While widely studied in specialized clinics, limited data exist on its implementation in primary care settings, where most patients receive care for chronic metabolic disease.

Objective

To evaluate the feasibility, adherence, and preliminary clinical outcomes of Therapeutic Carbohydrate Reduction (TCR) therapy implemented within a primary care practice.

Methods

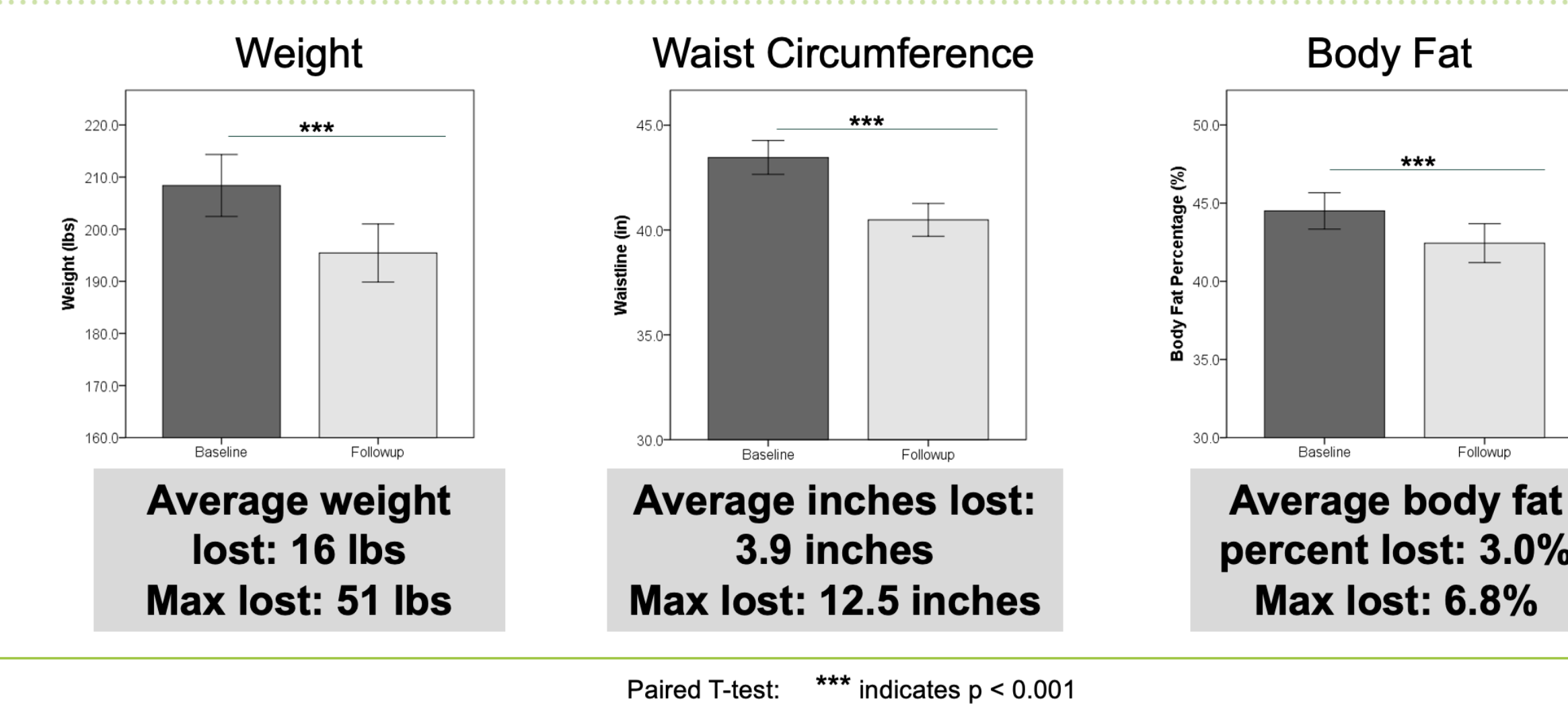
A pilot program was conducted at an urban primary care clinic involving a total of 444 adult patients primarily with obesity and/or type 2 diabetes between 2018-2024. Patients self-enrolled in an 8-week intensive educational series called the Low Carb Boot Camp (LCBC). Sixteen LCBC sessions occurred over this time course. Patients received individualized TCR counseling, meal plans (< 20 net carbs/day), serum ketone analyzer, biometric scale, educational materials, and weekly follow-up visits over 8 weeks.

levels, HOMA-IR, and adverse food related behaviors measured by pre and post Yale Food Addiction Scale (YFAS 2.0).⁷ YFAS was performed in LCBC #7-16.

Results

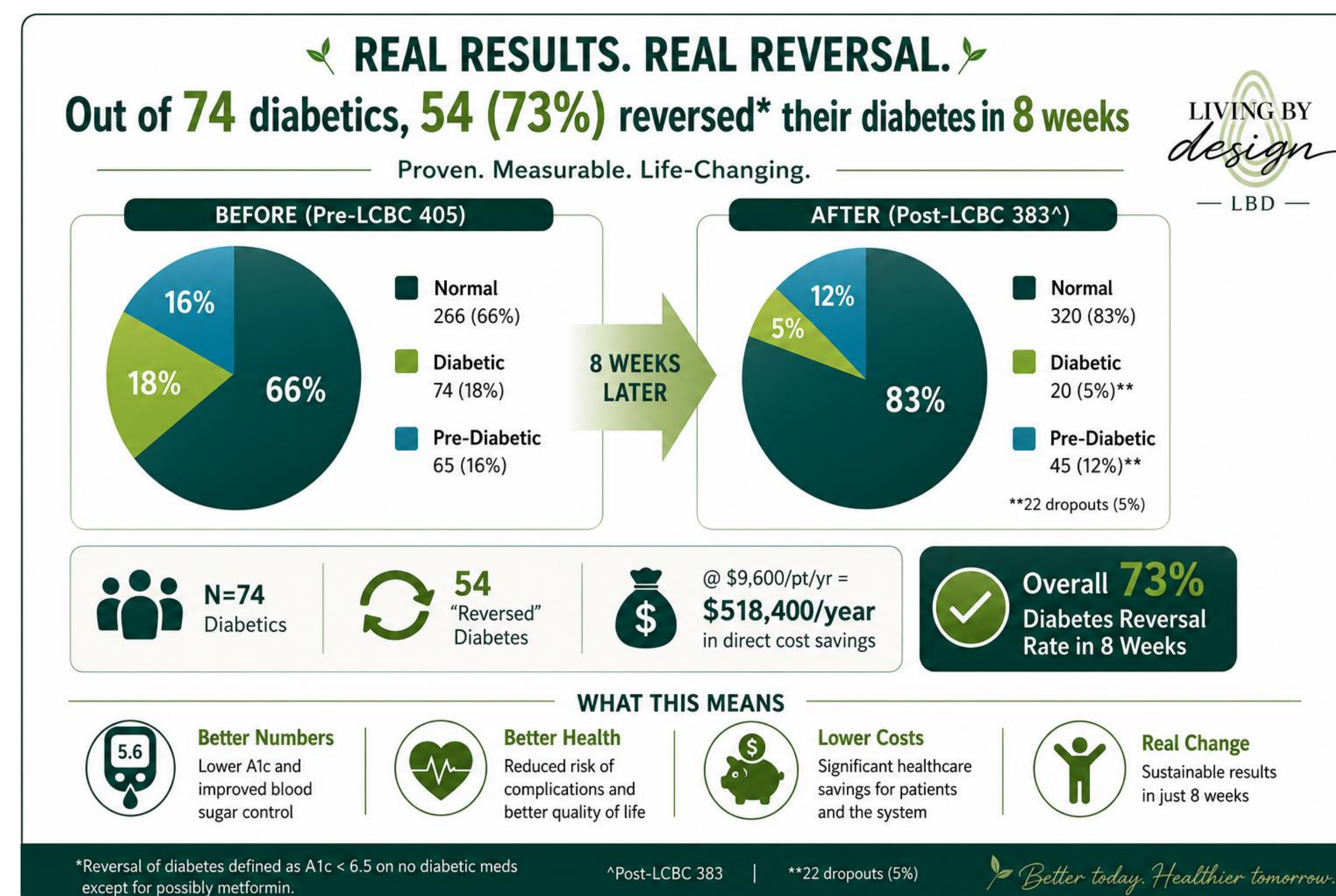
- 95% of participants (421/444) completed the 8-week intervention.
- Nutritional ketosis (serum BOHB > 0.5 mmol/L) was confirmed in all who completed the program.
- Mean weight loss was 16 lbs.

8-Week Low Carb Boot Camp participants had significant decreases in weight, waistline, and percent body fat.



Diabetes Reversal

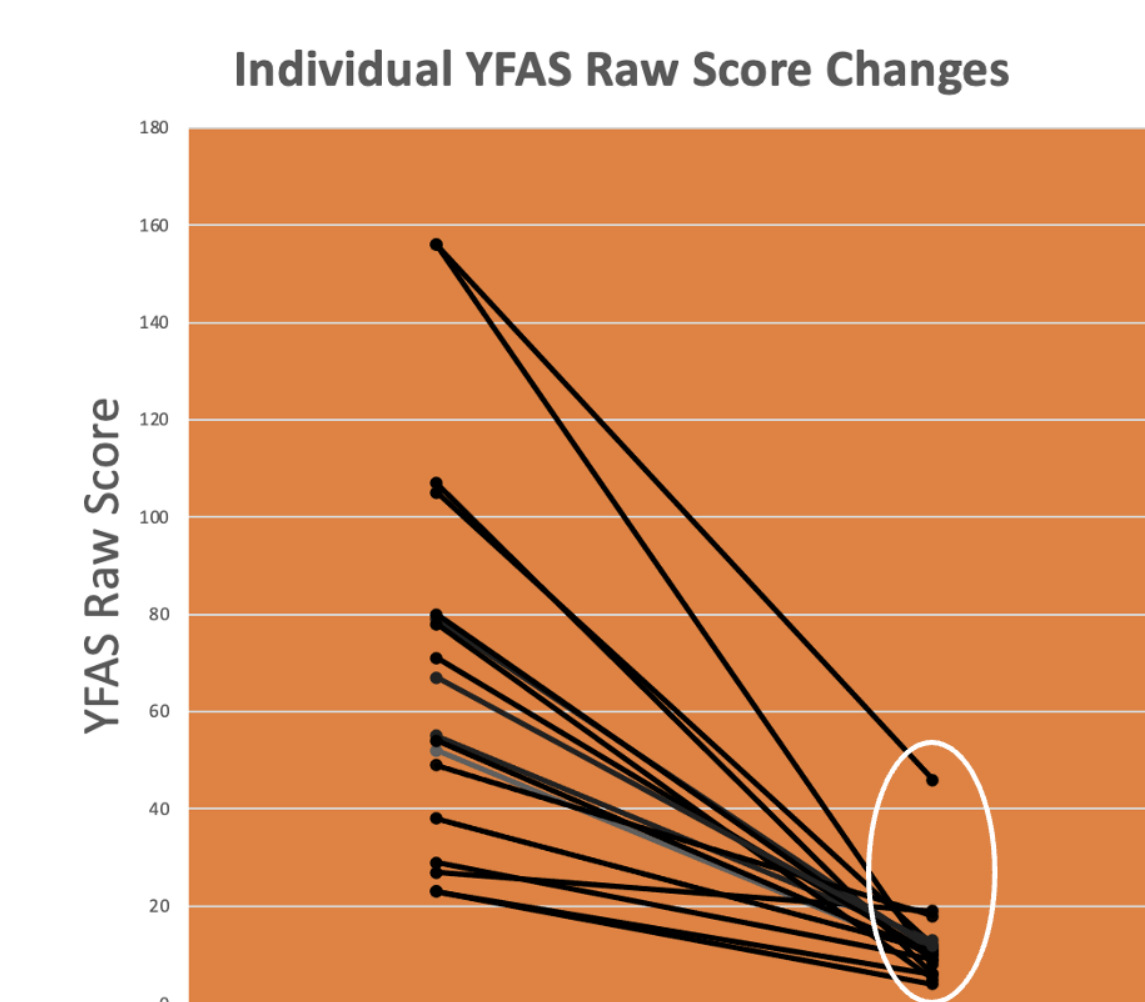
- Fasting insulin reduced from an average of 12.4 to 8.7 and HOMA-IR dropped from 3.5 to 2.1 representing a 30% and 40% reduction respectively.
- HbA1c decreased by an average of 0.4%.
- 78 Patients had T2D and 55 of these patients had A1c < 6.5 at the end of LCBC with reduction in medication. This equates to a 70% T2D reversal rate.



Food Addiction Reversal

- Average Pre-YFAS raw score was 70.6, Post-YFAS 22.2 representing a 69% reduction in adverse food related behaviors.

Reduction in Food Cravings Yale Food Addiction Scale

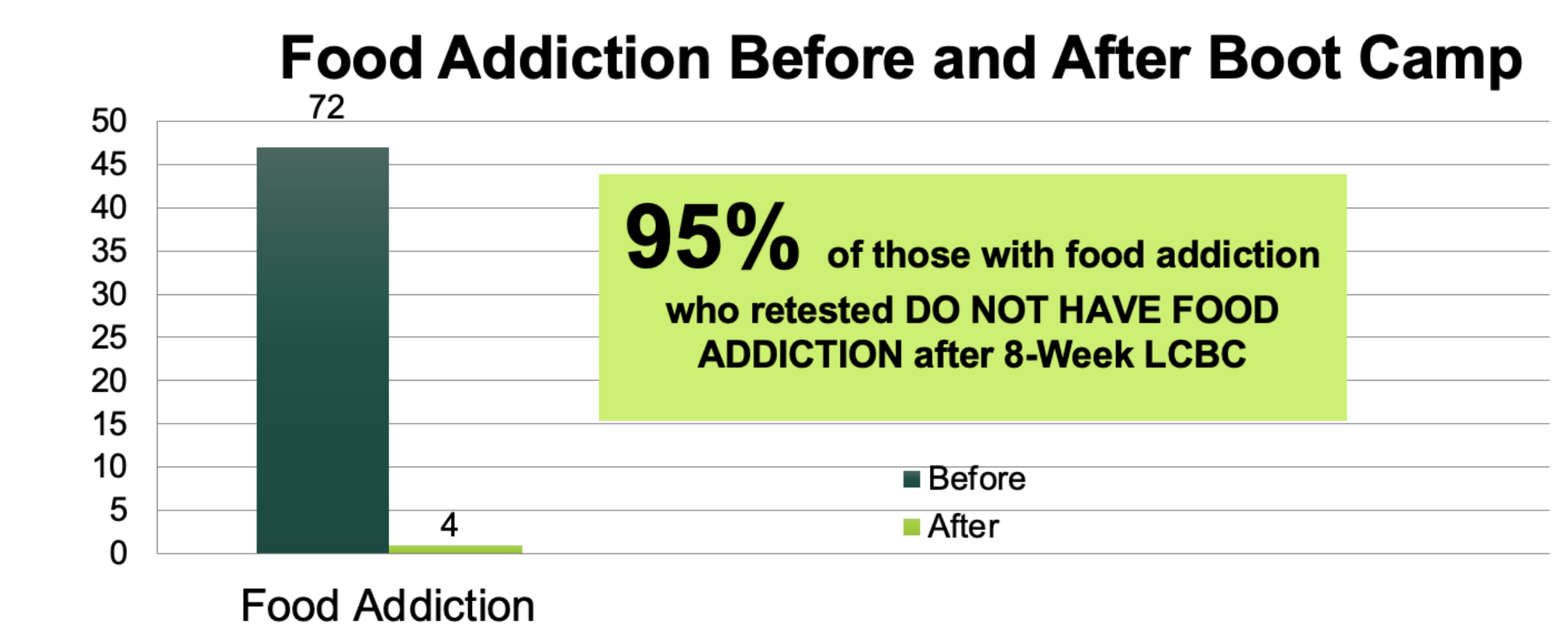


Adverse food behaviors drop an average of **69%**.

Here is a typical example of one LCBC (#14) and individual reduction in YFAS scores.

- At baseline, 72 participants (28%) met criteria for food addiction (FA) based on the YFAS. Of those, 53 completed the follow-up assessment (74% retake rate), and only 4 participants continued to meet criteria for FA.

Reduction in Food Addiction Boot Camps #7-16*



*Includes only those with flu YFAS. 74% (53/72) retested. 26% (19/72) did not retest.

Conclusion

TCR can be feasibly integrated into primary care practice with promising outcomes in weight, glycemic control, and food addiction. Larger studies are warranted to confirm these findings and optimize protocols.

- Public Health Collaboration. <https://phcuk.org/evidence/rcts/>.
- Reversal and Remission of T2DM – An Update for Practitioners. <https://doi.org/10.2147/VHRM.S345810>
- Beneficial Effects of the Ketogenic Diet on Nonalcoholic Fatty Liver Disease <https://doi.org/10.3390/jcm.13164857>
- β-Hydroxybutyrate suppresses colorectal cancer <https://doi.org/10.1038/s41586-022-04649-6>
- A very low-carbohydrate diet improves symptoms and quality of life in diarrhea-predominant irritable bowel syndrome. doi: 10.1016/j.cgh.2009.02.023.
- The Therapeutic Role of Ketogenic Diet in Neurological Disorders. doi: 10.3390/nu14091952.
- Development of the Modified Yale Food Addiction Scale Version 2.0 DOI: 10.1002/erv.2515



Outcomes assessed included adherence rates, changes in body weight, fat mass, visceral fat, HbA1c levels, insulin