# Evaluation of a Commercially Delivered Weight Management Program for Adolescents

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**Objective** To evaluate a commercially available, structured short-term weight management program designed for adolescents with obesity delivered by nonhealth professionals.

**Study design** A multisite parallel-group randomized controlled trial was conducted to evaluate a commercial 12-week lifestyle behavioral program in commercial weight management centers in Australia. Eligible participants (13-17 years, body mass index (BMI) z score ≥1.282 with no presenting morbidities) were randomized (n = 88) to intervention or wait-list, and the program was delivered by consultants at participating weight management centers. The primary outcome was change in BMI z score. Secondary outcomes included the psychometric variables quality of life, body-esteem, and self-esteem. Data was analyzed according to intention-to-treat principles.

**Results** Of 74 participants who consented to enter the study, 66 provided baseline anthropometric data and 12-week data were available for 55 individuals (74%). A significantly greater decrease in BMI z score in the intervention group (n = 32) was observed when compared with the wait-list control group, mean difference (MD) = –0.27 kg/m$^2$; 95% CI, –0.37,–0.17; $P < .001$). Participants allocated to receive the lifestyle intervention reported a greater improvement in body esteem (MD = 1.7, 95% CI, 0.3, 3.1; $P = .02$) and quality of life (MD = 5.9, 95% CI, 0.9, 10.9; $P = .02$) compared with the wait-list control group.

**Conclusions** A structured lifestyle intervention delivered by a commercial provider in an adolescent population can result in clinically relevant weight loss and improvements in psychosocial outcomes in the short term. Further research is required to evaluate long-term outcomes. *(J Pediatr 2017;185:73-80).*

**Trial registration** International Clinical Trials Registry: ISRCTN13602313.

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Obesity in childhood and adolescence tracks into adulthood[1,2] where it is associated with an increasing risk of longer term adverse physiological and psychological health outcomes.[3,4] Within Australia only 4 of the 8 States/Territories provide pediatric obesity services at a tertiary level,[5] and in practice, there are limited effective management tools for adolescent obesity readily available to treating physicians. Further compounding this problem is that few children and adolescents with obesity seek treatment.[6]

A 2011 Cochrane Review[7] summarized 10 studies that used differing approaches to engage with adolescents aged 13-18 years and reported an overall clinically, but not statistically, significant reduction in body mass index (BMI) z score (mean change = –0.09 kg/m$^2$; 95% CI, –0.20, 0.03) over a short-term intervention period (median period = 12 weeks). Reflexive analysis of completed trials suggest that those who have the greatest weight loss commence with lower BMI, less insulin resistance, and are from higher socioeconomic groups.[8] This suggests that the provision of more widely accessible interventions to those with modest weight issues before the development of complications would be advantageous.

For adults seeking weight control, commercial diet providers have proved popular with the public.[9] If the food is supplied as part of the program, as is typical of a number of commercial weight management programs, reported weight loss is greater.[10]

Commercial operators can offer extended reach and resources beyond that which can realistically be delivered by an already stretched health service,[11] and some preliminary data indicate their affordability and viability when compared with weight loss interventions run by health professionals.[12]

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|---|---|
| BMI | Body mass index |
| EAT-26 | Eating Attitudes Test-26 |
| IWQoL-Kids | Impact of Weight on Quality of Life-Kids |
| JenMe | Jenny Craig's adolescent weight management program |
| MDs | Mean differences |

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For children and adolescents with obesity, however, commercial providers of weight management are scarce. Jenny Craig Weight Loss Centers is a commercial provider of weight control that has shown efficacy in adult women. In a randomized trial 167 women who were overweight or obese, allocated to receive a commercial weight-loss program at Jenny Craig Centers, lost an average 10.1 kg (95% CI, 9.0-1.2) over 12 months compared with an average loss of 2.4 kg (95% CI, 1.2-3.6) in 111 women allocated to usual care.[10]

This study reports on an independent evaluation of Jenny Craig's adolescent weight management program (JenMe). The primary objective was to investigate whether there was an association between intervention received (JenMe program/wait-list control) and change in anthropometric measurements, particularly BMI z score, at the end of the 12-week study period.

## Methods

This multisite parallel-group randomized controlled trial (International Clinical Trials Registry ISRCTN13602313) took place in Australia between April 2013 and January 2015 (recruitment period was 12 months). Participants were invited to enter the study if they were seeking weight management in any of the Jenny Craig Centers located across Victoria, Western Australia, New South Wales, or the Australian Capital Territory. The study was conducted according to the Declaration of Helsinki and approved by the Human Research Ethics Committee of Monash University (CF11/3687—2011001940). Written informed consent was obtained from all parents/guardians and assent from all participants before their commencement in the study.

### Participant Eligibility and Recruitment

Participants aged 13-17 years were initially screened for eligibility by the in-center consultants. Full methodologic details are reported in the study protocol.[13] Those who had a BMI z score ≥90th percentile for age and sex and requested further information provided written consent to be contacted by the research coordinator. Participants contacted by the researcher who gave verbal consent to participate in the study were allocated to a treatment group, were instructed to complete paper-based questionnaires and consent forms, and had an appointment booked at a participating center. Questionnaires and consent forms could be returned either by return post or in person when the participant visited the center for their week 0 appointment. Because of ethical restrictions, a participant could not be said to have entered the study until their signed consent was received. Baseline anthropometric measures were recorded at the week 0 visit. Participants allocated to the wait-list control group were offered the commercial weight management program at the end of the control period (12 weeks), and all participants were offered free adolescent membership (valid until 18 years of age) and a 50% discount on Jenny Craig food provisions for 12 months from commencement of the program.

### Randomization, Blinding, and Masking

Allocation to treatment group (intervention or wait-list control) occurred using computer-generated random numbers by the statistician. Individuals were allocated 1:1 to the intervention group or wait-list control. Randomization was stratified by Jenny Craig Center, and within each center the block size was randomly selected to be either 6 or 8, and was unknown to anyone except the study statistician. Treatment allocation was stored in an online database, accessible only by the study statistician, and was only revealed to the research coordinator on the day each participant was informed of their group allocation. Because of the nature of the intervention, participant or consultant blinding to group allocation was not feasible.

### Intervention

The JenMe program is a 12-week face-to-face program developed by dietitians at Jenny Craig. It contains one-on-one sessions with an in-house (Jenny Craig) trained consultant that cover dietary and behavioral education as well as progress monitoring.[13] Participants who were allocated to the intervention group met with a consultant on a weekly basis for 13 consecutive sessions (week 0 followed by 12 consecutive sessions). Initially, participants followed menus that included prepackaged food provided by the commercial program in combination with their own grocery items. However, the menu planning was individualized, and each participant with the support of their consultant and parent or guardian learned how to plan their own menus using all of their own foods at a pace that was acceptable to them.

**Wait-List Control.** Participants assigned to the wait-list control group met with a consultant and received the standard healthy eating guidelines, the "Healthy Eating for Children: booklet[14] and were advised to maintain their current lifestyle habits for the control period.

### Outcome Measures

Demographic and social characteristics were measured by questionnaire before treatment allocation. Anthropometric, dietary intake, physical activity and sedentary behavior, and psychosocial outcomes were measured at baseline (week 0) and study completion (week 12) in both intervention and control groups. Participants allocated to the intervention group who completed the study, regardless of whether they were still an active client of Jenny Craig were further followed up at 36 weeks (6 months postintervention) to assess weight-loss maintenance.

**Anthropometry.** Weight, height, and waist circumference measurements were taken by trained Jenny Craig consulting staff using standard operating procedures at baseline and program completion. Weighing scales were the same in all centers (Tanita UM-075 scales; Tanita Health Equipment H.K. Ltd, Tsimshatsui East, Kowloon, Hong Kong). BMI z score was calculated by the lambda-mu-sigma method using Center for Disease Control reference data,[15] which takes into account age and sex. Waist