Comparison of two ready-to-eat cereals as partial meal replacements in a 2-week weight loss plan

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Studies show rapid weight loss with short-term use of ready-to-eat (RTE) breakfast cereals as partial meal replacements. This study was designed to compare 2 wk weight loss from partial meal replacements of Special K® Original (Kellogg Company) vs. a calorie-matched whole grain control cereal (General Mills, Inc.). Overweight women (42 ± 11 y; 31.7 ± 4 kg/m2) were randomized to either Special K® (n=32) or control (n=32). All subjects were instructed to replace their usual breakfast and lunch or dinner with a 100 kcal serving of cereal, 2/3 c skim milk and fruit daily for 2 wks. Body weight, DEXA body composition, and circumference measurements were obtained at 0 and 2 weeks and were analyzed by repeated measures ANOVA. After 2 wks, women lost 2.9 ± 2.6 lbs ($p<0.001$), with the control group losing significantly more weight than Special K® (-3.6 ± 2.9 lbs vs. -2.2 ± 2.0; $p=0.026$). Women reduced waist circumference (-0.4 ± 1.0 in; $p=0.003$), with no significant difference between groups. No significant effects of time or group were observed for fat mass, % body fat or hip circumference. Results show that replacing two meals daily for 2 wks with a 100 kcal serving of either Special K® Original or a whole grain RTE cereal, served with skim milk and fruit, can help reduce body weight and waist circumference.

Comparison of two 10-week diet and exercise programs for weight loss in women

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To compare the effects of two diet and exercise programs on weight and body composition, overweight, sedentary women (41±11 y; 33.5±4.5 kg/m2) were randomized into 2 different 10 wk weight loss programs. Group A (A; n=45) replaced 2 meals/d with Special K® cereal (SK; Kellogg Company), skim milk and fruit for 2 wks, then reduced ~500 kcals/d by eating the SK breakfast and following general diet advice for wks 3-10. SK cereal bars and general exercise advice were given to group A. Group B (B; n=45) followed the Curves® program, a 1-wk 1,200 kcal/d, then a 9-wk 1,600 kcal/d structured diet, which included whole grain cereals and snack bars (General Mills, Inc.). Group B completed the Curves® 30-min circuit training 3 d/wk plus walking 4 d/wk. Changes in body weight; body composition (DEXA); and waist and hip circumferences from baseline to wk 10 were compared between groups. Compared to group A, group B lost more weight (-3.5±5.6 vs -6.8±8.2 lbs; p=0.029); fat mass (-1.9±3.7 vs -5.9±9.6 lbs; p=0.01); and inches from hips (-0.08±2.3 vs -1.8±2.9 in; p=0.003) and waist (-0.2±2.2 vs -1.2±2.3 in; p=0.031). A non-significant trend for greater loss of % body fat was found for group B vs A (-0.27±1.7 vs -1.2±2.9%; p=0.06). This study shows that a structured diet and exercise program, like Curves®, is more effective in promoting weight loss and favorable body composition changes over 10 wks.

A comparison of two weight maintenance programs following weight loss in women

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Women (43±10 y; 33.6±4.7 kg/m2) randomized to group B (n = 37; Curves® program of a reduced-calorie diet including whole grain cereals and snack bars [General Mills, Inc.] and circuit training 3d/wk) lost more weight over 10 wks than women randomized to group A (n=40; a reduced-calorie program that included Special K® cereals and cereal bars [Kellogg Company]) (-6.7±8.5 vs -3.5±5.8 lbs, respectively; Q p=0.005). Following 10-wk weight loss, women were instructed to continue to follow their respective diet and exercise recommendations, but to consume adequate kcals to maintain weight. Changes in body weight and DEXA-measured fat mass at 1-, 3- and 6- months of weight maintenance were compared between groups. Both groups surpassed 10-wk weight loss during the maintenance phase, with change from pre-study greater for group B than group A at 1- (-8.3±9.9 vs. -4.0±6.8 lbs; Q p=0.005), 3- (-9.0±11.6 vs. -5.1±9.9 lbs; Q p=0.005) and 6-months (-7.2±13.0 lbs vs. -4.8±13.9; Q p=0.005). Changes in fat mass were also greater for group B than group A at 1- (-5.5±7.0 vs. -2.3±5.6lbs; Q p=0.015), 3- (-6.2±9.0 vs -3.2±8.2 lbs; Q p=0.015) and 6-months (-5.2±8.0 vs. -3.3±10.6 lbs; Q p=0.015). Results suggest that women can achieve and maintain significant, favorable changes in body weight and body composition following a structured diet and exercise program, like Curves®.

Effects of the Curves® fitness & weight loss program on body composition & resting energy expenditure

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693 sedentary women (47±12 yrs, 163±7 cm; 92±17 kg; 45±4% body fat) were assigned to a control group (C), an exercise group (E); or, a high carbohydrate or a high protein diet group for 10-weeks. Diets consisted of 1,200 kcal/d for 1-wk and 1,600 kcal/d for 9 wks. Diets were 55% CHO, 15% P, and 30% F (HC) or 7-15% CHO, 55-63% P, and 30% F (HP). Subjects in the exercise groups participated in a supervised Curves fitness program 3-d per wk. DEXA body composition and REE measurements were obtained at 0 & 10 wks and were analyzed by repeated measures ANOVA. Data are presented as means ± SD changes from baseline for the C, E, HC, and HP groups, respectively. Subjects who dieted experienced a significantly greater (p<0.001) loss in scanned total mass (-0.4±2.2; -0.4±2.1; -2.9±3.6; -3.8±4.0 kg), fat mass (-0.4±2.0; -0.7±1.8; -2.3±2.8; -3.0±3.3 kg), and body fat (-0.3±1.9; -0.7±1.6; -1.3±2.1; -1.6±2.9 %). Weight loss and fat loss in the HP group was significantly greater than the HC group although changes in percent body fat were not significantly different. REE decreased slightly in the HC, HP, and C groups while increasing in the E group (-0.6±2.1; 0.3±2.0; -0.4±2.1; -0.7±2.5 kcal/kg/d). Results indicate that the Curves program is effective to promote weight loss without marked reductions in REE particularly when following a HP diet.

Effects of the Curves® fitness & weight loss program on markers of health & fitness

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633 sedentary women (47 ± 11 yrs, 163 ± 7 cm; 92 ± 18kg; 45 ± 4 body fat) were assigned to a control group (C), an exercise group (E); or, a high carbohydrate or a high protein diet group for 10-weeks. Diets consisted of 1,200 kcal/d for 1-wk and 1,600 kcal/d for 9 wks. Diets were 55% CHO, 15% P, and 30% F (HC) or 7-15% CHO, 55-63% P, and 30% F (HP). Subjects participated in the Curves fitness program 3-d per wk. At 0 & 10-wks, subjects donated fasting blood samples and had measurements determined. Data are presented as means ± SD from baseline at 10-wks for the E, HC, and HP groups, respectively. Significant time and/or group x time effects (n=548) were observed in changes in total cholesterol (-0.0 ± 20; -1.8 ± 18; -3.5 ± 15 %), LDL-c (-1.4 ± 22; -2.0 ± 21; -3.2 ± 21 %), HDL-c c (0.9 ± 10; -1.7 ± 11; -2.2 ± 8 %), and triglycerides (11 ± 41; -6.2 ± 34; 3.0 ± 39 %). No differences were observed in glucose (0.3 ± 20; 0.2 ± 15; -1.6 ± 17 %) or cholesterol:HDL ratio (-0.6 ± 13; 3.1 ± 20; 1.7 ± 17 %). Waist(-1.2 ± 5; -2.7 ± 7; -3.2 ± 7 %) and hip (-0.1 ± 5; -2.5 ± 4; -2.4 ± 5 %) measurements decreased with diet groups experiencing greater effects (n=586). Resting HR (-3.3 ± 13; -3.7 ± 14; -2.9 ± 15 %), SBP (-0.4 ± 13; -2.2 ± 12; -1.9 ± 12 %), and DBP (-0.8 ± 13; -2.8 ± 12; -0.8 ± 13 %) decreased in all groups (n=633). Bench press (10.5 ± 17; 8.4 ± 18; 7.4 ± 15 %), leg press (10.4 ± 20; 10.3 ± 18; 10.3 ± 20 %), and aerobic capacity (14.8 ± 95; 7.9 ± 15; 12.8 ± 50 %) were increased in all groups (n=490).

Effects of the Curves® fitness & weight loss program in women with medically-managed conditions: body composition and resting energy expenditure

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146 sedentary women (50±10 yrs, 162±6 cm; 95±20 kg; 46±5% body fat, 36±7 kg/m2) with medically-managed conditions were assigned to an exercise & no diet group (E) or a low calorie high carbohydrate (HC) or high protein (HP) diet. Diets consisted of 1,200 kcal/d for 1-wk and 1,600 kcal/d for 9 wks of either HC (55% C, 15% P, 30% F) or HP (15% C, 55% P, 30% F). During weeks 10-14, subjects consumed a HC maintenance diet (2,600 kcals/d) and were instructed to diet for 2-d at 1,200 kcals/d if they gain 3 lbs. Subjects participated in a supervised Curves fitness program 3-d per wk. DEXA body composition and REE measurements were obtained at 0, 10, and 14 weeks and were analyzed by repeated measures ANOVA. Data are presented as means ± SD changes from baseline for the E, HC, and HP groups, respectively, after 10 and 14 weeks. Subjects in the HP group lost more weight (-2.3±6.6, -2.9±7.3; -7.9±8.7, -8.3±9.8; -10.0±6.6, -10.6±7.8 lb, p=0.000) and fat mass (-3.1±6.4, -3.4±6.7; -3.9±7.6, -4.0±7.6; -7.6±5.6, -8.3±6.8 lb, p=0.001). Subjects in the E group increased REE while subjects in the diet groups only slightly decrease REE (17.1±2.1, 18.0±3.0, 18.5±3.2; 17.3±1.8, 16.8±2.6, 16.5±2.3; 17.0±3.0, 16.4±2.8, 16.5±2.3 kcal/kg, p=0.001). Results indicate that the Curves program is effective to promote weight loss without marked reductions in REE in women with medically-managed conditions.

Effects of the Curves® fitness & weight loss program in women with medically managed conditions: training adaptations

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146 sedentary women (50±10 yrs, 162±6 cm; 95±20 kg; 46±5% body fat, 36±7 kg/m2) with medically-managed conditions were assigned to an exercise & no diet group (E) or a low calorie high carbohydrate (HC) or high protein (HP) diet. Diets consisted of 1,200 kcal/d for 1-wk and 1,600 kcal/d for 9 wks of either HC (55% C, 15% P, 30% F) or HP (15% C, 55% P, 30% F). During weeks 10-14, subjects consumed a HC maintenance diet (2,600 kcals/d) and were instructed to diet for 2-d at 1,200 kcals/d if they gain 3 lbs. Subjects participated in a supervised Curves fitness program 3-d per wk. Fitness and health measurements were obtained at 0, 10 and 14 weeks. Data are presented as means ± SD changes from baseline. Training significantly increased (p<0.05) 1RM bench press (15±22%), 1RM leg press (23±29%), BP lifting volume (37±55%), LP lifting volume (23±29%), and relative peak oxygen uptake (7.4±19%) while decreasing waist circumference (-3.2±5%), hip circumference (-2.8±4%), resting HR (-3.0±15%), total CHL (-1.4±16%), and LDL (-2.8±18%). No significant differences (p>0.05) were observed in changes in resting SBP (-0.8±13%), DBP (-0.7±14%), glucose (0.1±19%), triglycerides (0.8±34%), or HDL (-0.1±20%). Results indicate that the Curves program improves selected markers of health and fitness in women with medically-managed conditions.

Relationship of resting energy expenditure to body composition and clinical health markers

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848 sedentary, obese women (47±11 yrs, 92±18 kg, 163±7 cm, 45±4% body fat) were medically screened prior to participation in an exercise and weight loss program. Medical data and fasting blood samples were collected and a correlation analysis was used to examine relationships between resting energy expenditure (REE), body composition and serum markers of health and safety. Baseline REE levels were significantly (all $p<0.001$) correlated to systolic blood pressure ($r=0.093$), diastolic blood pressure ($r=0.199$) and resting heart rate ($r=0.166$) in addition to higher levels of body mass ($r=0.666$), DEXA fat mass ($r=0.569$), DEXA fat-free mass ($r=0.694$), DEXA % body fat ($r=0.195$),waist circumference ($r=0.423$) and hip circumference ($r=0.549$). In addition, REE values were positively correlated ($p<0.001$ to 0.010) to triglycerides ($r=0.104$), total cholesterol: HDL ratio ($r=0.112$), uric acid ($r=0.130$) and negatively correlated to HDL cholesterol ($r= -0.161$). REE levels were not correlated to total cholesterol ($r= -0.038$; $p=0.29$), LDL cholesterol ($r= -0.012$; $p=0.75$) and glucose levels ($r=0.060$; $p=0.10$). Data from this large sample provide continued support that management of REE levels is intimately related to several variables central to obesity and heart disease.

Relationship of uric acid to body composition, heart disease risk factors and energy expenditure

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848 sedentary, obese women (47±11 yrs, 92±18 kg, 163±7 cm, 45±4% body fat) were medically screened prior to participation in an exercise and weight loss program. Medical data and fasting blood samples were collected and a correlation analysis was used to examine relationships between baseline uric acid, body composition and associated risk factors for heart disease. Baseline uric acid levels were significantly correlated to several measures of body composition: body mass (r=0.154), waist circumference (r=0.142), hip circumference (r=0.145), DEXA fat mass (r=0.155), DEXA fat-free mass (r=0.122) and DEXA % body fat (r=0.106). Higher uric acid levels were also positively correlated with higher triglyceride levels (r=0.091), total cholesterol: HDL ratio (r=0.097) and lower HDL cholesterol (r= -0.097). Uric acid levels were positively correlated with baseline measures of resting energy expenditure (r=0.130). Uric acid levels were not significantly correlated with age (r= -0.012), resting heart rate (r= -0.021), systolic blood pressure (r=0.032), diastolic blood pressure (r=0.055), total cholesterol (r=0.023), LDL cholesterol (r=0.054) and blood glucose levels (r= -0.041). Although correlations are modest, data from this sample (n=848) suggest that maintenance of uric acid may be an important consideration in managing obesity and metabolic syndrome.