

# Behavioral Intervention Benefits Severely Obese

BY DOUG BRUNK

FROM THE ANNUAL MEETING OF THE OBESITY SOCIETY

SAN DIEGO – Obese patients with a body mass index of 40 kg/m<sup>2</sup> or greater who were enrolled in a behavioral weight-loss program achieved similar levels of weight loss and reductions in cardiovascular disease risk factors, compared with their counterparts with lesser degrees of obesity, results from a large ongoing trial showed.

The findings suggest that behavioral weight-loss programs are a viable treatment option for class III obese patients, Jessica L. Unick, Ph.D., said at the meeting.

"Severe obesity is the fastest-growing segment of the overweight population, increasing at a rate

of two to three times faster than obesity alone," said Dr. Unick of the centers for behavioral and preventive medicine at Miriam Hospital, Brown University, Providence, R.I.

"Given these alarming statistics as well as the known health consequences associated with this magnitude of obesity, it's critical that we begin to identify successful treatment options for this population."

She pointed out that currently, behavioral weight-loss programs are typically recommended for individuals with a BMI of less than 40. As a result, "severely obese individuals are often excluded from clinical weight-loss trials, usually due to other obesity-related comorbidities or upper BMI cutoff inclusionary criteria for the study. Therefore, we have limited data regarding the effectiveness of

behavioral weight loss programs in this population."

For the study, Dr. Unick and her associates examined whether severely obese patients randomized to the intensive lifestyle intervention arm of the Look AHEAD trial achieved similar weight losses, experienced comparable changes in cardiovascular disease risk factors, and had been equally adherent to program recommendations at 1 year of treatment, compared with those who had lesser degrees of obesity. The Look AHEAD trial is an ongoing, multicenter, randomized clinical trial examining the long-term effects of an intensive lifestyle intervention program on cardiovascular morbidity and mortality in 5,145 overweight or obese patients with type 2 diabetes from 16 centers in the United States. The individuals will be followed for up to 13.5 years.

**"It's critical that we begin to identify successful treatment options for this population."**

DR. UNICK

years of age, have a BMI of at least 25 (or at least 27 if taking insulin), have a hemoglobin A<sub>1c</sub> level of 11% or lower, and meet certain cardiovascular disease cutoff values, including triglycerides below 600 mg/dL and a blood pressure of less than 160/100 mm Hg. The patients were randomized to an intensive lifestyle intervention or to diabetes support and education. The study conducted by Dr. Unick and her associates evaluated only the 2,503 patients randomized to the intensive lifestyle intervention.

The researchers grouped the study participants into one of four categories based on BMI: overweight (25-29), class

I obese (30-34), class II obese (35-39), and class III obese (40 or greater). Their mean age at baseline was 59 years.

To be eligible for the Look AHEAD trial, patients had to have type 2 diabetes, be 45-76

## VITALS

**Major Finding:** After 1 year of participation in an intensive lifestyle intervention program, patients with class III obesity lost a mean of 11 kg, compared with 9 kg and 6 kg in patients with class II and class I obesity, respectively.

**Data Source:** An analysis of 2,503 patients in the multicenter, randomized Look AHEAD clinical trial.

**Disclosures:** The study was funded by the National Institute of Diabetes and Digestive and Kidney Diseases. Dr. Unick said she had no conflicts of interest.

I obese (30-34), class II obese (35-39), and class III obese (40 or greater). Their mean age at baseline was 59 years.

For the first 6 months of the study, participants attended three weekly group meetings and one individual meeting per month. This was reduced to two group meetings and one individual meeting per month during months 7-12.

Patients in the intensive lifestyle intervention arm were asked to reduce their dietary intake to 1,200-1,800 calories per day. They were provided meal replacements in the form of two meals and one snack per day to help facilitate that goal. They were also asked to progressively increase their level of physical exercise to 175 minutes per week.

"In addition, the participants were given an initial weight loss goal of 10% of initial body weight, and there was a strong behavioral component to this intensive lifestyle intervention," Dr. Unick said.

She reported that at 1 year, class III obese patients lost a mean of 11 kg, which was significantly greater than the weight loss experienced by the other groups (a mean of 9 kg in the class II obese group, 8 kg in the class I obese group, and 6 kg in the overweight group).

On average, class III obese patients lost 9% of their baseline weight, and 39% lost

10% or more of their baseline body weight. These reductions in weight were significantly greater than those experienced by the overweight group and were comparable to those achieved by

patients in the class I and class II groups.

All weight groups had similar improvements in cardiovascular disease risk factors, with the exception of HDL cholesterol level. The class III group had less of an improvement in HDL cholesterol from baseline to 1 year, compared with the other BMI groups.

By the end of 1 year, 42% of people in the class III group met the American Diabetes Association goal of an LDL cholesterol less than 100 mg/dL, 65% met the ADA goal of a systolic blood pressure less than 130/80 mm Hg, and 72% met the ADA goal of an HbA<sub>1c</sub> less than 7%. The results were similar to those in participants who had lesser degrees of obesity.

A similar proportion of all weight groups attended all treatment sessions (an average of more than 80%), consumed a similar number of meal replacements (average of 333), and improved the number of calories expended by physical activity (an average of 761 calories per week).

"Based upon these data, there appears to be no reason why we should be excluding severely obese individuals from behavioral weight-loss treatment programs," Dr. Unick commented. "Behavioral programs should be considered another treatment option for individuals in this lower end of the severe obesity range." ■



## Low Vitamin C Levels Linked to Obesity in Children

BY DOUG BRUNK

FROM THE ANNUAL MEETING OF THE OBESITY SOCIETY

SAN DIEGO – Low serum levels of vitamin C are associated with obesity in children aged 6-11 years, results from an analysis of data from the National Health and Nutrition Examination Survey showed.

"Childhood nutrition and obesity are significant public health concerns that may result in abnormal growth and development," researchers led by Kelly Ewing wrote in a poster presented at the meeting. "Although numerous studies have characterized vitamin C intake and serum levels, and have demonstrated an inverse association with obesity in adults, as far as we are aware, no studies to date have looked at this relationship

## VITALS

**Major Finding:** The odds of being obese were 0.42 lower among children with serum vitamin C levels of 76.1-195 micromol/L, compared with children who had serum vitamin C levels of 9-76 micromol/L.

**Data Source:** A study of 1,133 healthy weight or obese children aged 6-11 years who were included in the NHANES data sets from 2003-2004 and 2005-2006.

**Disclosures:** Ms. Ewing had no relevant financial conflicts.

in a pediatric population."

She and her associates performed a cross-sectional, retrospective study of 1,133 healthy weight or obese children aged 6-11 years who were included in the NHANES data sets from 2003-2004 and 2005-2006, for whom relevant medical, socioeconomic, physical activity, anthropometric, and serum vitamin C data were complete.

The researchers divided the children into two groups based

on their serum vitamin C concentrations: a lower 50% group (defined as having a vitamin C level of 9-76 micromol/L), and an upper 50% group (vitamin C level of 76.1-195 micromol/L).

Of the 1,133 children, 876 (77%) had a healthy weight and 257 (23%) were obese, said Ms. Ewing, who worked on the study while completing her master's degree in the department of clinical research at the Campbell University College of

Pharmacy and Health Sciences, Buies Creek, N.C.

The researchers then conducted a bivariate analysis to identify significant associations between weight status and vitamin C concentration, race, sex, physical activity, and socioeconomic status. They found that that the odds of being obese were 0.42 lower in the upper 50% vitamin C level group, compared with the lower 50% group, when socioeconomic status was also considered.

Hours of physical activity and sex were not significant factors in the link between serum vitamin C levels and obesity, but race and income were. A higher proportion of nonwhite children were obese, compared with white children (26% vs. 16%, respectively), and a higher proportion of obese children

were from households with an income of \$24,999 or less per year (29% vs. 20%).

"I was surprised that socioeconomic status didn't kill the relationship," Ms. Ewing said in an interview. "I figured that would have a bigger effect than just the vitamin C itself, because it's very established in the medical literature that obesity and economic status are inversely related."

She acknowledged certain limitations of the study, including the fact that there was no way to know if serum was drawn while the children were fasting. "Our biggest limitation is that we were not sure what the kids were eating," she added. "There was a food frequency questionnaire that we looked at. However, it was a yearlong recall that did not account for serving size." ■