

Assessing changes in anthropometrics and other physical fitness measures in response to a four-week residential weight loss camp. Ashley Glade, SPT; Susan Racette, PhD and Jean Huelsing RN, BSN, MEd. Program in Physical Therapy, Washington University School of Medicine, gladea@msnotes.wustl.edu

Purpose: Primary Aim: Assess changes in anthropometrics (body weight, body mass index [BMI], circumferences) and cardiopulmonary fitness (resting blood pressure, heart rate, and respiratory rate and time to complete a one-mile run) in overweight and obese adolescents attending a four-week residential weight loss camp from 2004-2007. Secondary Aim: Assess functional outcomes (balance, flexibility and aerobic fitness) and quality of life (Peds QL) in a subset of 20 campers during the summer of 2007. **Subjects:** 156 campers (ages 10-20 yrs, 69% female, BMI 35 ± 6 kg/m²) attending Camp Jump Start, a four-week residential camp in Carbondale, IL (2004-2006) and Imperial, Missouri (2007). **Methods and Materials:** All assessments were done before and after the four-week camp session. The camp curriculum required campers to be physically active daily and to consume a calorie-restricted, nutritionally balanced diet. The results were analyzed with a paired t-test. Significance was accepted at $P < 0.01$ unless otherwise noted. **Results:** For the group of 156 subjects, improvements were observed in the following anthropometric measures: body weight (-7.6 ± 3 kg), BMI (-3 ± 1 kg/m²), waist circumference (-7.5 ± 4 cm), hip circumference (-6.1 ± 3 cm), waist-to-hip ratio (-0.01 ± 0.04), neck circumference (-2 ± 1 cm), upper arm circumference (2.3 ± 1 cm), and thigh circumference (-4 ± 2 cm). The average time to run one mile decreased significantly (-3 min 51 sec \pm 2 min 29 sec). Resting heart rate dropped (-11 ± 7 bpm), as did resting systolic (-9 ± 10 mmHg) and diastolic blood pressure (-9 ± 7 mmHg). In the subset of 2007 campers (N=20), floor to stand times demonstrated a downward trend (-0.93 ± 1.35 sec, $p=0.05$), overall quality of life improved ($+5\pm 10$ points), and the emotional sub-scale score improved ($+13\pm 7$ points). **Conclusions:** After four weeks at a residential lifestyle change camp, overweight and obese adolescents made significant improvements in body composition, cardiopulmonary fitness, functional movement and quality of life. This indicates that increased physical activity combined with a low-calorie diet in a supportive environment is an effective method for improving the health of these young people. **Funding Source:** T32 Predoctoral Interdisciplinary Clinical Research Training Program