

Changes in Health Behaviors, Body Composition, and Physical Fitness during FitKids360 On The Move

Elitsa Nicolaou¹, Jared Tucker², Kathleen Howard³, Heather Saturley⁴, and Keyuana Rosemond⁴.

¹Michigan State University College of Human Medicine, East Lansing, Michigan. ²Helen DeVos Children's Hospital, Healthy Weight Center, Grand Rapids, Michigan. ³Forest Hills Pediatrics, Grand Rapids, Michigan. ⁴Health Net of West Michigan, Grand Rapids, Michigan.

Background: FitKids360 OnTheMove (OTM) is a 10-week walk-to-run 5k program available to graduates of FitKids360, a Stage 2 pediatric weight management program. OTM was developed as a long-term follow-up and avenue to apply previously learned behaviors.

Objective: The primary aim of this project is to evaluate changes in anthropometry, health habits, and aerobic fitness over the course of the OTM program.

Design/Methods: This study used a prospective cohort analysis of children who participated in OTM in 2014. Measures were obtained at the beginning and end of the program. Aerobic fitness was assessed using the Progressive Aerobic Cardiovascular Endurance Run (PACER) test. The PACER is an aerobic capacity test that pushes individuals to their maximal cardiovascular endurance via 20-meter runs paced with a beep at incrementally shorter frequencies. Changes in lifestyle were evaluated through the use of the validated Family Nutrition and Physical Activity (FNPA) Survey, as were changes in height, weight, BMI, and percent body fat. Data were analyzed for changes among the sample as a whole, and individually by gender and age group (<10y, ≥10y) using a 1-way repeated measures analysis of variance (RM-ANOVA). Differences in outcomes changes between genders and age groups were compared using a 2-way RM-ANOVA.

Results: A total of 36 participants (61% female) with a mean age of 9.3 ± 2.4 years were evaluated at baseline, and 25 completed the program and follow-up assessments (69% retention). FNPA scores improved significantly overall ($p < 0.01$), and among both males ($p = 0.01$) and females ($p = 0.02$). Percent body fat improved more in males ($-4.2 \pm 7.2\%$) than in females ($0.5 \pm 1.4\%$) ($p = 0.02$), and the data showed a trend towards greater percent body fat reductions in younger participants as well ($p = 0.07$). Aerobic fitness did not improve significantly overall, but did improve among participants <10 years old ($p = 0.05$), resulting in a significant difference in fitness change between age groups ($p = 0.03$).

Conclusion: Overall, participants who completed OTM significantly improved their health behaviors, while maintaining BMI and percent body fat. However, when assessed by gender and age group, improvements in outcomes differed significantly, with greater body composition reductions among males and larger fitness gains among younger participants. While these results are promising, additional research is needed to explore the long-term durability of these health changes.

Word Count: 2491 (Body not to exceed 2,500 characters including spaces)