

Purpose: The purpose of this pilot project was to quantify and characterize the physical activity of preschool children enrolled in childcare centers.

Methods: Physical activity (PA) of children aged 4-5 from 7 different centers was objectively measured by accelerometry (SenseWear® Armbands [SWA]) and direct observation. PA behavior was coded as inside or outside and free vs. teacher-guided play. Children wore the SWA for approximately 8 hours. Average METs and percent of time spent in sedentary, moderate, vigorous, and very vigorous PA was matched with the activity coded by observation. Data were evaluated using descriptive statistics as mean +/- standard deviation or frequency and percent.

Results/Findings: Subjects (n=61) had a BMI of 15.9 (+/-1.3) kg/m<sup>2</sup> and a mean age 4.5 (range: 4-5); 16% were obese, 25% overweight, and 51% male. Overall, 19,581 minutes of PA were recorded by SWA. Children spent a total of 58.1% of the recorded time sedentary, 36.8% in moderate, 4.4% in vigorous, and 0.7% in very vigorous activity. Children spent less time sedentary (34.6% vs. 40.6%) and more time in vigorous activity (12.7% vs. 6.8%) during teacher-guided compared to free playtime. Indoor playtime was 62.7% sedentary and 32.5% moderate activity whereas outdoor playtime was consisted of 27% sedentary activity and 65.4% moderate activity.

Conclusions:

Children are most active in outdoor environments and energy expenditure is higher when teachers lead play activities. These data will be used to develop and conduct intervention studies that will train providers to provide high quality teacher-led physical activities for preschool children.