



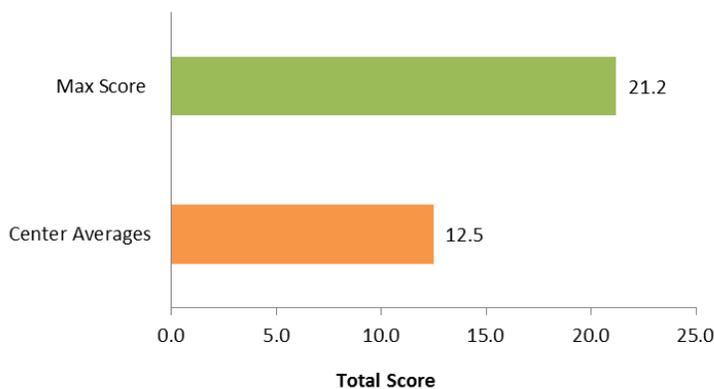
Results from the Behavioral Nutrition and Physical Activity Laboratory

The purpose of this project was to better understand the relationship between the child care center environment and obesity-related behaviors in preschool children. Fifteen classrooms of 3 to 5 year old children at 11 tribally-affiliated child care centers were observed using an observation tool¹. In addition to the classroom environment, the children in the 3 to 5 year classes were observed during lunches for food intake. Participating children wore a physical activity monitor to measure physical activity. This project was conducted by the Behavioral Nutrition and Physical Activity Laboratory from the University of Oklahoma Health Sciences Center with support from the Gretchen Swanson Center for Nutrition, Stephenson Cancer Center and Department of Nutrition Sciences.

Summary of Project Findings

Project Participants		
<ul style="list-style-type: none">15 classrooms of 3-5 year old children	<ul style="list-style-type: none">82 children total67% American Indian	<ul style="list-style-type: none">55% Male38% Overweight or obese

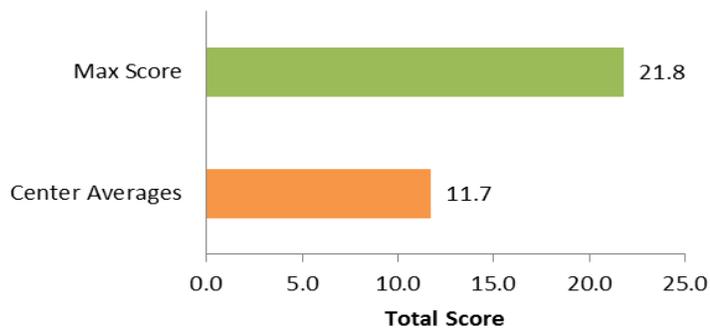
Center Nutrition Environment Score



Center Nutrition Environment Score

A total nutrition score was found through scoring of the total amount of served fruits and vegetables, high sugar/high fat foods, beverages, and then the nutrition environment, staff-behaviors nutrition, and nutrition training and education. The perfect score was 21.2 for the full day of observation. The graph reflects the total score of all classes compared to the maximum score.

Center Physical Activity Environment Score



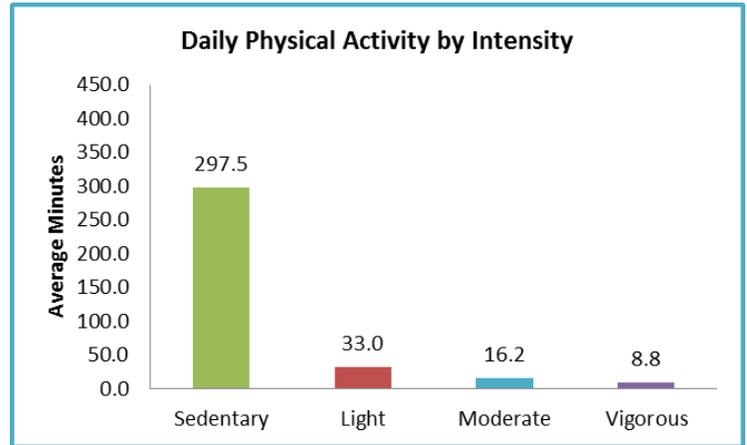
Center Physical Activity Environment Score

The total physical environment score was found through scoring the active and sedentary time of children, sedentary environment, physical activity environment, staff-behaviors for physical activity. The perfect score was 21.8 points for the full day of observation. The graph reflects the total score of each class compared to the maximum score.



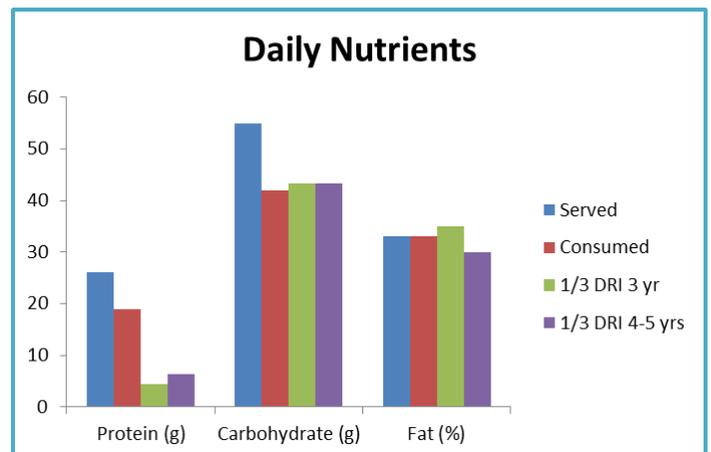
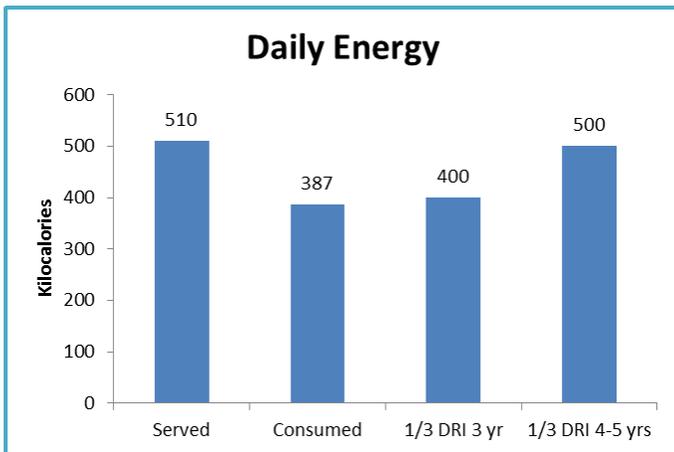
Physical Activity

The Centers for Disease Control and Prevention recommends that children spend at least 60 minutes of moderate-intensity aerobic activity daily². And preschool children should spend 60 minutes in structured activity and up to several hours in free play.³ Children who had parental permission wore physical activity monitors for one or two entire class days. This figure displays the average amount of physical activity, in different intensities, for children in the center.



Dietary Intake

A healthy diet is needed to prevent childhood obesity and other diseases such as diabetes. Guidelines include 5 serving of fruits and vegetables a day, whole grains, lean meats, and drinking water and milk rather than sugary fruit juice or sodas³. Children were observed at lunch on one or two occasions. The two charts display the class average of nutrients and energy served and consumed at lunch and the daily recommendation [1/3 (representing lunch only) of the Dietary Reference Intakes (DRIs) specific to age].



Environment Relationship with Overweight and Obesity

- 9% lower odds of children being overweight or obese in a healthier total environment
- 18% lower odds of children being overweight or obese in a healthier physical activity environment

Physical Activity Environment Relationship with Activity Behaviors

- Higher steps per day taken by children was associated with 1) more opportunities for activity; 2) more time spent in active play; 3) more time spent outdoors
- Higher vigorous physical activity was associated with more opportunities for activity

Nutrition Environment Relationship with Nutrition Behaviors

- No association was observed between nutrition environment and foods served or consumed



References:

1. Ward DS, Hales, D. Haverly, K., Marks, J., Benjamin, S., Ball, S., Trost, S. An instrument to assess the obesogenic environment of child care centers. *Am J Health Behav.*2008;32(4):380-386
2. Physical Activity Guidelines for Americans. Chapter 3: Active Children and Adolescents
<http://www.health.gov/paguidelines/guidelines/chapter3.aspx>
3. National Association of Sport and Physical Education. Active Start – Physical Activity Guidelines for Children Birth to Five Years. www.aahperd.org/NASPE
4. Child Nutrition. <http://www.nlm.nih.gov/medlineplus/childnutrition.html>

This Report was prepared by Susan B. Sisson, PhD, RDN, CHES on behalf of the Behavioral Nutrition and Physical Activity Laboratory. If you have questions or comments, please contact us at nutritionandactivitylab@ouhsc.edu or 405.271.8001 x 41173.