



The North Carolina Partnership for Children, Inc.

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Overview

Part 1: Understanding the challenges of healthy weight development at child care settings

Part 2: Overview of the evaluation model for SHAPE NC

Part 3: Describe best practices standards for nutrition at child care centers

Part 1: Challenges

HEALTHY WEIGHT DEVELOPMENT AT CHILD CARE SETTINGS

Factors Associated with Healthy Weight Development

Nutrition Challenges at Child Care

- Foods served and eaten
- Early development of eating habits
- Encourage new foods
- Helping gauge satiety
- Creating a proper food environment

Factors Associated with Healthy Weight Development

Physical Activity Challenges at Child Care

- Getting regular activity during day
- Development of motor skills
- Decrease amount of time sedentary



Importance of Child Care

- Child care has positive impact on what and what children eat (Larson et al., 2011)
- Nearly 50% of the variation in children's physical activity can be explained by child care facility attended (Bower et al., 2008; Dowda et al., 2004 & 2009; Finn et al., 2002; Hinkley et al., 2008; Pate et al., 2004)
- Child care settings represent "untapped opportunities for developing and evaluating effective obesity-prevention strategies to reach both children and their parents" (Story et al., 2006).

Activity at Child Care

- Multiple research studies have shown that children obtain little activity during time at child care
- Recent IOM recommendations (2011) call for 15 minutes of non-sedentary time for every 1 hour spent in care
- Current levels in centers and homes much lower



Data from National/International Studies- 1

Study	Sample n (n)	Method	Results Mean MVPA	Notes
Jackson 2003	104,(9) Scotland	Actigraph	PA low	Cut-points unclear
Reilly 2006	424, (36) Scotland	Actigraph	MVPA <25min/d	Higher in 1 site
Pate 2004	247, (9) US	Actigraph	7 min/d MVPA	Variable
Dowda 2004	266, (9) US	Direct Obs.	20-40 min/d MVPA	Variable , nursery quality



Data from National/International Studies- 2

Study	Sample n(n)	Method	Results MVPA	Notes
Cardon 2007	122 (5) Belgium	Actigraph Pedometers	8% reached 60 min/d	Low outside nursery
McKee 2005	30 (1) UK	Direct Obs.	<2% of time	Methodol. study
Boldemann 2006	197 (11) Sweden	Pedometers	Low step counts	Variability between sites
Bower 2008	(20) US	Direct Obs.	Low	Variable by site

Physical Activity and Child Care

- Much of the variation in physical activity between centers can be attributed to *modifiable factors*
 - Factors include:
 - » time provided
 - » equipment/environment
 - » teacher actions
 - » policies
 - » training

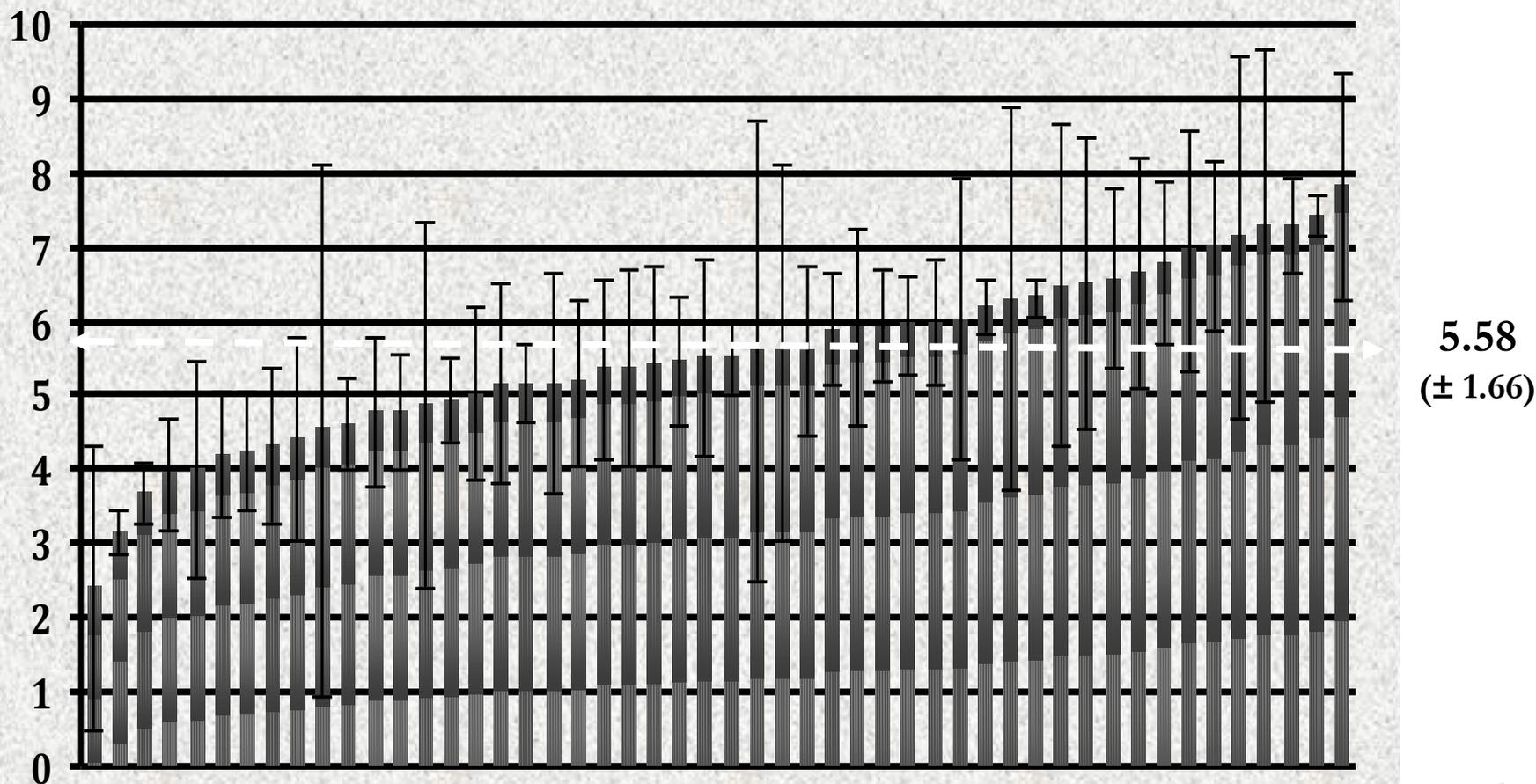
What's Going on in NC?



- Study of 50 child care centers
(Robert Wood Johnson-funded study)
- Visited centers daily for 4 days where trained observers conducted day-long observations
- Children worn activity monitors each day
- Staff and directors also provided information

Minutes per hour of moderate or vigorous physical activity across 50 child care centers

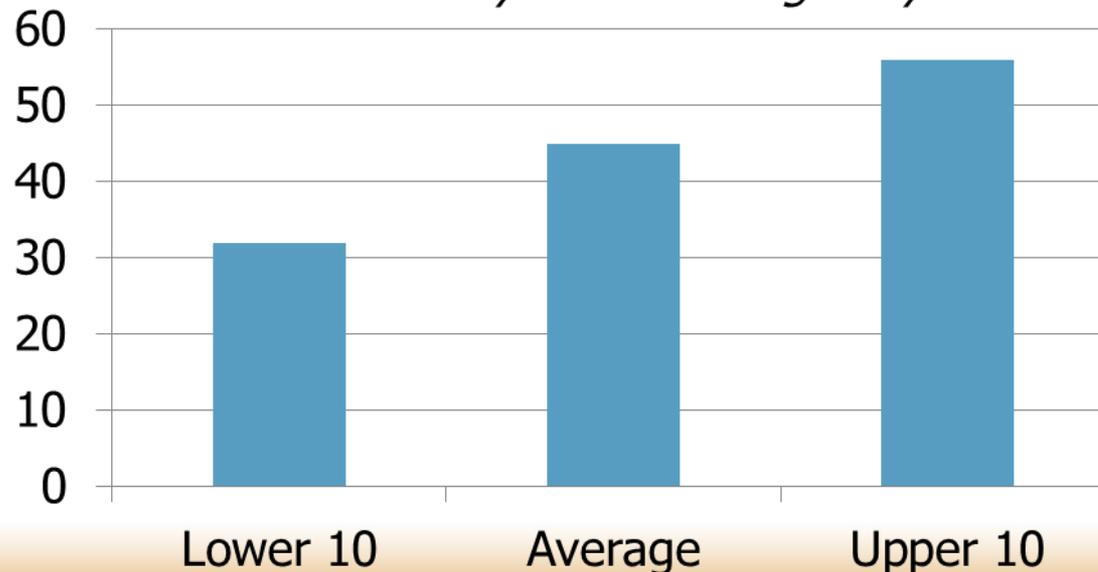
MVPA minutes per hour



Physical Activity and Child Care

The amount of physical activity children get is related to what child care center they attend

Minutes of moderate or vigorous physical activity on an average day



In one month the difference between the upper and lower groups is about 8 hours!

Study Procedures: Sample

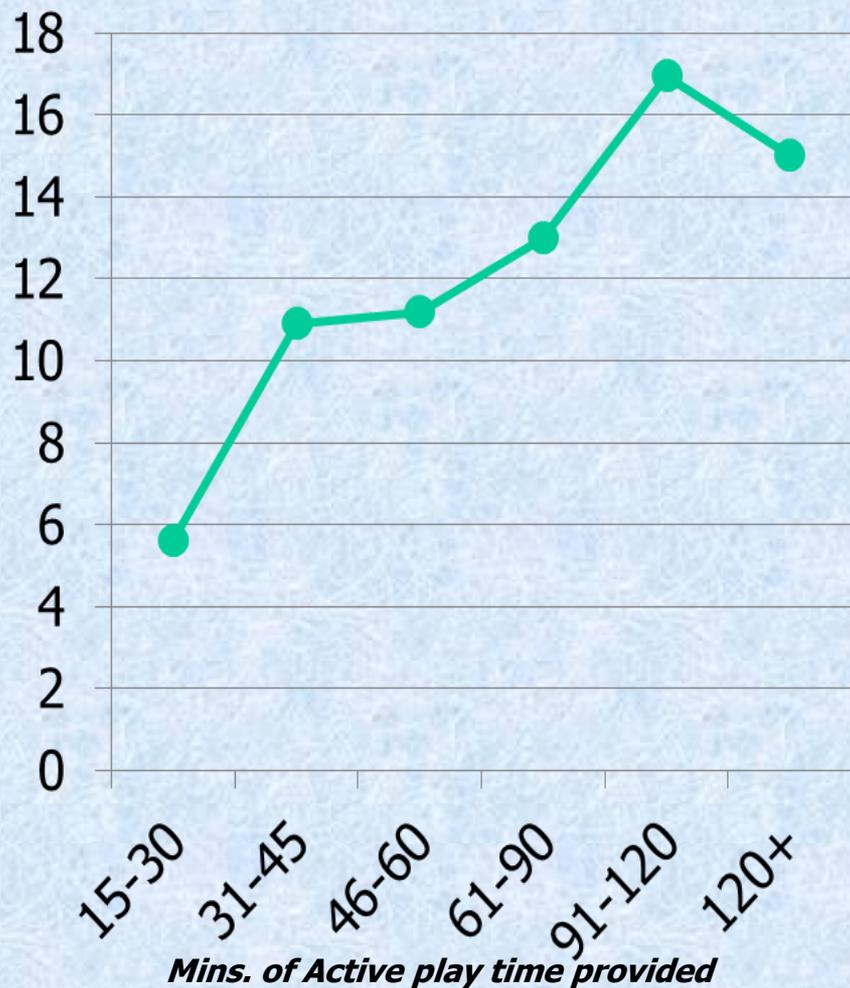
- 96 child care centers from 33 North Carolina (NC) counties
- Represented all regions of NC (Western, Eastern, and Central Piedmont)
- 1-day observation EPAO instrument with document review



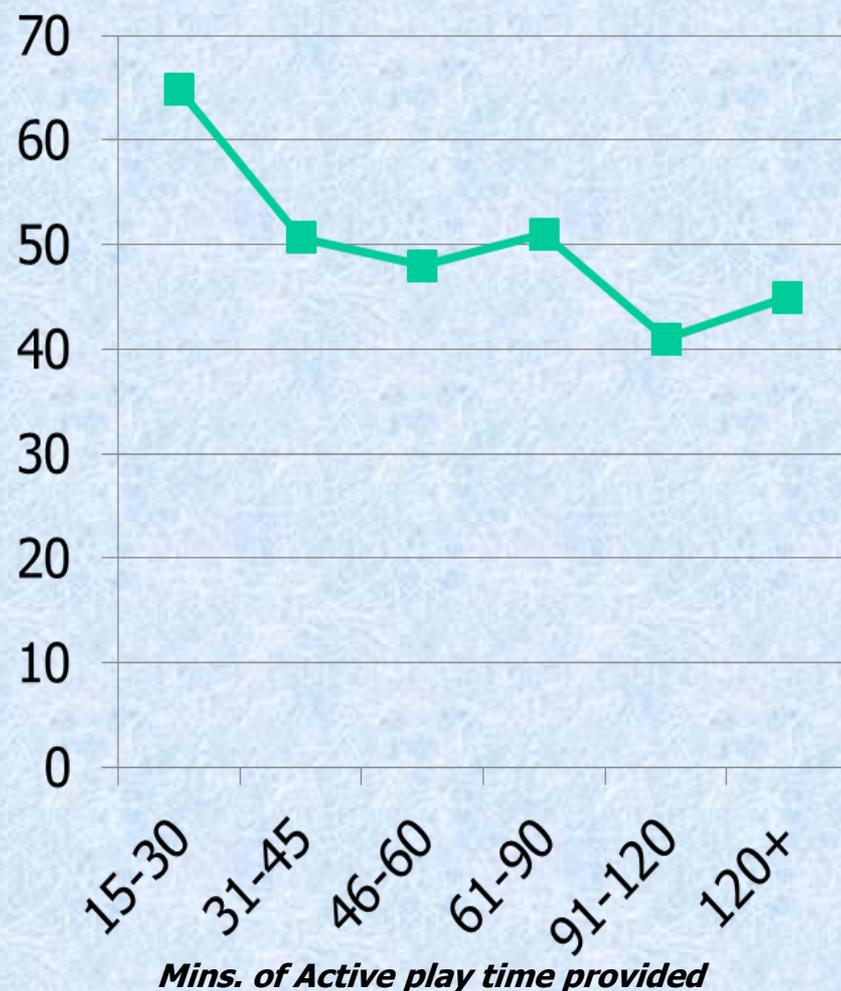
Ward et al., American J Health Behavior 2008

Best Practice: Active Opportunities

% time in MVPA

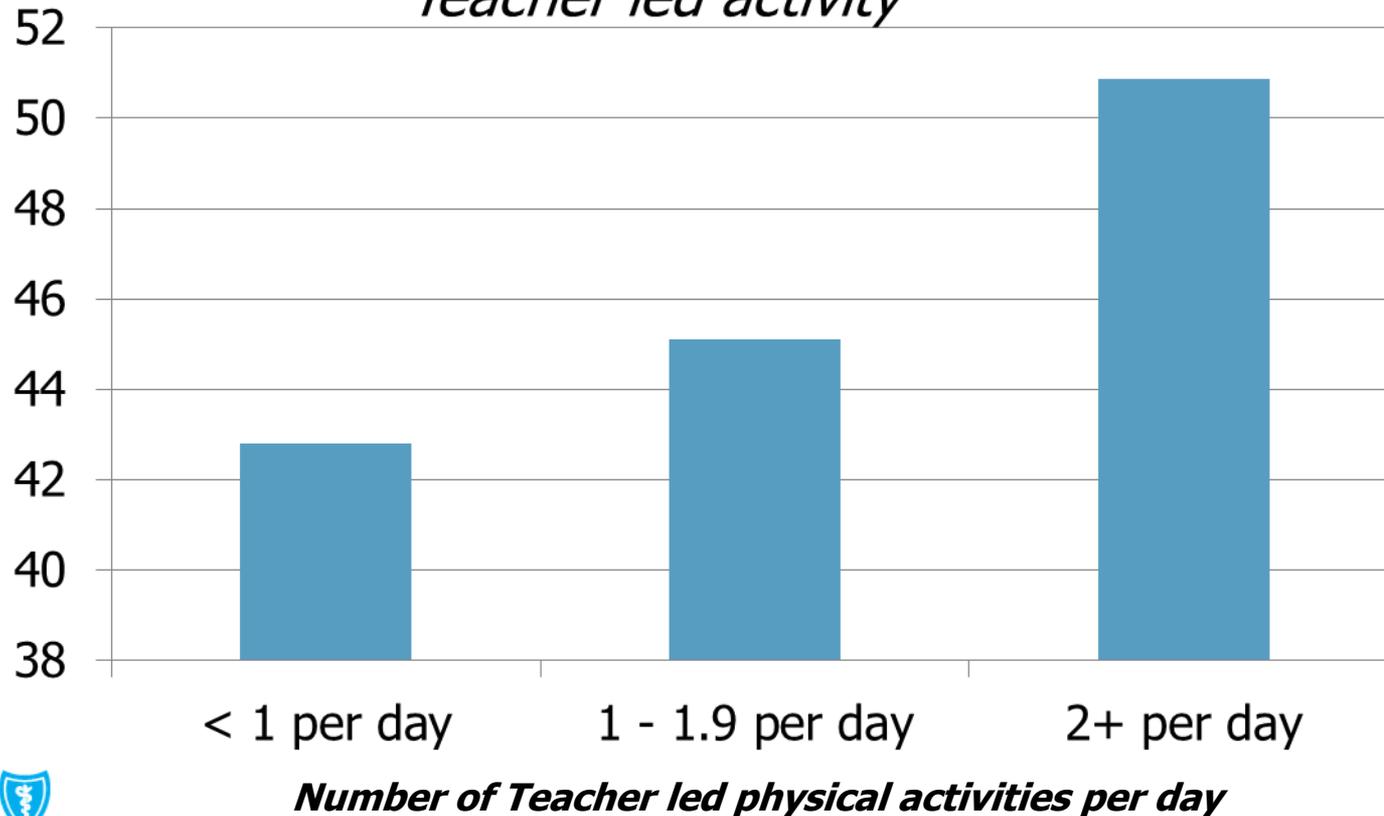


% time SEDENTARY



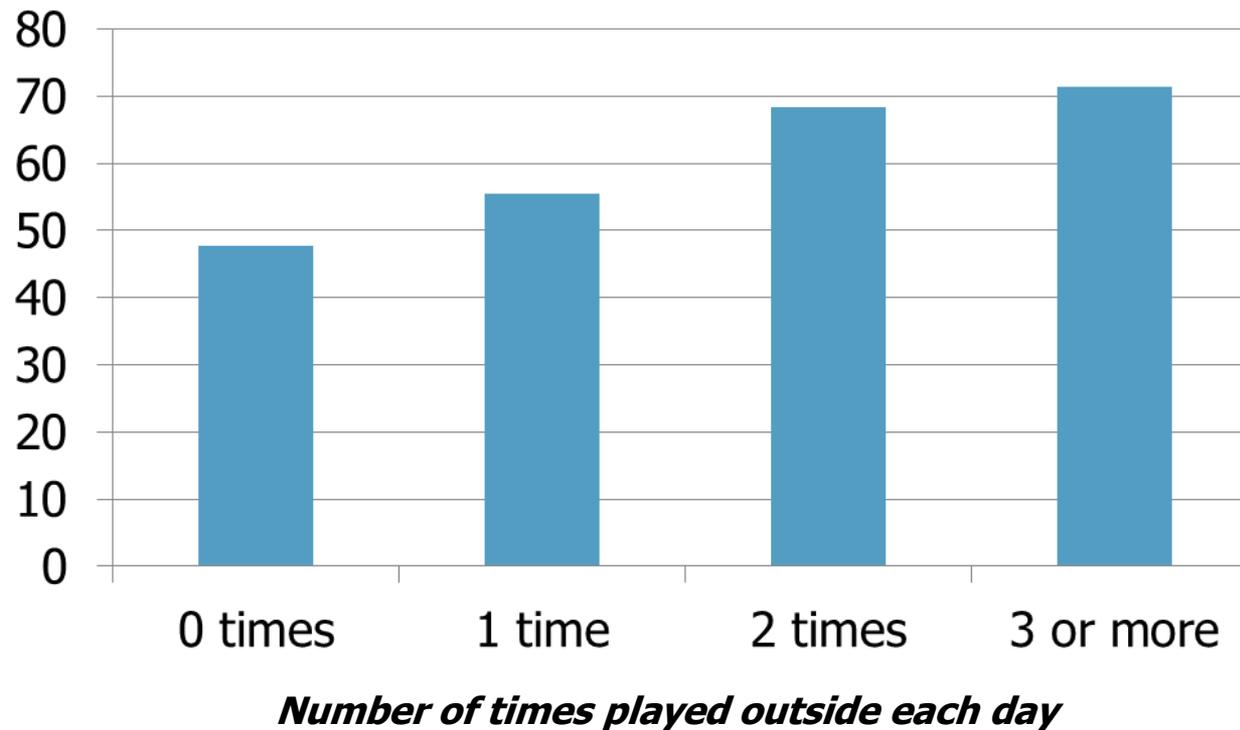
Best Practice: Teacher Led

Minutes of MVPA across three levels of Teacher led activity



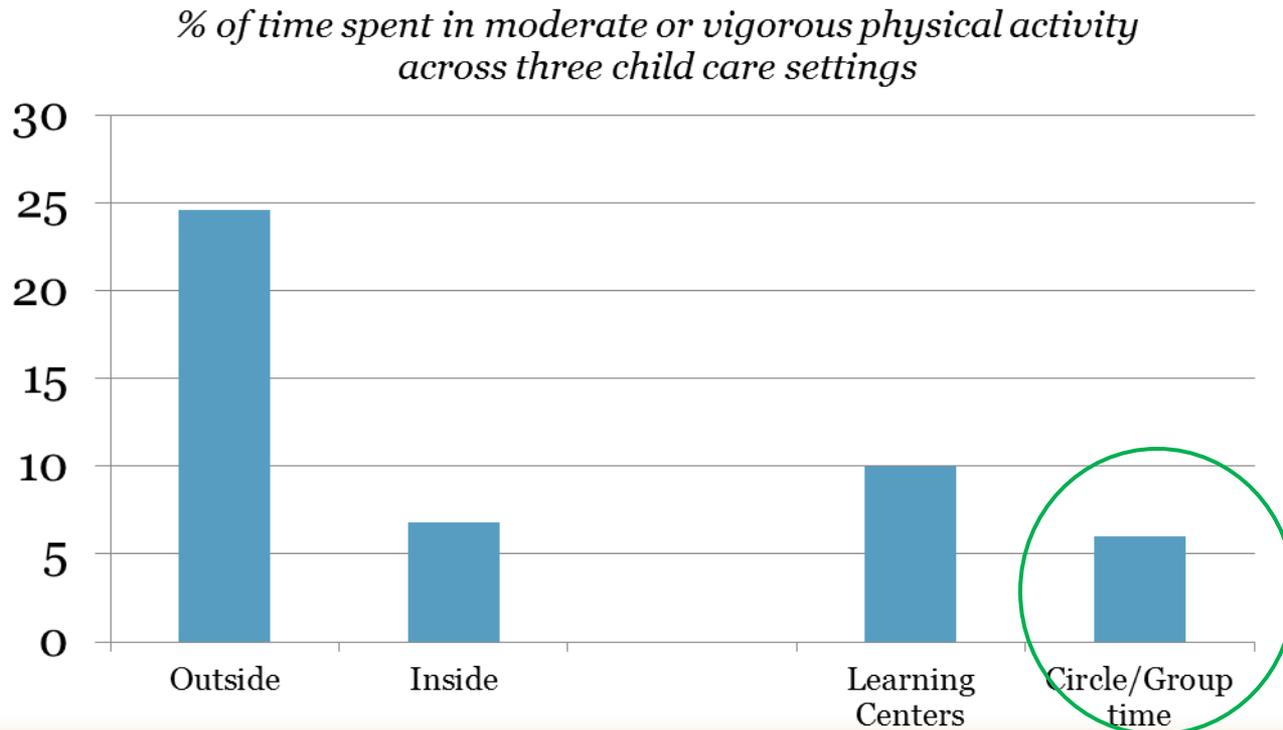
Best Practice: Outdoor Playtime

Minutes of MVPA across four levels of outside play



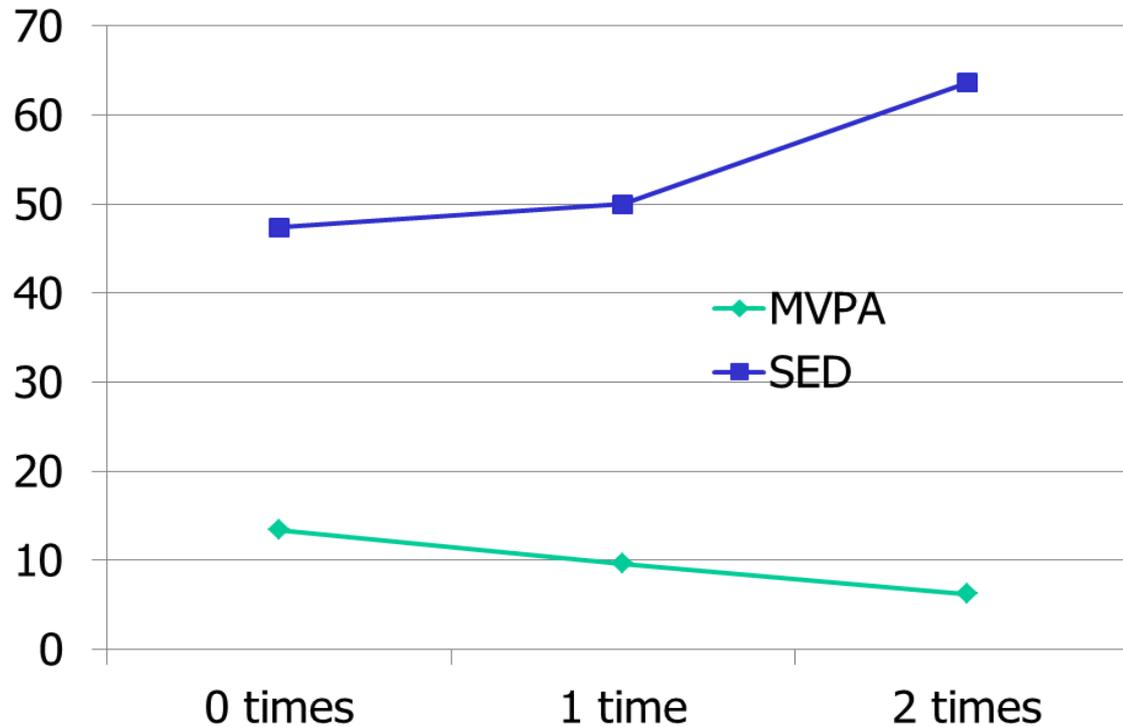
Best Practice: Activity Integration

- Moderate and vigorous physical activity integrated into learning activities



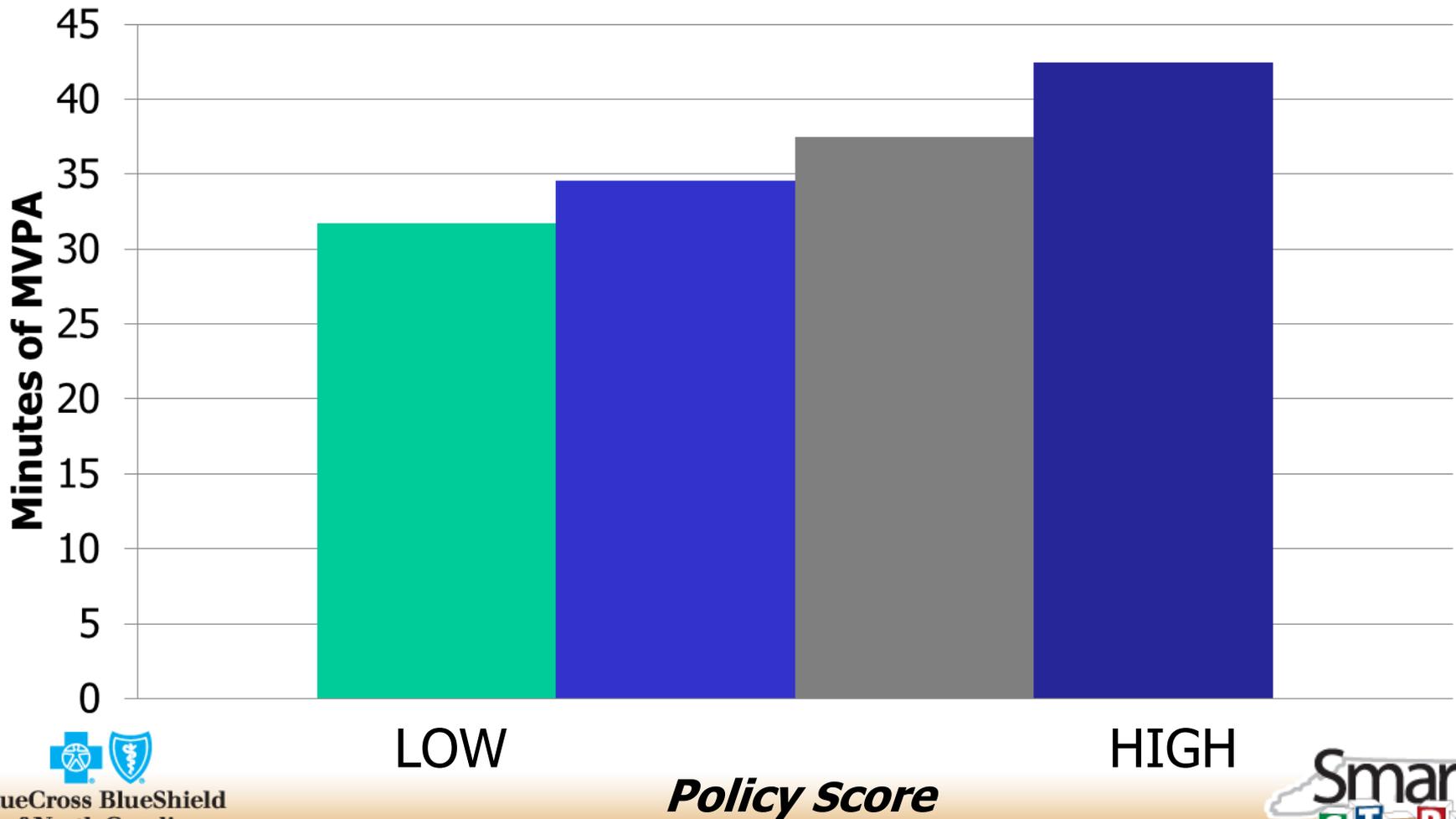
Sedentary Opportunities

***Change in %MVPA and %SEDENTARY
as times seated 30+ min increases***

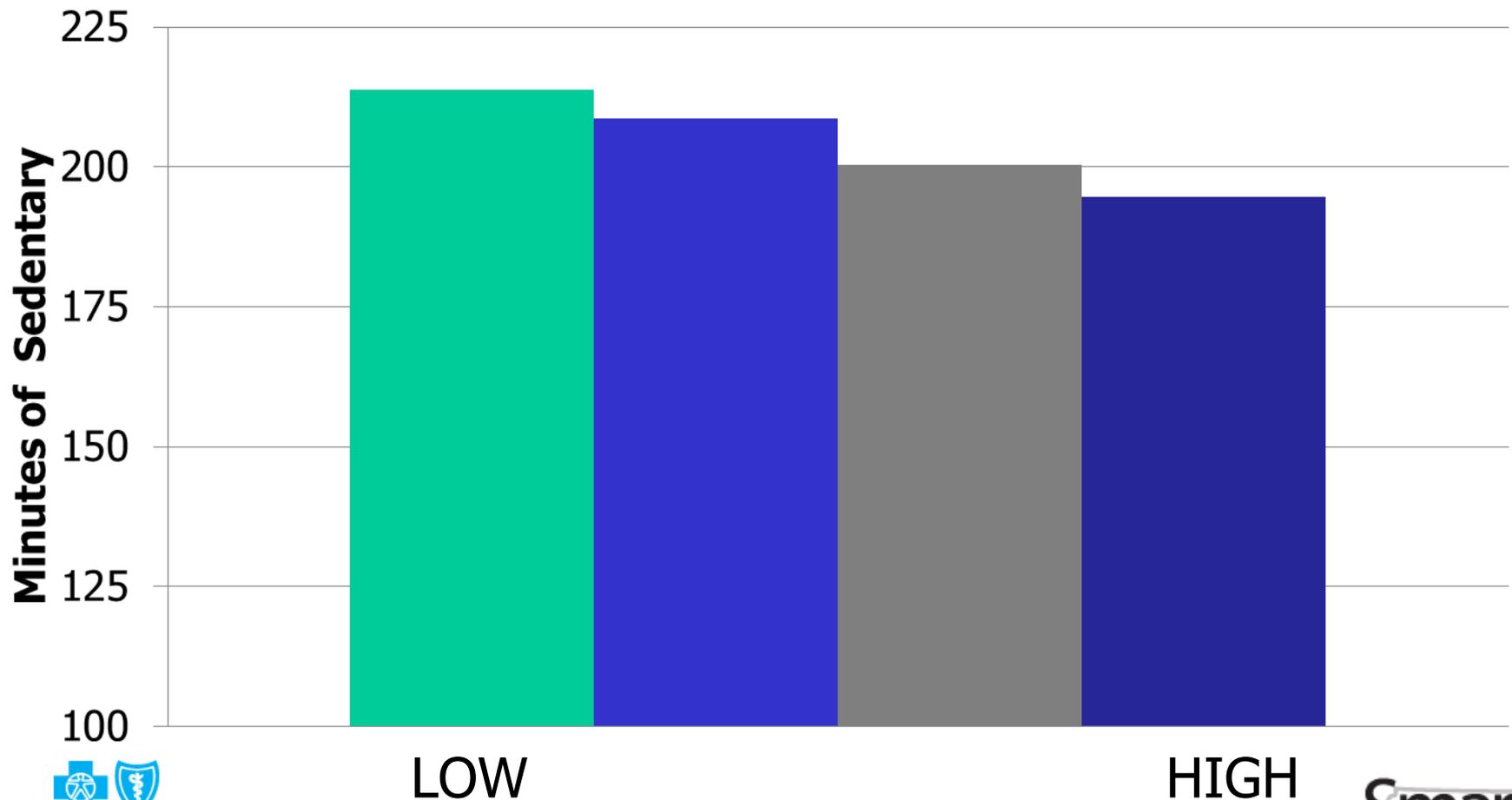


Number of times seated 30+ minutes

Best Practice: Physical Activity Policy



Best Practice: Physical Activity Policy



What's Being Served & Eaten in Child Care

Data from New York City and the State of North Carolina



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Nutrition Policies and Practices of New York City Daycare Centers



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Characteristics of Daycare Centers

- Daycare size (n=40)
 - Small: 15%
 - Medium: 53%
 - Large: 33%
- Ethnicity of children (mean percent of children that are)
 - Black/ African American: 40%
 - Hispanic: 40%
 - Asian: 7%
- 95% received federal funds to provide free meals; 7 (18%) allowed foods from home; 5 (71%) provided guidelines

Nutrition Policies and Practices of Daycare Centers

- >90% met most nutrition requirements of NYS and CACFP
 - 100% of centers had menus, 97% displayed their menu
 - 97% introduced new foods into menus regularly
 - 78% offered 1% milk
 - Most centers offered mix of fresh, frozen and/or canned fruits and vegetables
 - 87% offered whole wheat bread, 73% offered white bread
 - None offered soda

Nutrition Policies and Practices of Daycare Centers

- Exceptions
 - 58% had menus approved by a nutritionist
 - 50% had a source of drinking water in classroom observed
 - 8% centers provided drinking water in pitchers at tables during meals





Children's Dietary Intakes at Daycare Centers

- Breakfast through lunch supplied less than 50% of daily nutrition requirements
 - <50% met recommendations for milk, fruit, vegetable, grain, meat / beans group
 - Mean energy intake was less than recommendation
 - 20-48% did not meet recommendation for vitamins A, B6, B12 and C, thiamin, riboflavin, niacin, folate, Mg, Fe, Zn
 - 95% did not meet recommendation for vitamin E
 - Mean fiber intake was less than recommendation
 - Mean intake of vitamin D, Ca, Na exceeded recommendation

Highlights of the Findings

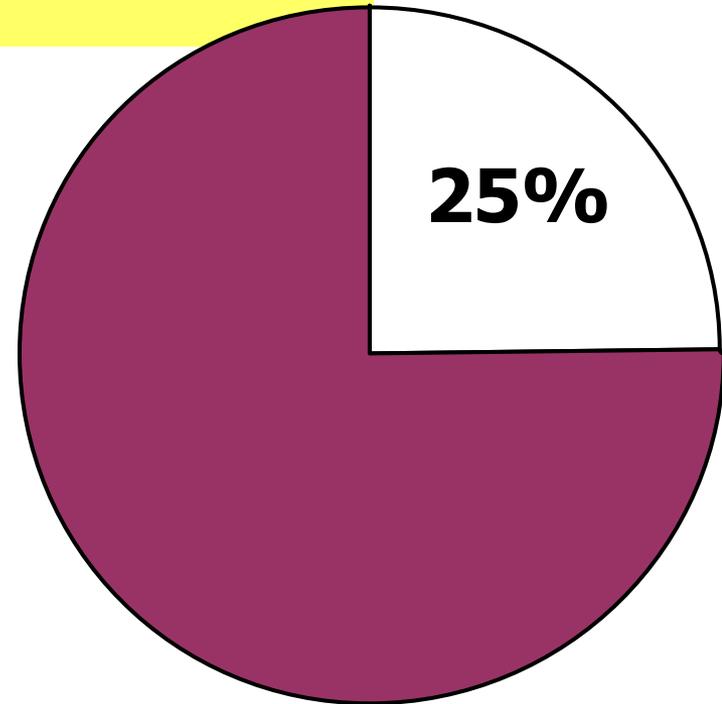
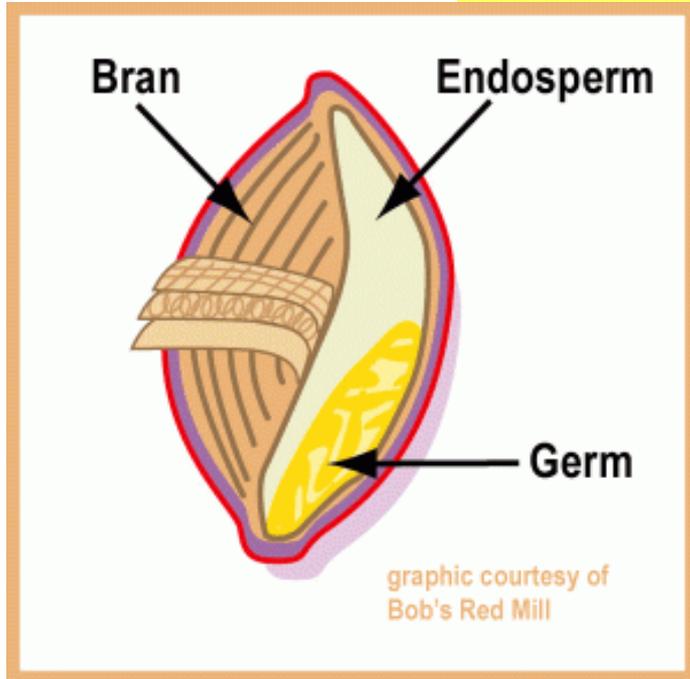
- Foods at daycare centers were healthier than foods provided at home
 - Low-fat milk (80% vs. 58%) versus high-fat milk (43% vs. 87%)
 - Soft drinks (0% vs. 50%)
 - Fruit drinks (11% vs. 77%)
 - Fruit, 100% juice, vegetable
 - Daycare centers provided fruit or fruit juice on a daily basis
 - Children consumed 100% fruit juice most frequently at home
 - Dessert (33% vs. 95%) and Snacks (9% vs. 93%)

What are NC children eating?

- Diet observation of 117 children from 20 different child care centers throughout NC
- Trained observers monitored breakfast, lunch, and PM snack using the Diet Observation at Child Care (Ball et al., 2007)
- Compared to USDA MyPyramid food group recommendations, adjusted for full-day in child care (1/2 – 2/3 recs)

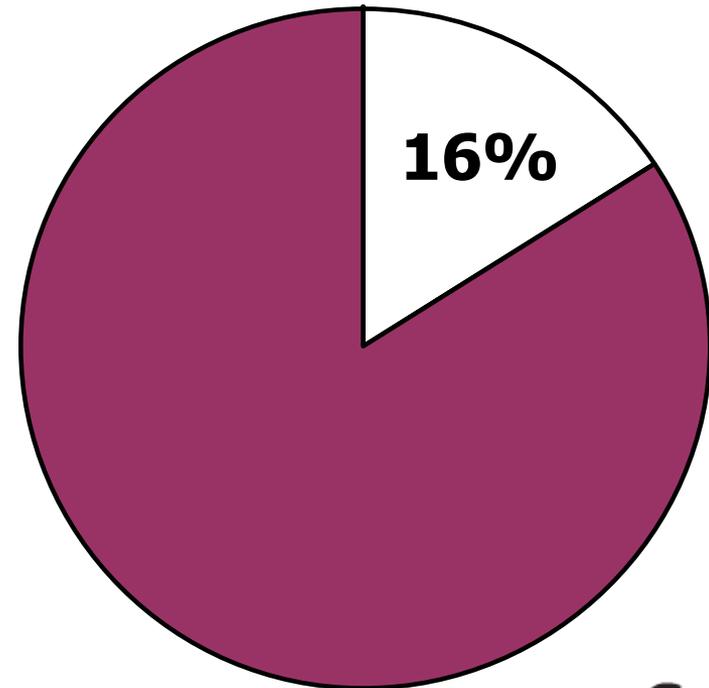
Grains

Recommendation: 1/2 of grains consumed are whole grains.



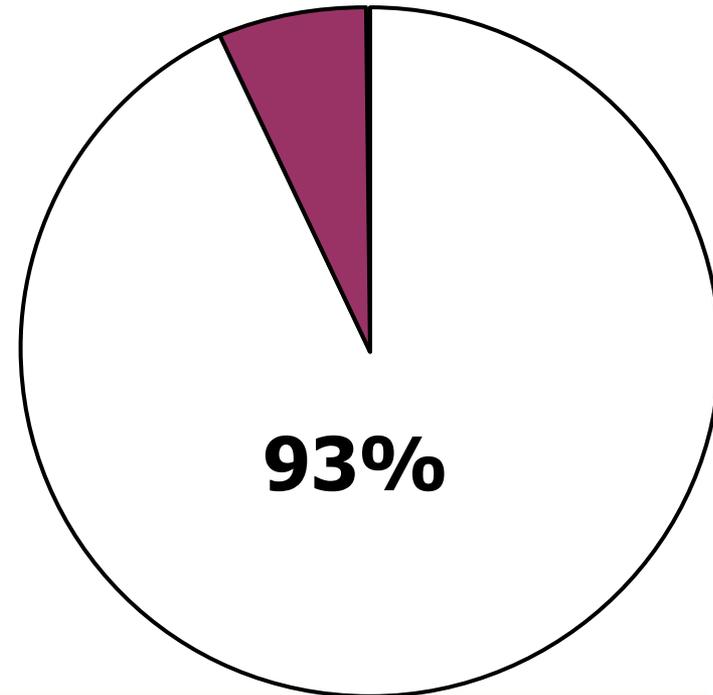
Vegetables

Recommendation: Eat 1.5 cups/day with more dark green and orange vegetables.



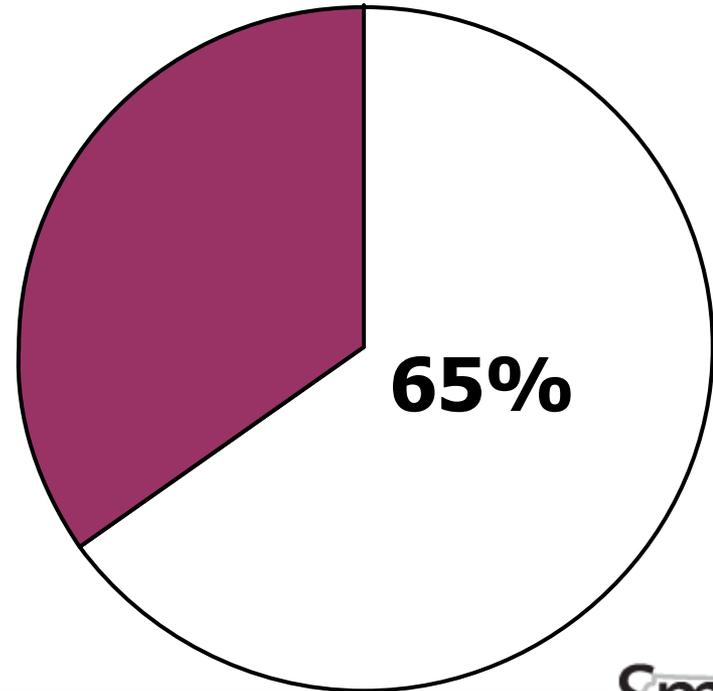
Fruit

**Recommendation: Eat 1.5 cups/day
with a concentration on whole
fruits, not 100% juice.**



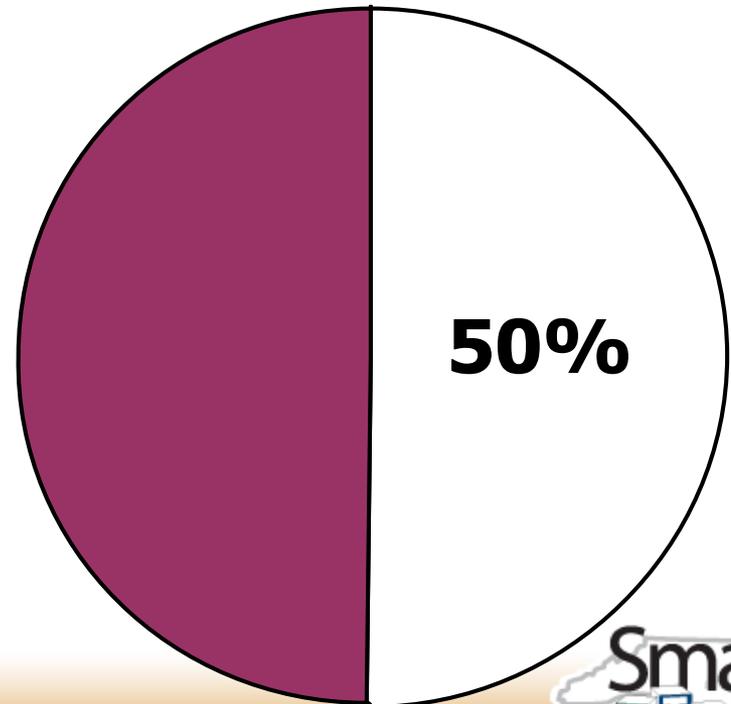
Meats

Recommendation: Eat lean or low fat meat, chicken, turkey, fish or beans.



Milk

Recommendation: 1% or fat free milk for children over age 2 years.



Added Sugars and Fats

**Recommendation: 4 tsp of oil per day.
Discretionary calories limited to 170 per day.**

- 96% served a high fat or high sugar condiment
- 59% of centers served a high sugar/high fat item

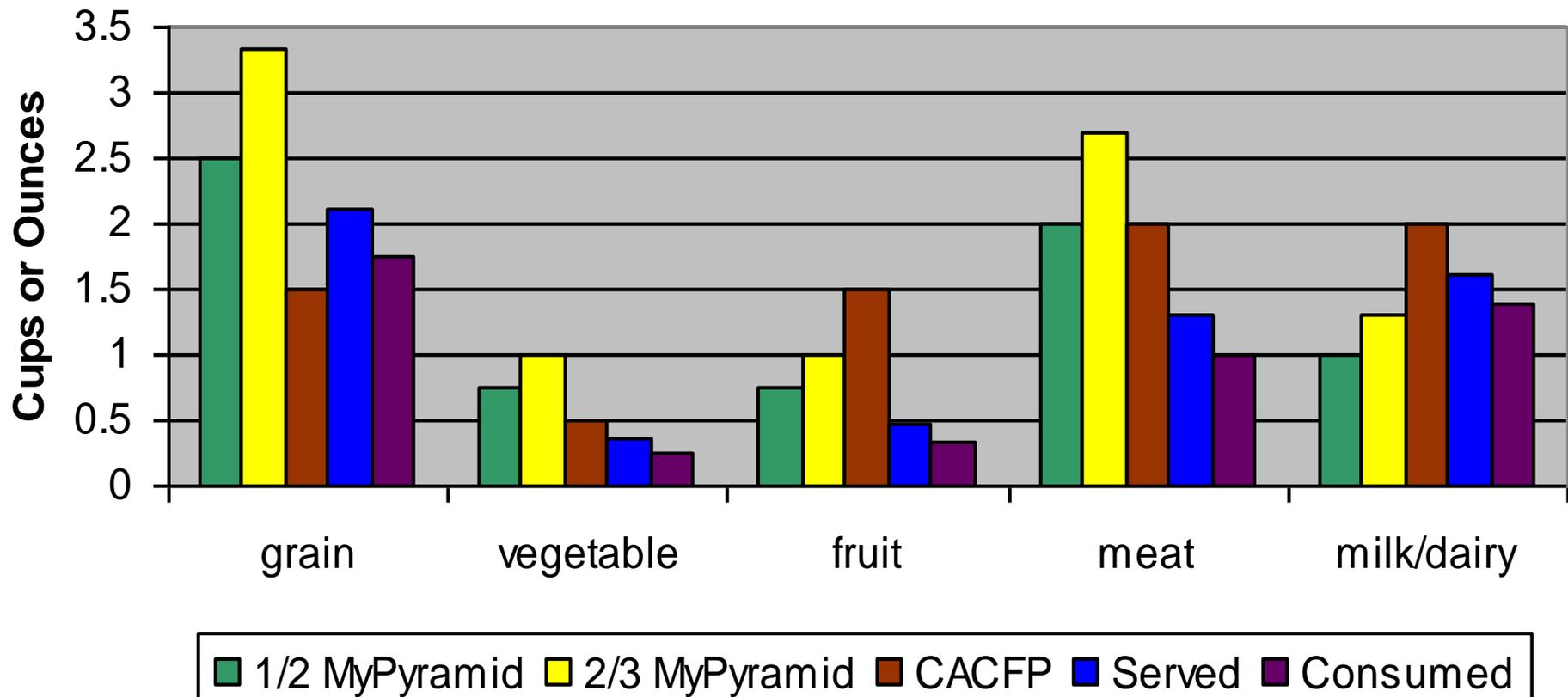


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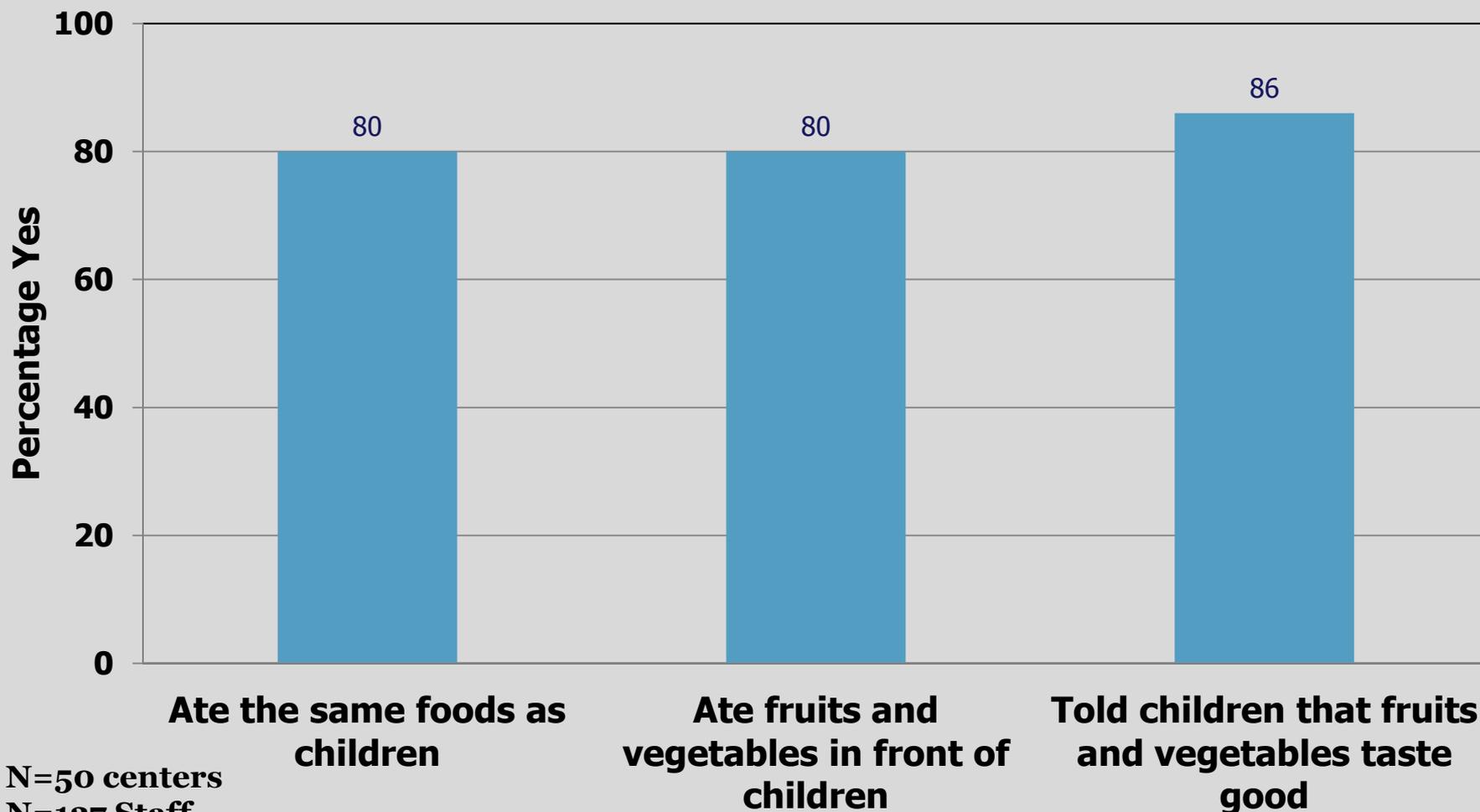
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What are NC children eating?



Staff Eating Behaviors Observed at Childcare

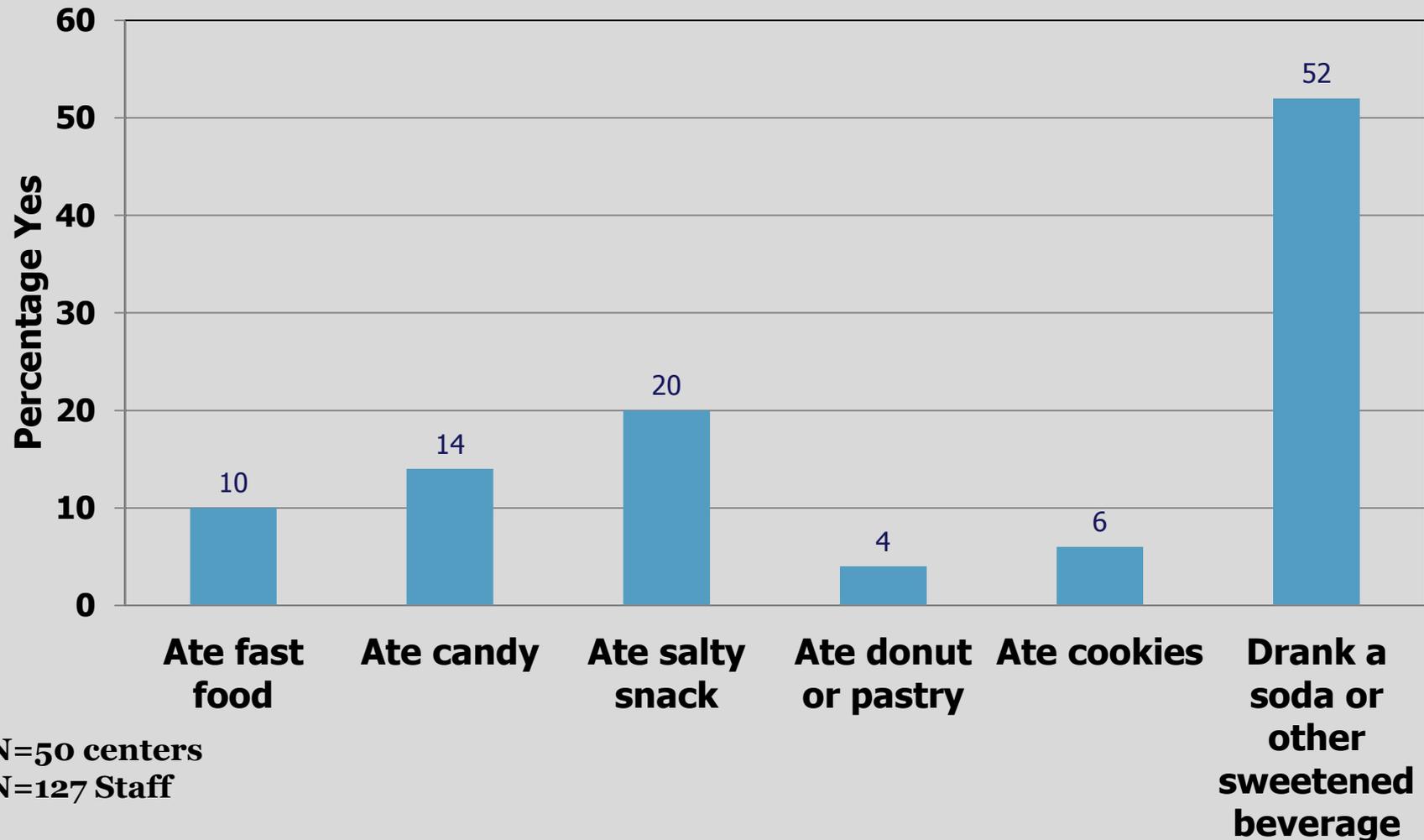
Observed behaviors of staff at Lunch



N=50 centers
N=127 Staff

Staff Eating Behaviors Observed at Childcare

Observed behaviors of staff at Lunch



Eat Right at Child Care



Part 2: Evaluation Model

SHAPE NC: HEALTHY STARTS FOR YOUNG CHILDREN

Shape NC Dissemination Model

- NCPC working with local partnerships
- Local partnerships working with local communities
- Candidates for Model Early Learning Centers selected
- Special consultants (4 Hub Specialists) hired to provide assistance in implementation

Shape NC Evaluation

- Three cohorts of Model Early Learning Center candidates selected
 - Cohort 1: Fall 2010
 - Cohort 2: Fall 2011
 - Cohort 3: Fall 2012

Evaluation Model

- Model Early Learning Centers, using the Shape NC Evaluation Tool, self-rate themselves at baseline
- Follow-up ratings using the Tool will occur every 6-mo during enrollment in the program
- Uses a model of “continuous quality improvement”

Evaluations

- Local Partnership Evaluation
- Community Assessment (by Partnership)
- Assessment by Hub Specialists (Hub Tracker)
- Assessment by Model Early Learning Centers

Part 3: Nutrition Outcomes

SHAPE NC: HEALTHY STARTS FOR YOUNG CHILDREN



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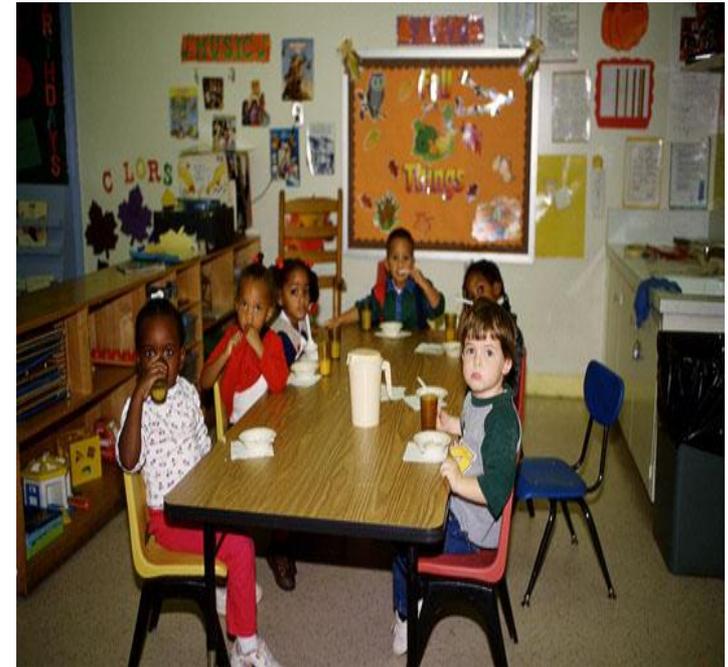
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Child Care Enrollment

- In the US, it is estimated that more than 50% of children between the ages of 2-5 are in center-based child care.
- Many eat 3 or more of their daily meals and snacks at the child care facility



Key Nutrition Areas

- Fruits and Vegetables
- Meats, Fats, and Grains
- Beverages
- Feeding Practices
- Foods Outside of Meals and Snacks
- Providers Behavior Regarding Foods
- Education Regarding Foods and Beverages
- Policy Regarding Food



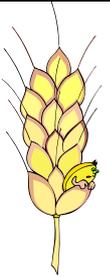
Fruits, Vegetables, Meats, Fats & Grains

Fruits and Vegetables



- Offer fruit (not juice) at least 2 times a day.
- Serve fruit canned in its own juice, fresh, or frozen all of the time.
- Offer vegetables (not French fries, tator tots, hash browns or dried beans) at least 2 per day.
- Offer vegetables, other than potatoes, corn or green beans 1 or more times per day.
- Prepare cooked vegetables without added meat fat, margarine or butter.

Meats, Fats & Grains



- Offer fried or pre-fried potatoes never.
- Offer fried or pre-fried meats or fish never.
- Offer high-fat meats less than once a week or never.
- Offer beans or lean meats one or more times per day.
- Offer high fiber, whole grain foods 2 or more times per day.
- Offer sweets or salty foods less than once a week or never.



Beverages

Beverages

- Make drinking water easily visible and available for self-serve both indoors and outdoors.
- During indoor and outdoor play, providers prompt children to drink water all of the time.
- Water is offered to children over the age of 1 year, but not as a substitute for milk when it is a required food component 1x per day or more.
- Offer 100% fruit juice no more than 4-6 oz per day and parents are encouraged to support this limit.
- Offer sugary drinks never.
- Serve skim or 1% milk to children over 2 years.
- Never offer flavored milk to children.
- Locate soda and other vending machines off-site.

Environment and Behavior

Feeding Environment

- Children's meals are served family style all of the time.
- Providers should help children determine if they are still hungry before serving additional food.
- Providers should help children determine if they are full before removing their plate.
- Providers should gently and positively encourage children to try a new or less favorite food.
- Food is rarely or never used to encourage positive behavior.
- A large variety of visual exposures and prompts to eat healthy foods occur throughout the classroom with new opportunities introduced regularly

Staff Behaviors

- Providers should join children at the table for meals and consume the same food and drinks.
- Providers should rarely or never eat less healthy foods in front of the children.
- Providers should talk with children about trying and enjoying healthy foods.
- Providers teach children about healthy foods and the pleasure of eating using both formal (e.g. circle time lessons) and informal (e.g. mealtime conversations) opportunities all of the time.



Menus, Variety & Foods Outside Meals

Menus and Variety

- Use a cycle menu of 3 weeks or greater that changes with the seasons.
- Include a combination of new and familiar foods on weekly menus.
- Include foods from a variety of cultures on weekly menus.

Foods Offered Outside of Regular Meals and Snacks

- Provide and enforce written guidelines for healthier food brought in and served for holidays and celebrations.
- Celebrate holidays with mostly healthy foods and non-food treats.
- Fundraising should consist of selling non-food items only.

Training and Education

Education Regarding Foods

- Provide training and/or professional development on nutrition opportunities (other than food safety and food program guidelines) for providers 2x per year or more.
- Provide nutrition education for children through a standardized curriculum 1x per week or more.
- Offer nutrition education opportunities to parents regularly, 2x per year or more.

Healthy Weight Development at Child Care

