Preventing Obesity Among Rural Children: Improving School Nutrition and Physical Activity Options through Targeted Environmental Actions

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Presenter Disclosures

Deborah H. John

"No relationships to disclose"

Session Objectives

- *Participants will be able to:*
  - **Describe** the prevalence of overweight and obesity among rural elementary school students.
  - **Describe** the purpose and application of the **School Nutrition and Physical Activity (SNPA)** tool as an environmental approach to obesity prevention for rural elementary schools.

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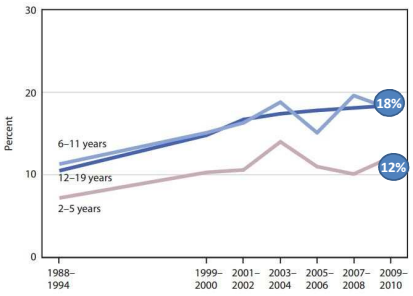
Obesity Trends Among U.S. Children



SOURCE: CDC/NCHS, *Health, United States, 2012.* Data from the National Health and Nutrition Examination Survey (NHANES).

Childhood Obesity: Place Matters

- Rural residency increases the risk of childhood overweight and obesity
  - *Rural Healthy People 2010*
- Odds of obesity as much as 50% higher among rural elementary school children
  - *McMurray et al., J Rural Health, 1999*
- **Why?**

Boehmer et al., Am J Health Promot., 2009
Hennessy et al., Am. J. Prev. Med., 2010

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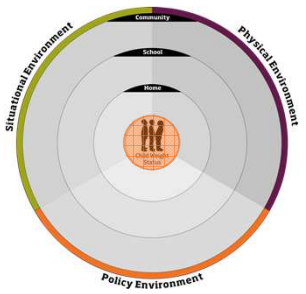
Promoting Environments that Support Obesity Preventing Behaviors

- Reducing obesity prevalence is dependent upon the extent to which obesity-preventing lifestyles can be adopted and sustained.
- Rural children, families and communities face unique challenges.
- Research supports multi-level efforts as "best practice"



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Measuring Obesity Prevalence Among Rural Elementary School Students

Height-Weight Assessment

- Conducted during the 2012-2013 school-year in six rural elementary schools.
- Conducted by research staff in partnership with Extension field faculty and school volunteers.

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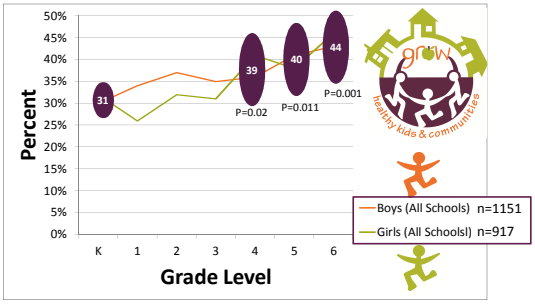
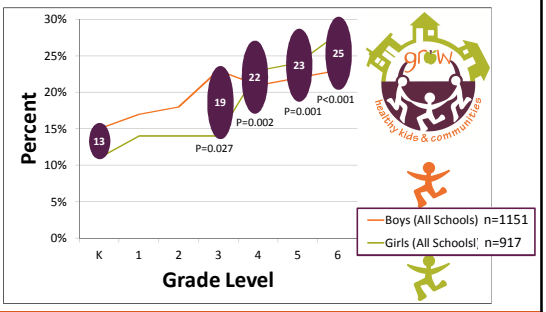
All GROW Schools, Prevalence of Overweight or Obese, by Grade and Sex



Prevalence among US Children ages 6-11 is **32.6%**

All GROW Schools, Prevalence of Obese, by Grade and Sex



Prevalence among US Children ages 6-11 is **18%**

Improving School Nutrition and Physical Activity Options through Targeted Environmental Actions

Promoting Healthy Schools

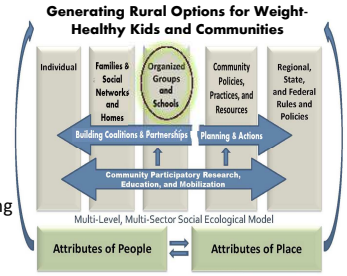
- Schools are critically important environments that have significant impact on children's health behaviors.
- In the past decade, schools have made progress in nutrition and physical activity policies and practices; however, there remains room for improvement

IOM. 2012. *Accelerating Progress in Obesity Prevention: Solving the Weight of the Nation.*
CDC. 2013. *Results from the School Health Policies and Practices Study 2012 .*

School Nutrition and Physical Activity (SNPA) Environmental Action Tool

Developed to:

- *Address* gaps in existing assessment tools
- *Assess* nutrition and physical activity context of the school
- *Align* 'best practice' strategies for changing the context with assessment-driven actions



Adapted from Maibach et al, BMC Public Health. 2007; 7: 88.

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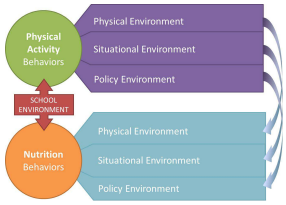
SNPA Model

Physical Activity (N=16)

- **Physical**
  - Indoor PA/Activity Space
  - Fixed Outdoor Features/Space
  - Garden Features
- **Situational**
  - Movement Opportunities
  - Portable Equipment
  - Atmosphere/Ambiance
- **Policy**
  - PA & Wellness Policy
  - Structured Physical Education

Nutrition (N=11)

- **Physical**
  - Cafeteria/Meal Service Area
  - Garden Features
- **Situational**
  - School Meals
  - Cafeteria Atmosphere
  - Drinking Water
  - Before/After School & Summer Programs
- **Policy**
  - Nutrition & Wellness Policy
  - Health & Nutrition Education



Each item is scored and the tool provides a baseline measure that is sensitive to change. The SNPA also works as an intervention strategy identifying areas of "opportunity" to improve the SNPA environment.

Utility: Data Sources, Informants, and Criteria

Category: Policy Environment
Area of Interest 16: Structured Physical Education

Required Data Sources:
- ☑ Direct Observation Time 10:30 AM / PM
- ☑ Interview
- ☐ Document Review
- ☐ Other, please specify

Informant:
- ☑ School Administrator
- ☑ Teacher, specifically PE Teacher
- ☐ District Food Service Director
- ☐ Meal Service Manager/Cafeteria Staff
- ☐ Classified Staff/Volunteer, specifically
- ☐ Wellness Committee
- ☐ Other, specifically

Description:
The school has a structured physical education/physical activity program that is coordinated and/or instructed by trained/credentialed physical educator(s).

Criteria:
- ■ A – The school has a trained/credentialed Physical Education Teacher.
- ⊟ B – Students participate in a minimum of 150 minutes of structured physical activity education per week.
- ■ C – Physical education instruction is based on a written and sequential physical activity education curriculum that is consistent with state/national standards for physical education (see appendix).

Area of Interest 16 Score: 2/3 criteria met

Assess & mark each criteria using [-] for does not meet and [■] for meets all elements of the criteria description.

Priority (H, M, L)	SCHOOL NUTRITION AREAS OF INTEREST (n=11)	Percent Met
	17. ***Cafeteria/Meal Service Area***: Offers a clean, pleasant, and safe setting with adequate space for eating meals	
	18. ***Garden Features***: School has orchards, greenhouses, in-ground gardens, raised beds, and/or container gardens and grows edible produce.	
	19. ***School Meals***: Program meets or exceeds federal and/or state food and nutrition standards and is managed efficiently and inclusively.	
	20. ***Food and Beverage Habits***: Promoting healthy food and beverage choices and habits is accepted and integrated into the school culture.	
	21. ***Food and Beverage Practices***: All foods and beverages served or sold outside of the school meals program during the regular and extended school day meet or exceed federal and/or state standards for foods and beverages sold in schools	
	22. ***Drinking Water***: Clean, safe, palatable drinking water is available, accessible, and promoted to all students and staff throughout the school day.	
	23. ***Cafeteria Atmosphere***: Meals served to students are attractively presented in a pleasant (friendly, comfortable, and inviting) environment with sufficient time for eating.	
	24. ***Before/After School and Summer Extracurricular Programs***: School provides and/or partners with community resources to provide healthy foods and beverages, and nutrition education opportunities before and/or after school and in the summer.	
	25. ***Nutrition and Wellness Policy***: School has implemented the district wellness policy, drafted a written nutrition policy and communicates with school staff, families and the district regarding its nutrition progress on an annual basis; school's nutrition goals are integrated into the school's overall long-range wellness improvement goals/plan.	
	26. ***Nutrition and Wellness Committee***: Active wellness council/committee exists and has specific nutrition-related objectives and/or an active nutrition council/subcommittee.	
	27. ***Health and Nutrition Education***: Health education program includes functional knowledge and skills-based nutrition lessons. Nutrition behaviors/habits are taught in all grades.	

Priority (H, M, L)	17. CAFETERIA/MEAL SERVICE AREA: Offers a clean, pleasant, and safe setting with adequate space for eating meals	Percent Met
		67%
	A. Sufficient Space for food purchasing/service areas with necessary space for seating.	1
	B. Equipment and furniture are in good repair.	1
	C. Tables and chairs appropriately-sized for students with space to accommodate special needs.	1
	D. Environment minimizes distractions from choosing and eating healthy foods through measures such as adequate lighting, noise reduction and seating arrangements.	1
	E. Hand-washing/sanitizing stations available, accessible, and located in convenient area(s) near food service to encourage safe food handling practices.	**0**
	F. Entrances are clear, dry, and free of obstacles, and facilitate free-flowing traffic to reduce or eliminate congestion and safety risks.	**0**

Assigned by school committee

Calculated by SNPA assessment team

Scored by agreement of SNPA auditors

E. HAND-WASHING/SANITIZING STATIONS	0

Suggestions for action…

Follow the recommendations in the *Action Guide for School Nutrition and Physical Activity Policies*. See the section "Surroundings for Eating" (pg. 122).

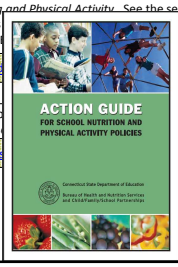
http://www.sde.ct.gov/sde/lib/sde/PDF/DEPS/Student/NutritionEd/Action_Guide.pdf

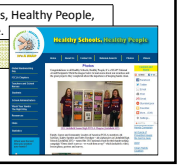
Incorporate the recommendations in the *School Health Guidelines to Promote Healthy Eating and Physical Activity*. See the section "Provide Access to Healthy Foods … es and to Safe Spaces, Facilities, and … Physical Activity " (pg. 18).

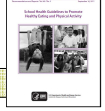
http://www.co…

Explore examp… the Healthy Schools, Healthy People, It's a SNAP! (S… revention) website.

http://www.its…







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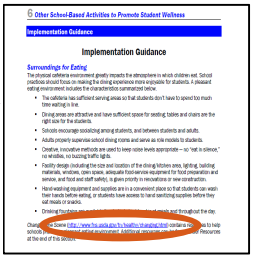
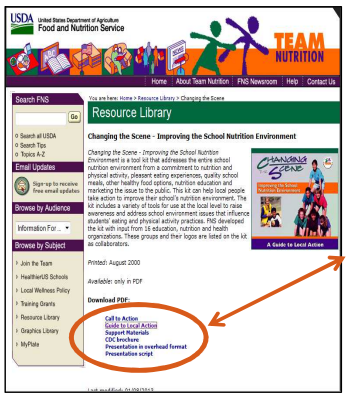


USDA Resource!



Priority (H, M, L)	SCHOOL PHYSICAL ACTIVITY AREAS OF INTEREST (n=16)	Percent Met
	1. *Indoor Space*: Gymnasium and/or dedicated multi-purpose space is available to accommodate physical education, physical activity/active play.	
	2. *Outdoor Space/Fixed Features*: Outdoor space is adequately sized for teaching and active play, has clearly defined boundaries, and comprises a variety of appropriate physical activity/active play settings, equipment, and materials.	
	3. *Shelter and Shade Structures*: Natural or artificial shade structures and/or shelters provide protection from sun and/or inclement weather.	
	4. *Natural Features*: Natural or green playground areas, elements, and/or features are available.	
	5. *Garden Features*: Gardens and landscaping includes a variety of accessible plantings, growing environments (e.g. orchards, in ground beds, raised beds, and/or containers), and special conditions that are available for physical activity/active play.	
	6. *Surface and Surface Markings*: Indoor and outdoor surfaces and surface markings provide for a variety of safe movement activities/active play.	
	7. *Enclosures and Safety Features*: School yard, grounds and outdoor facilities provide a safe, enclosed space for physical activity/active play.	
	8. *Neighborhood Features*: Built environment features/neighborhood proximal to the school property provides safe physical activity/active transportation access for pedestrian and bicycle circulation from the neighborhood to the site entrances to the building.	
	9. *Portable Equipment*: Portable equipment is available, easily accessible, and offers a wide variety/range of experiences.	
	10. *Atmosphere/Ambiance*: Indoor and outdoor spaces have a friendly, welcoming, inclusive, and inviting atmosphere that are culturally appropriate and stimulate a variety of sensory experiences (i.e. touch/textures, smell, listening, looking, vestibular and proprioceptive input).	
	11. *Movement Opportunities*: Indoor and outdoor fixed and portable features promote physical activity, active play and a variety of developmental movements.	
	12. *Before/After School and Summer Extracurricular Programs*: School supports and/or partners with community resources to provide physical activity opportunities before and/or after school and in the summer. Extracurricular programs are available in various indoor and outdoor facilities.	
	13. *Garden Spaces*: Designated landscape/garden spaces exist and is used to promote physical activity/active literature habits.	
	14. *Physical Activity and Wellness Policy*: School has implemented the district wellness policy, drafted a written physical activity policy and communicates with school staff, families and the district regarding students' physical activity progress on an annual basis; school's physical activity goals are integrated into the school's overall long-range wellness goals/plan.	
	15. *Physical Activity and Wellness Committee*: Active wellness council/committee exists that has specific physical activity related objectives and/or an active physical activity council/subcommittee.	
	16. *Structured Physical Education*: School has a structured physical education/physical activity program that is coordinated and/or instructed by trained/credentialed physical educator(s).	

SNPA Applications

1) **Assess** school resources and readiness to implement environmentally-focused "best" practices
2) **Plan and implement** partnerships, programs, and policies to change school nutrition and PA contexts
3) **Evaluate** effectiveness of school-level efforts to increase resources and improve practices that support students' nutrition and PA behaviors

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Scoring the SNPA

< 25%	26 < 50%	51 < 75%	76 < 100%	> 100%
LEVEL 1 Poor Practice	LEVEL 2 Fair Practice	LEVEL 3 Good Practice	LEVEL 4 Best Practice	LEVEL 5 Better than Best
No / very few best practice criteria met	Some best practice criteria met	At least half of best practice criteria met	Most to all best practice criteria met	All and more best practice criteria met

SNPA Scoring Scale

1. Each *Area of Interest* is scored by: # criteria met/# criteria available = % met
2. Categorical scores may be calculated in the following environmental domains:
   - Physical Activity
   - Nutrition
   - Physical
   - Situational
   - Policy
3. Overall SNPA score (# criteria met/# criteria available = % met)

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GROW Schools Baseline SNPA Environmental Assessment

- SNPA assessments were conducted in 6 rural elementary schools between January-February, 2013.
- For each school, the SNPA was completed by two trained Extension Field Faculty in partnership with school staff and adult stakeholders.

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Results: Descriptive Characteristics

Characteristic	County 1		County 2		County 3	
School	1	2	3	4	5	6
Student enrollment	553	441	494	363	182	176
Eligible (%) for free/reduced meals	69.8	67.8	57.3	61.7	77.5	94.3
Race/Ethnicity (%)						
White	80.7	63.5	92.3	82.4	65.9	36.4
Other	8.3	3.6	4.5	9.9	10.5	57.9
Hispanic	11.0	32.9	3.2	7.7	23.6	5.7

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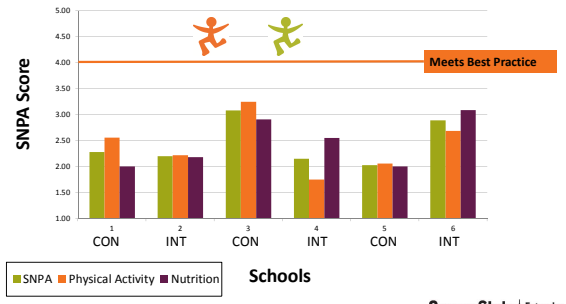
GROW HKC Schools - Baseline SNPA, Physical Activity, and Nutrition Scores



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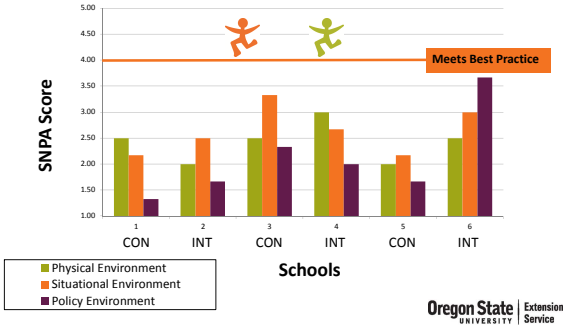
GROW HKC Schools - Baseline Nutrition Environments



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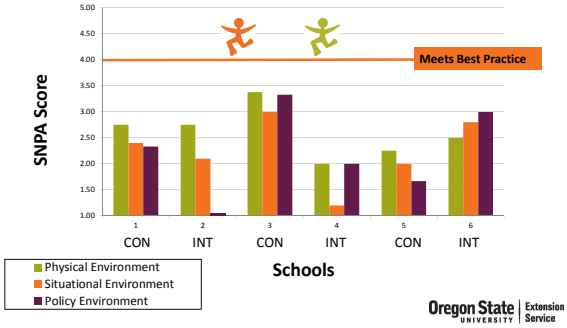
GROW HKC Schools - Baseline Physical Activity Environments



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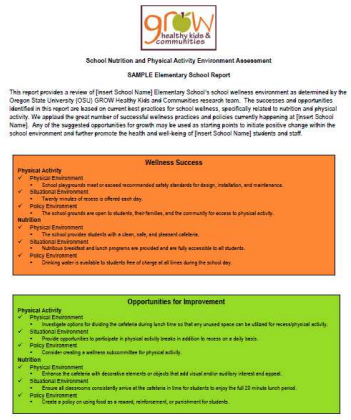
Report and Resource Guide

The SNPA Report and Resource Guide can be leveraged to:

- Secure grant funding
- Document school-level changes resulting from national, state, and/or district policies
- Evaluate school wellness, health and performance factors & practices


School Nutrition and Physical Activity Environment Assessment

SAMPLE Elementary School Report

Wellness Success

Opportunities for Improvement

Conclusions from baseline assessments…

Rural Students

- **Overweight and obesity prevails** among K-6 grade students and follows an **upward trend beginning around grade 3**

Rural Schools

- **Vary** across *Areas of Interest* and schools **but generally fail to meet best practices**
- **Prioritize improvements to environments** that will make easier students' weight-healthy behaviors
- **Need resources** to address the areas of improvement identified by the SNPA assessment

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July 2013 – October 2013

OR Farm to School - School District $20,400

Community on the Move Fitness Trail – Elementary School, HEAL

Commun … General

YA4… …00

Playw… …$2500

Fuel Up and Play 60 Elementary School - OR Dairy Council $500

Elementary School 100 Mile Club - Active Schools Acceleration Grant $1000

Community School Garden Camp - $500

Fuel Up and Play 60 Elementary School - OR Dairy Council $4000

$126,205

Key: Green = Nutrition Environment

Purple = Physical Activity Environment

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Questions?

Our GROW HKC Team!