

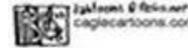
Session Objectives

- Participants will be able to:

- **Describe** the prevalence of overweight and obesity among rural elementary school students.

- **Describe** the purpose and application of

- the **SNPA** as an environmental approach to obesity prevention for rural elementary schools.
- of **HEAL MAPPS** as an environmental approach to obesity prevention for rural communities.



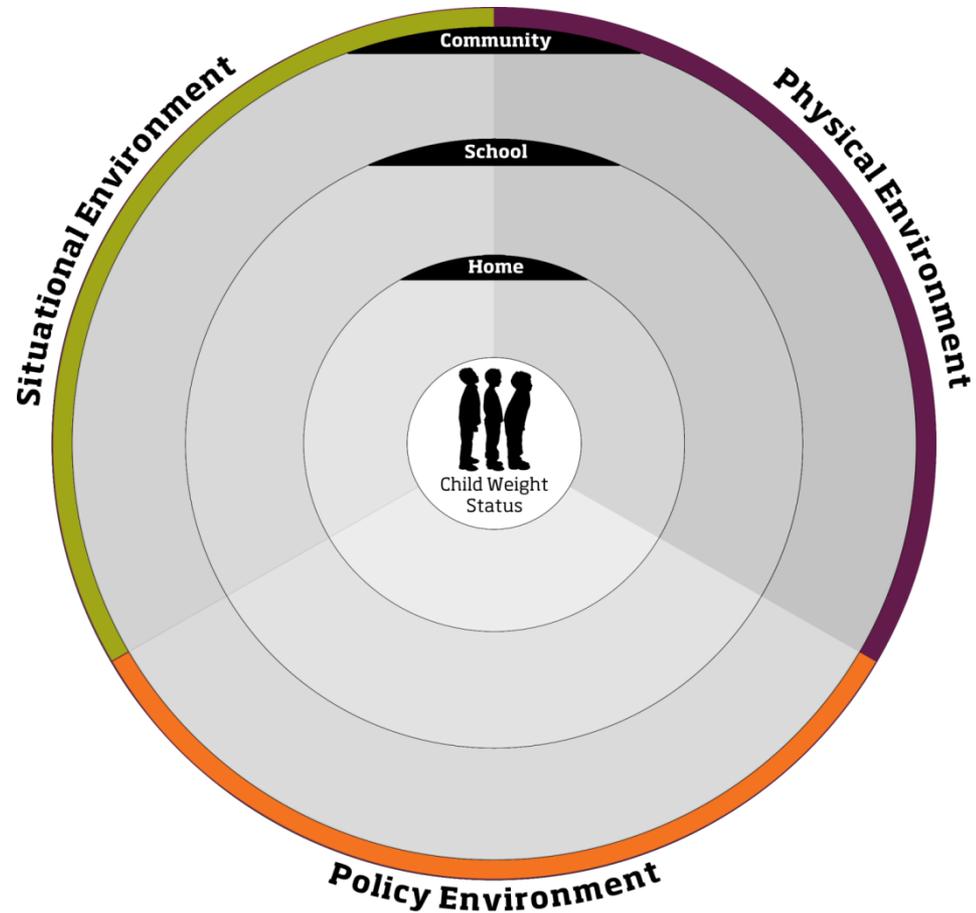
GROW HKC Specific Aims



- Our aim is to plan, implement, and evaluate a multi-level intervention targeting rural home, school, and community behavioral settings to promote Healthy Eating and increase Physical Activity, and thus improve weight status among rural children.

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.
- Data support multi-level efforts as “best practice”



Intervention Design

Condition

Columbia

Clackamas

Klamath

Control

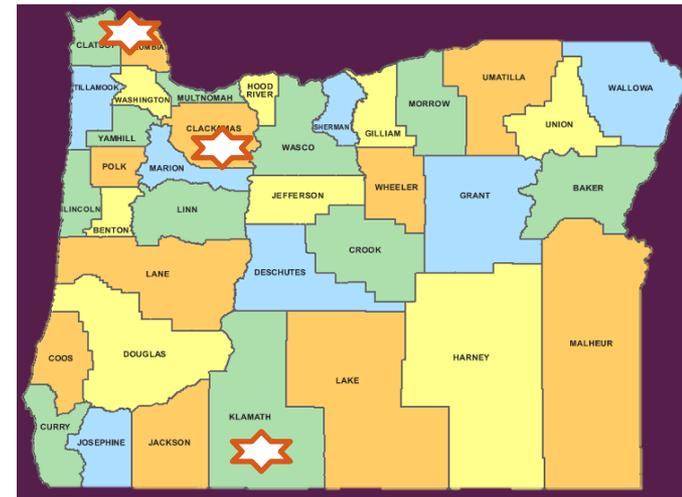
R



Intervention

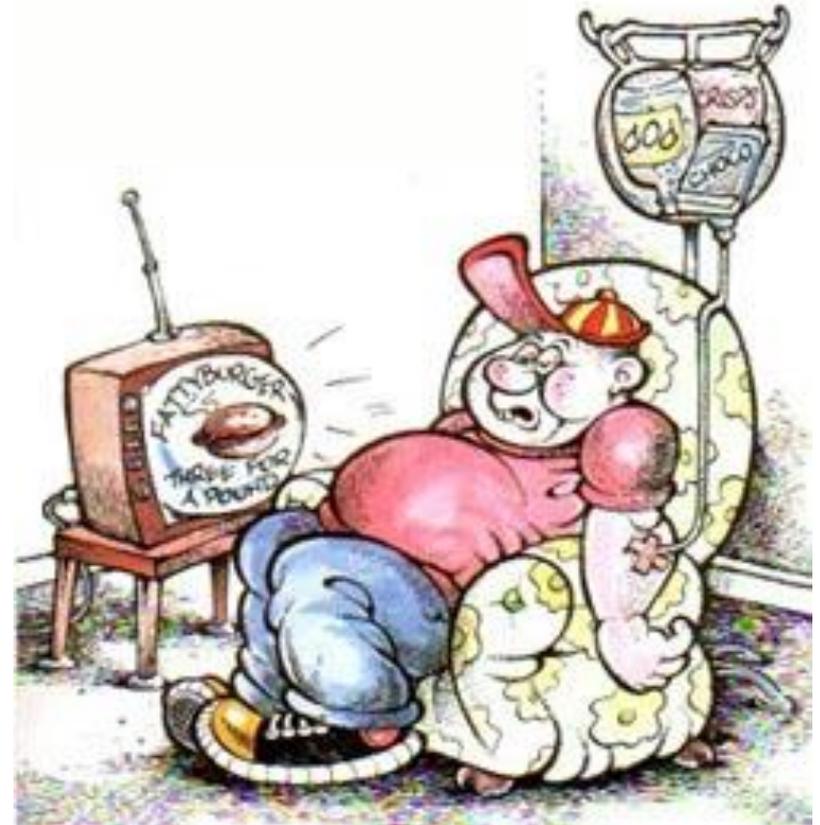


- All communities are low income
 - defined by elementary schools with > 50% of student population eligible for free/reduced meals
- Intervention efforts directed toward:
 - Community, School, Family Home



Barriers to Obesity Prevention

- Achieving energy balance is an individual level expectation with multi-level level challenges.
- Individual, family, community level factors impact our health behaviors.



Factors Influencing Obesity Prevalence

International Factors

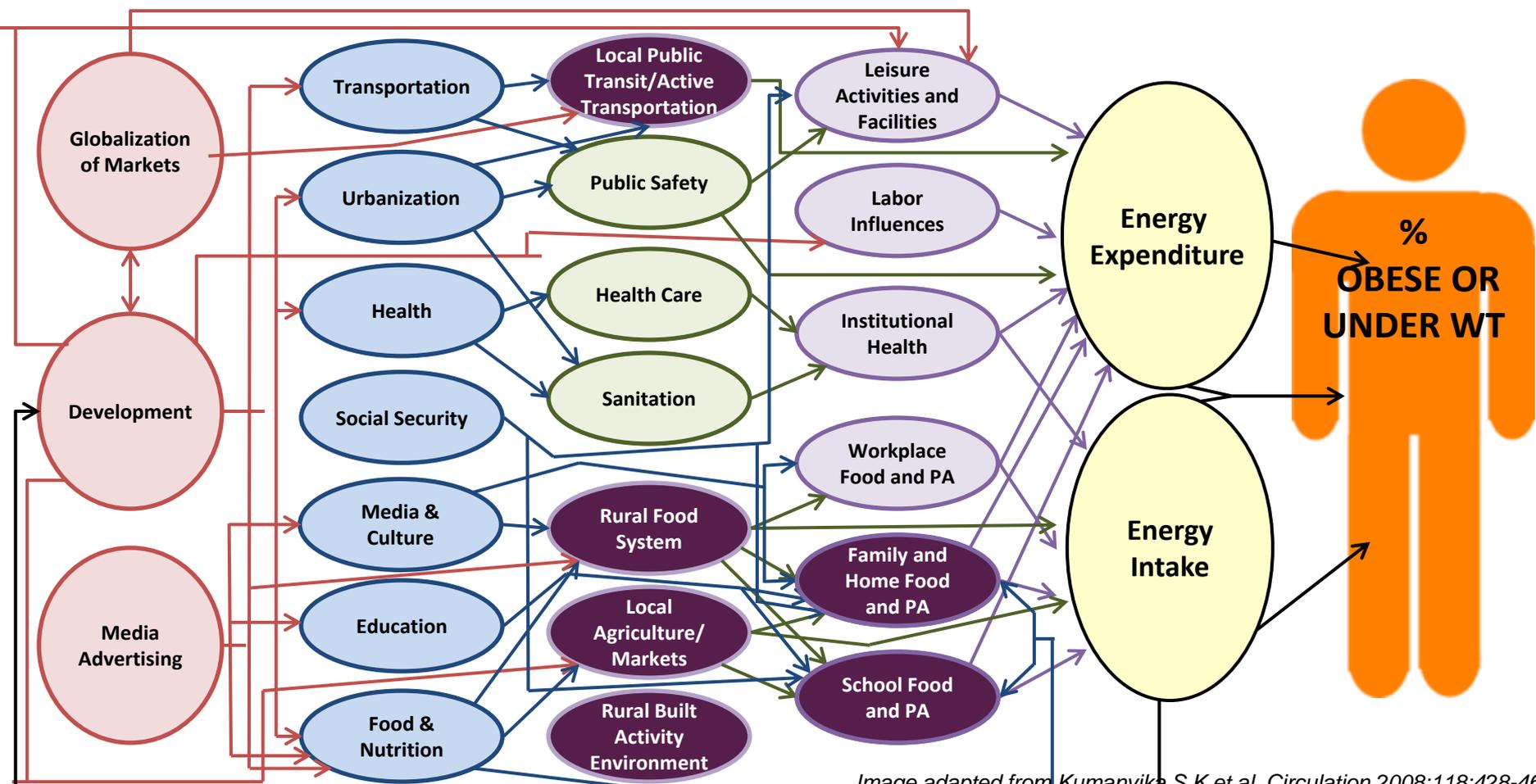
National/Regional Factors

Community Factors

Local Environment Factors

Individual Factors

Population Weight



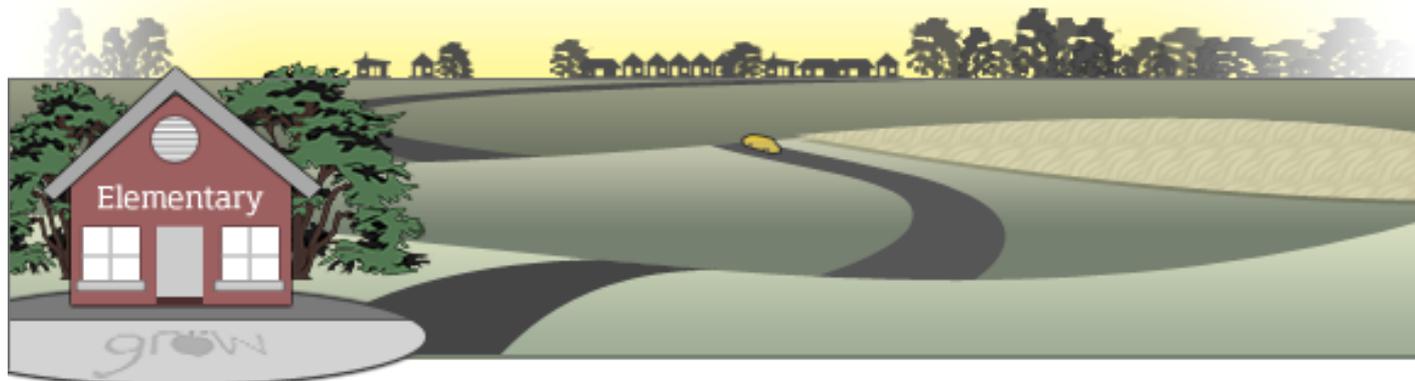
It takes a village to change behavior....



- **Promoting PA** 
- **Promoting HE** 
- **Sectors of Influence**
 - Community
 - Private
 - Public
 - Schools
 - Family Homes

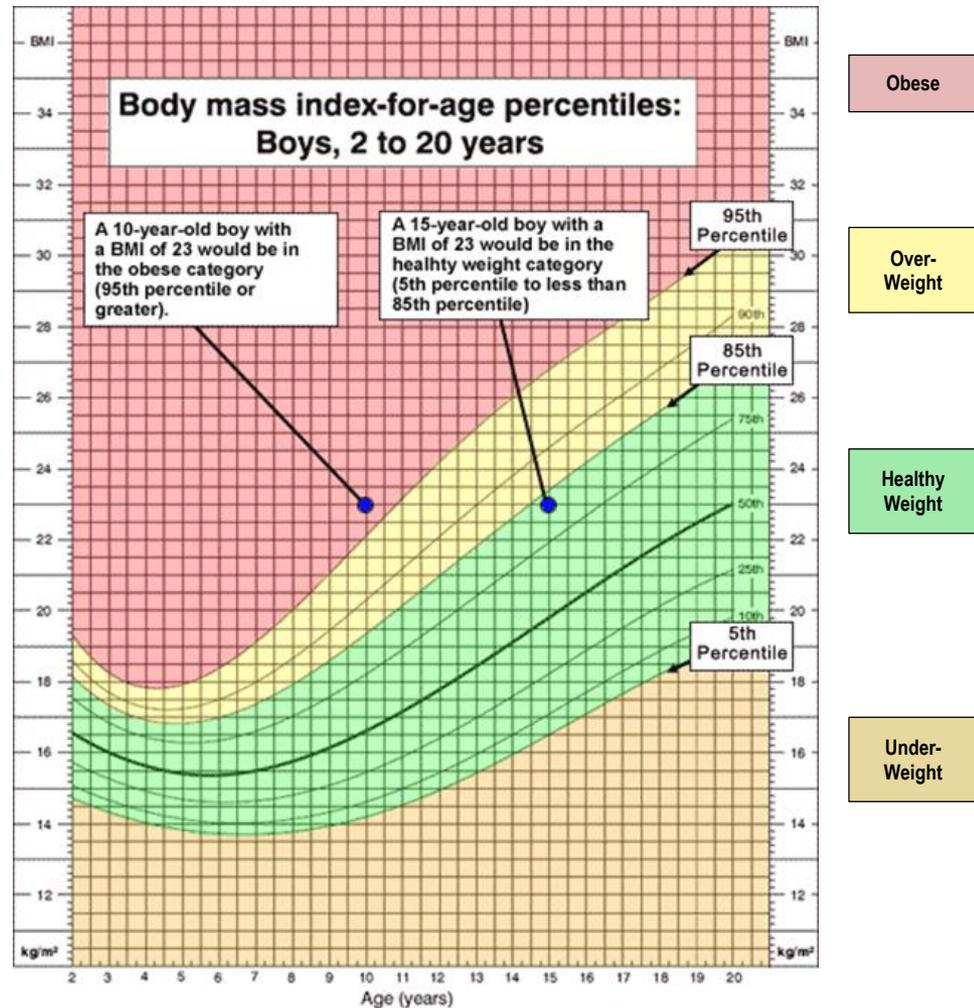
Positive efforts in one environment (e.g. schools) can be undone if other environments (home) do not **promote opportunities** for PA or HE or **demonstrate value** toward PA and HE.

Obesity Prevalence in GROW Rural Schools

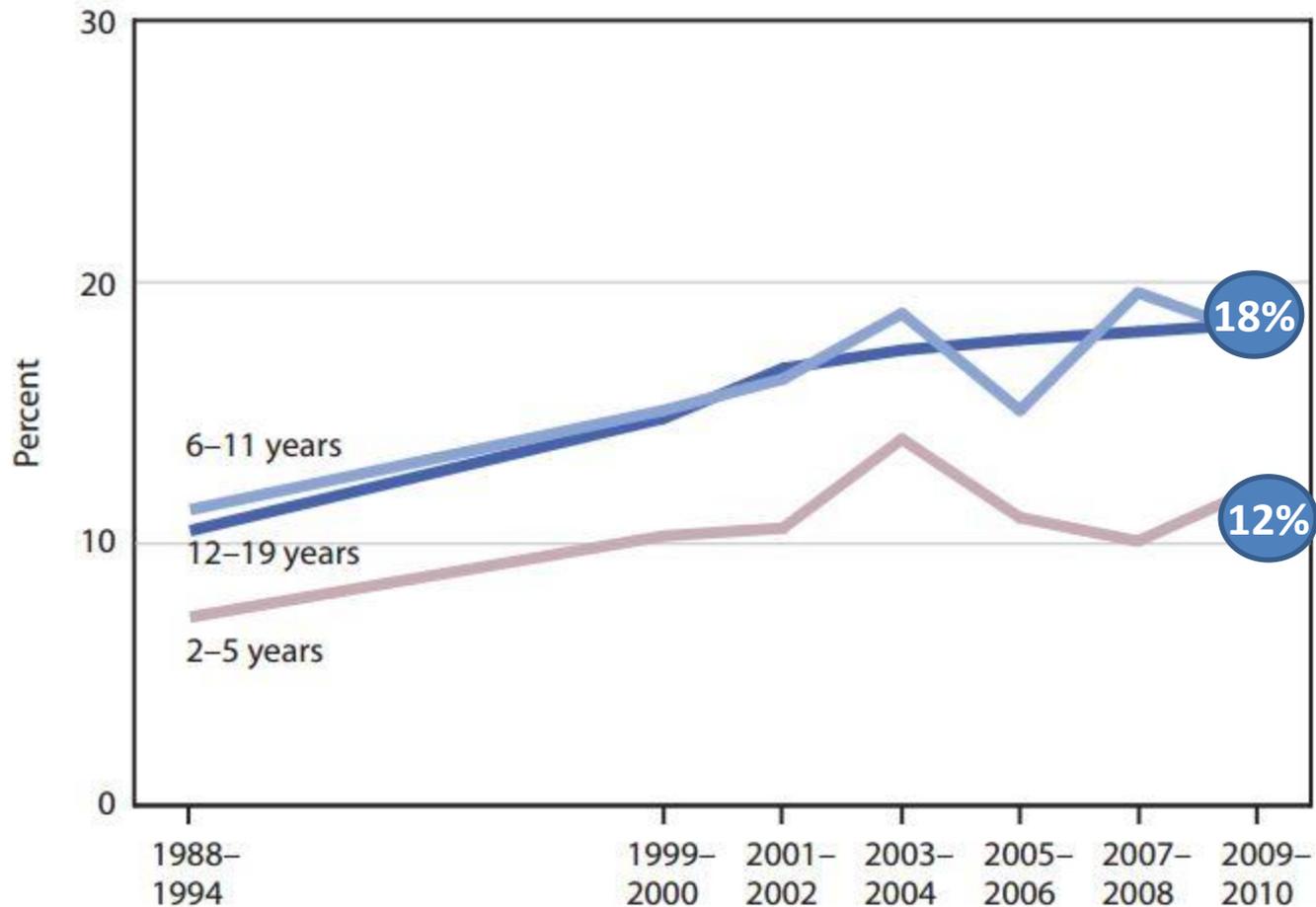


Overweight and Obesity Definitions

- **Adults, 20+ years: BMI**
 - Underweight: BMI < 18.5 kg/m²
 - Healthy: 18.5-24.9 kg/m²
 - Overweight: 25-29.9 kg/m²
 - Obese = ≥ 30 kg/m²
- **Children and adolescents, 2-19 years: BMI**
 - Underweight: < 5th %ile
 - Healthy: 5th %ile - < 85th %ile
 - Overweight: $\geq 85^{\text{th}}$ < 95th %tile
 - Obese: $\geq 95^{\text{th}}$ %tile



Obesity Trends Among U.S. Children



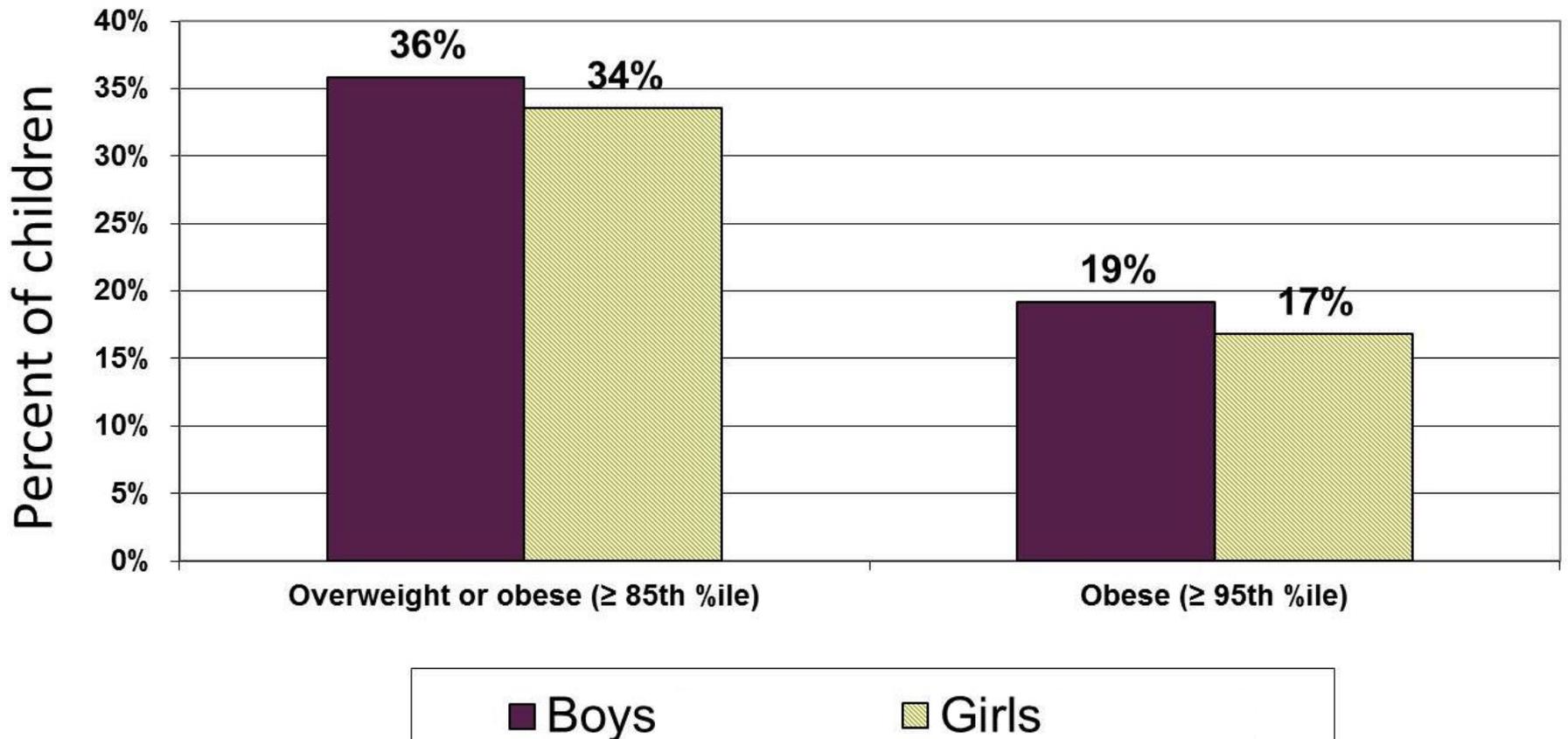
SOURCE: CDC/NCHS, *Health, United States, 2012*. Data from the National Health and Nutrition Examination Survey (NHANES).

Height-Weight Assessment

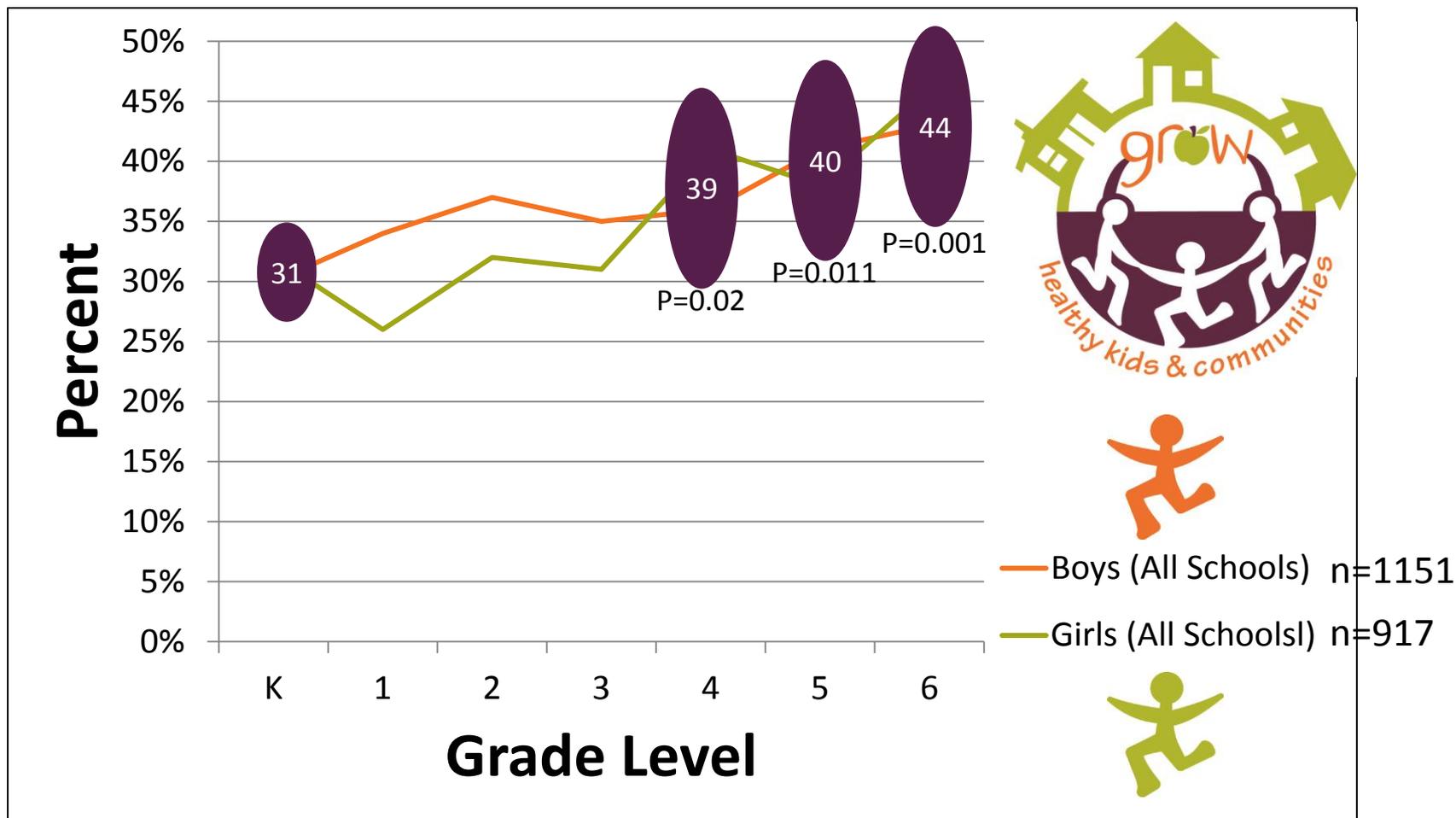


- Height and weight assessments were conducted during the 2012-2013 school-year in six rural elementary schools.
- Assessments were conducted by research staff in partnership with Extension Field faculty and school volunteers.

Baseline Prevalence of Overweight and Obesity by Gender (n=2068)

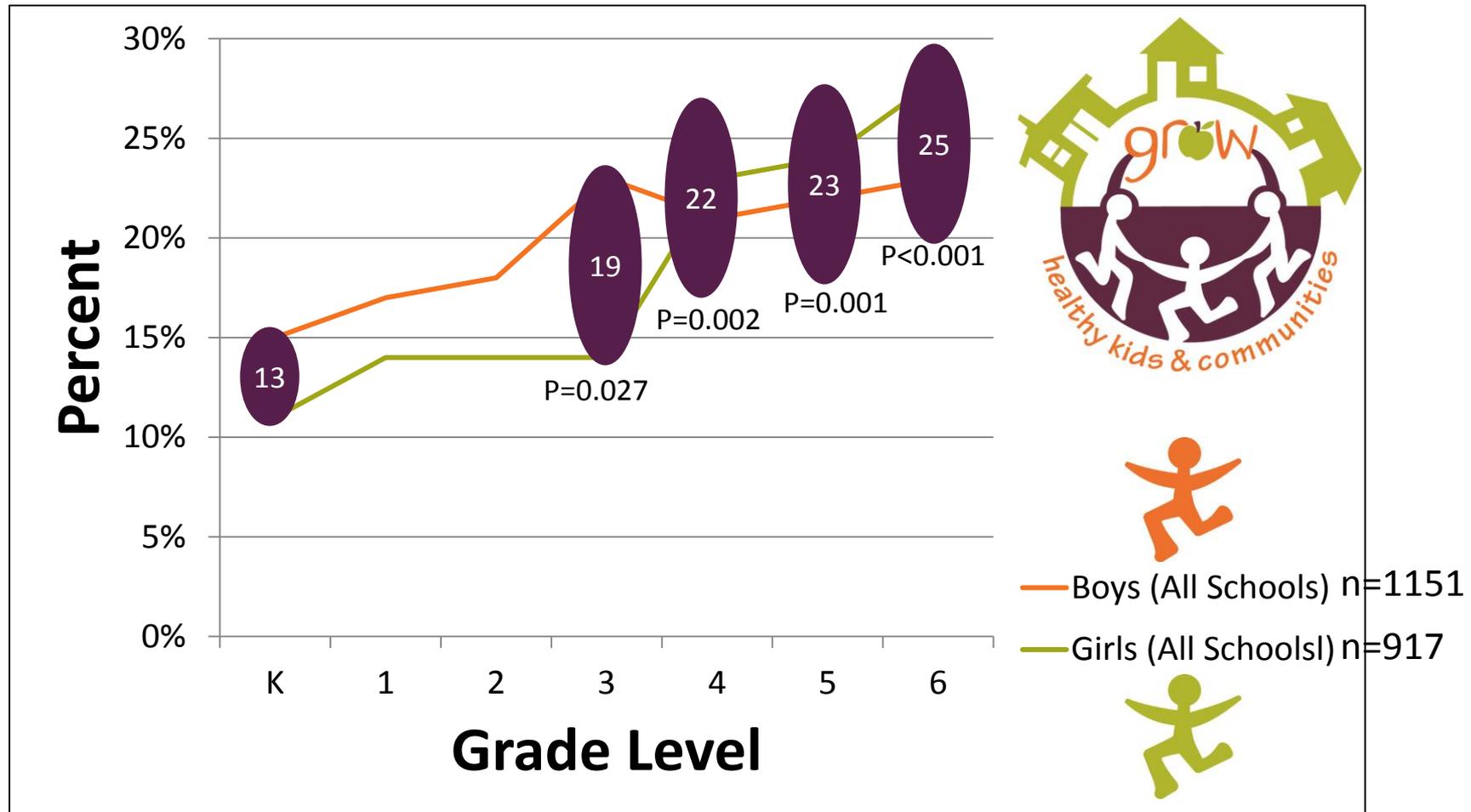


All GROW Schools, Prevalence of Overweight or Obese, by Grade and Sex



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%**

Environmental Assessment in GROW Schools: SNPA



Promoting Healthy Schools

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

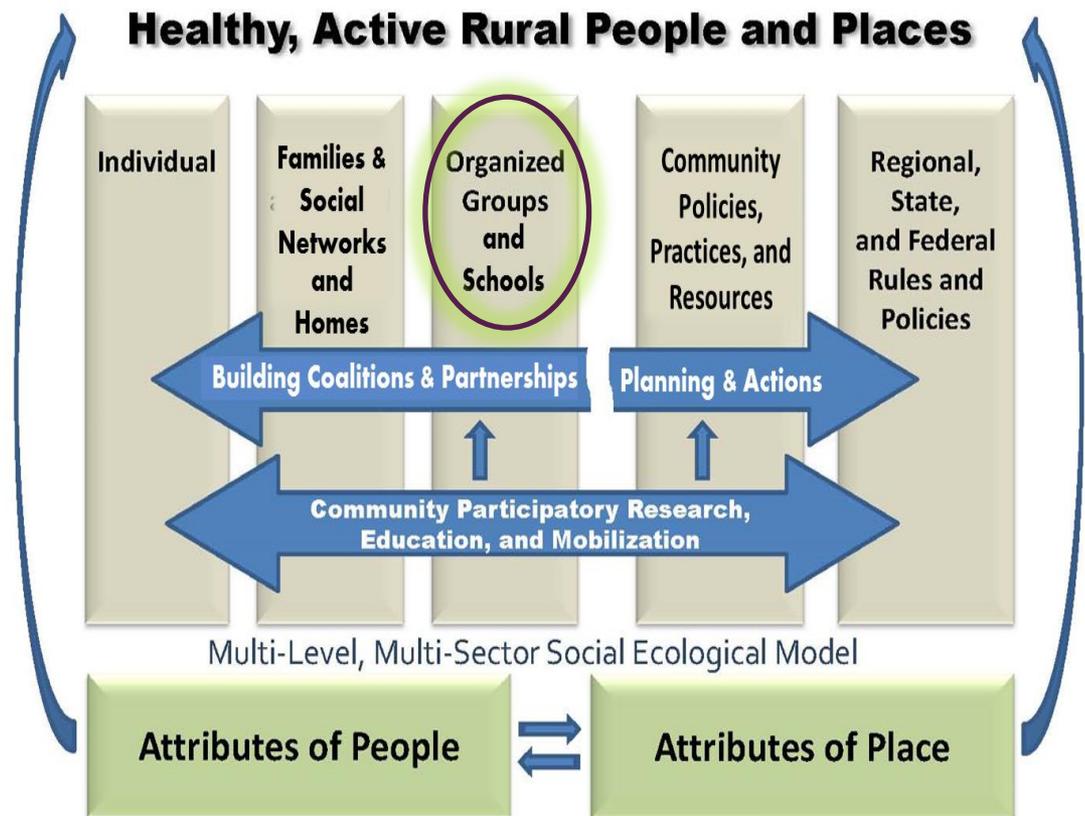


IOM. 2012. *Accelerating Progress in Obesity Prevention: Solving the Weight of the Nation*.
CDC. 2013. *Results from the School Health Policies and Practices Study 2012* .

School Nutrition and Physical Activity (SNPA) Environmental Assessment Tool

Developed to:

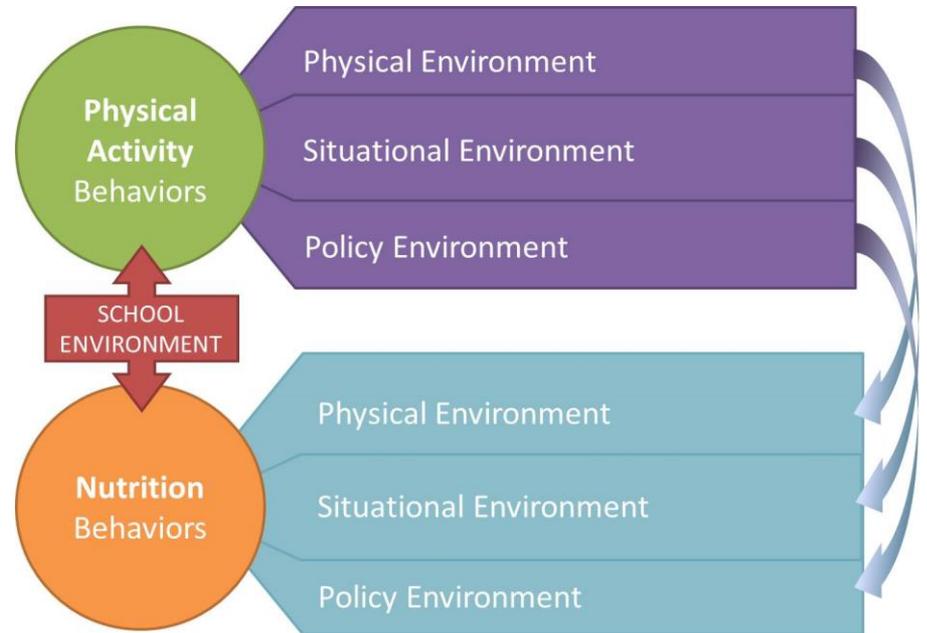
- *Address* gaps in existing assessment tools
- *Assess* attributes of the school environment
- *Align* ‘best practice’ strategies for change with school-driven actions



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

SNPA Model

- **Physical Activity (N=16), e.g.**
 - *Indoor PA/Activity Space*
 - *Fixed Outdoor Features/Space*
 - *Garden Features*
 - *Natural Features*
 - *Neighborhood Features*
 - *Movement Opportunities*
 - *Portable Equipment*
 - *Atmosphere/Ambiance*
 - *PA & Wellness Policy*
 - *Structured Physical Education*
- **Nutrition (N=11), e.g.**
 - *Safe & Adequate Meal Service Area*
 - *School Meals*
 - *Healthy Food & Beverage Practices*
 - *Promoting Water Consumption*
 - *Nutrition & Wellness Policy*
 - *Health & Nutrition Education*
 - *Before/After School & Summer Programs*



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.

Applications

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

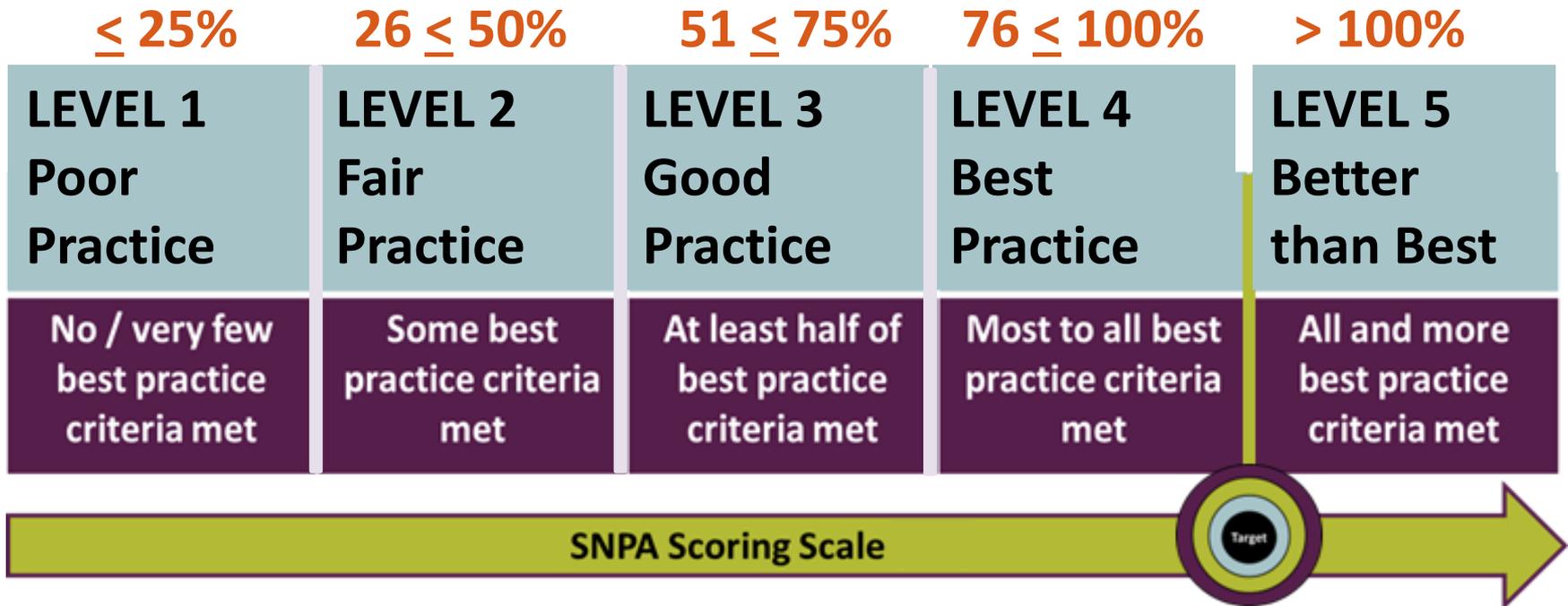


Utility: Data Sources, Informants, and Criteria

Category: Policy Environment	
Area of Interest 16: Structured Physical Education	
Required Data Sources: <input checked="" type="checkbox"/> Direct Observation Time <u>10:30</u> <u>AM</u> / PM <input checked="" type="checkbox"/> Interview <input type="checkbox"/> Document Review <input type="checkbox"/> Other, please specify _____	Informant: <input type="checkbox"/> School Administrator <input type="checkbox"/> Teacher, specifically <u>PE Teacher</u> <input type="checkbox"/> District Food Service Director <input type="checkbox"/> Meal Service Manager/Cafeteria Staff <input type="checkbox"/> Classified Staff/Volunteer, specifically _____ <input type="checkbox"/> Wellness Committee <input type="checkbox"/> 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: <input checked="" type="checkbox"/> A – The school has a trained/credentialed Physical Education Teacher. <input checked="" type="checkbox"/> B – Students participate in a minimum of 150 minutes of structured physical activity education per week. <input checked="" type="checkbox"/> 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).	

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

Scoring the SNPA



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)

GROW Schools

Baseline SNPA Environmental Assessment

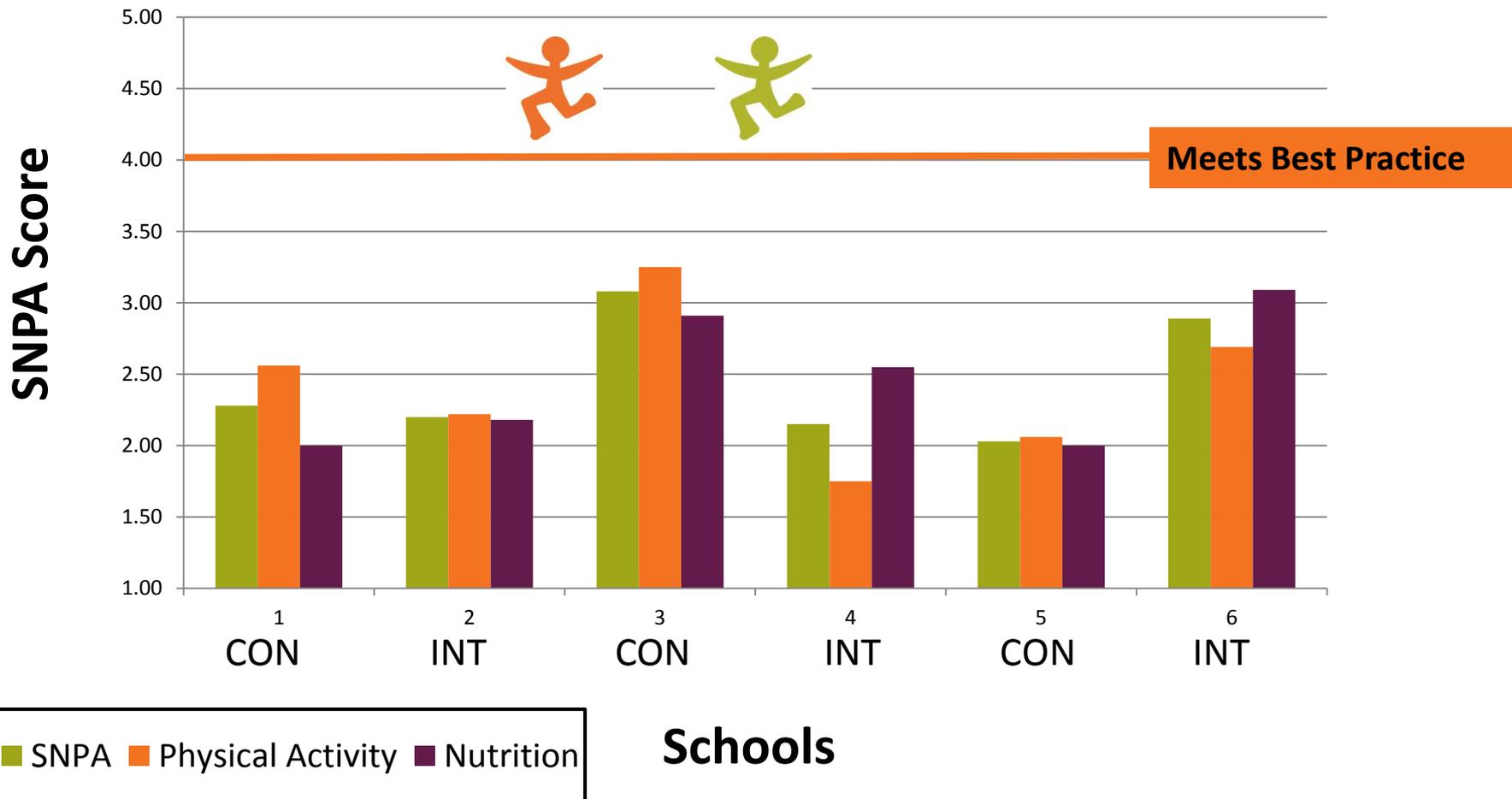
- SNPA assessments were conducted in 6 rural elementary schools between January-February, 2013.
- For each school, the SNPA was completed by two trained Extension Field Faculty in partnership with school staff.



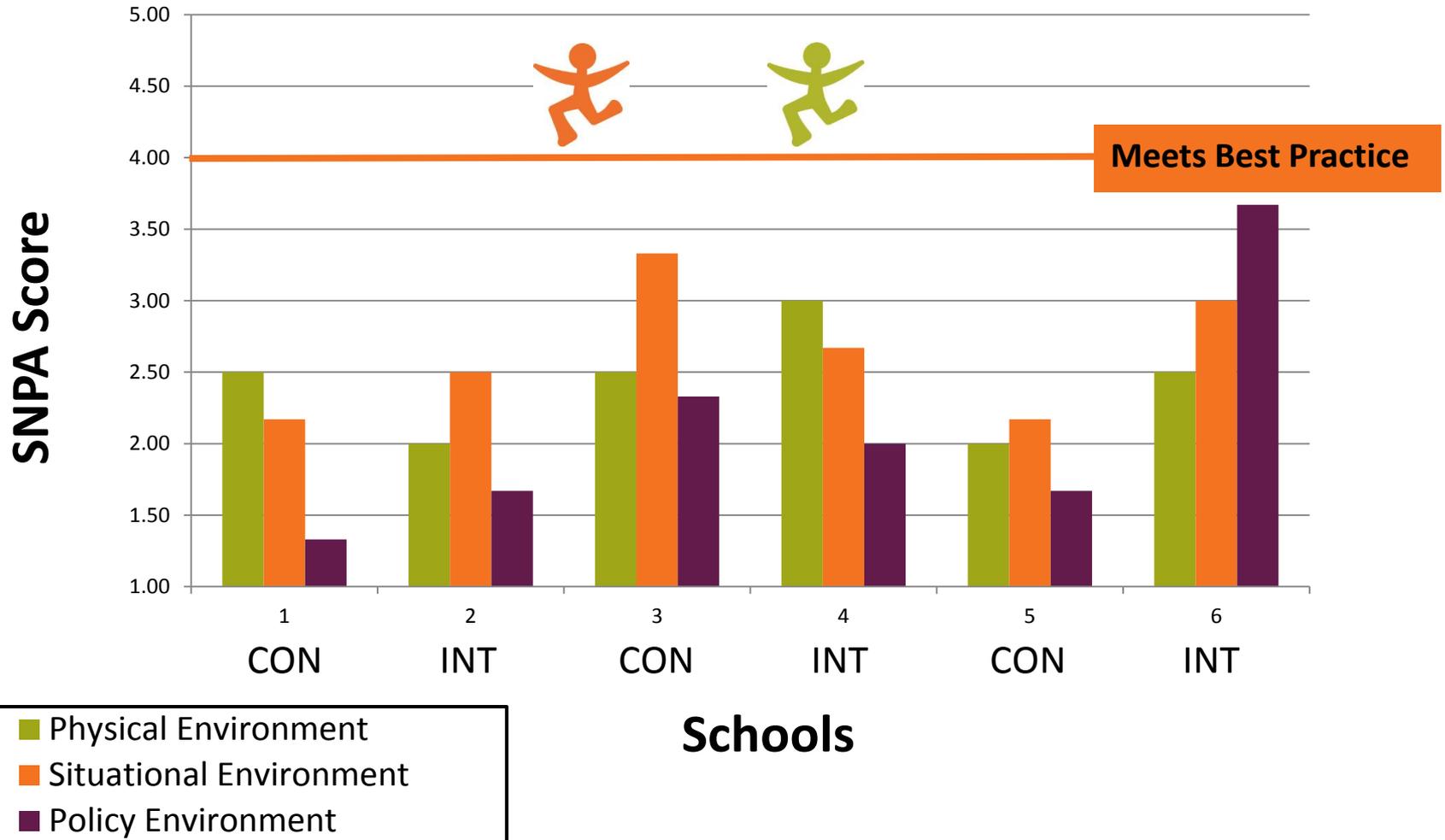
Results: Descriptive Characteristics

Characteristic	County 1		County 2		County 3	
	1	2	3	4	5	6
School						
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

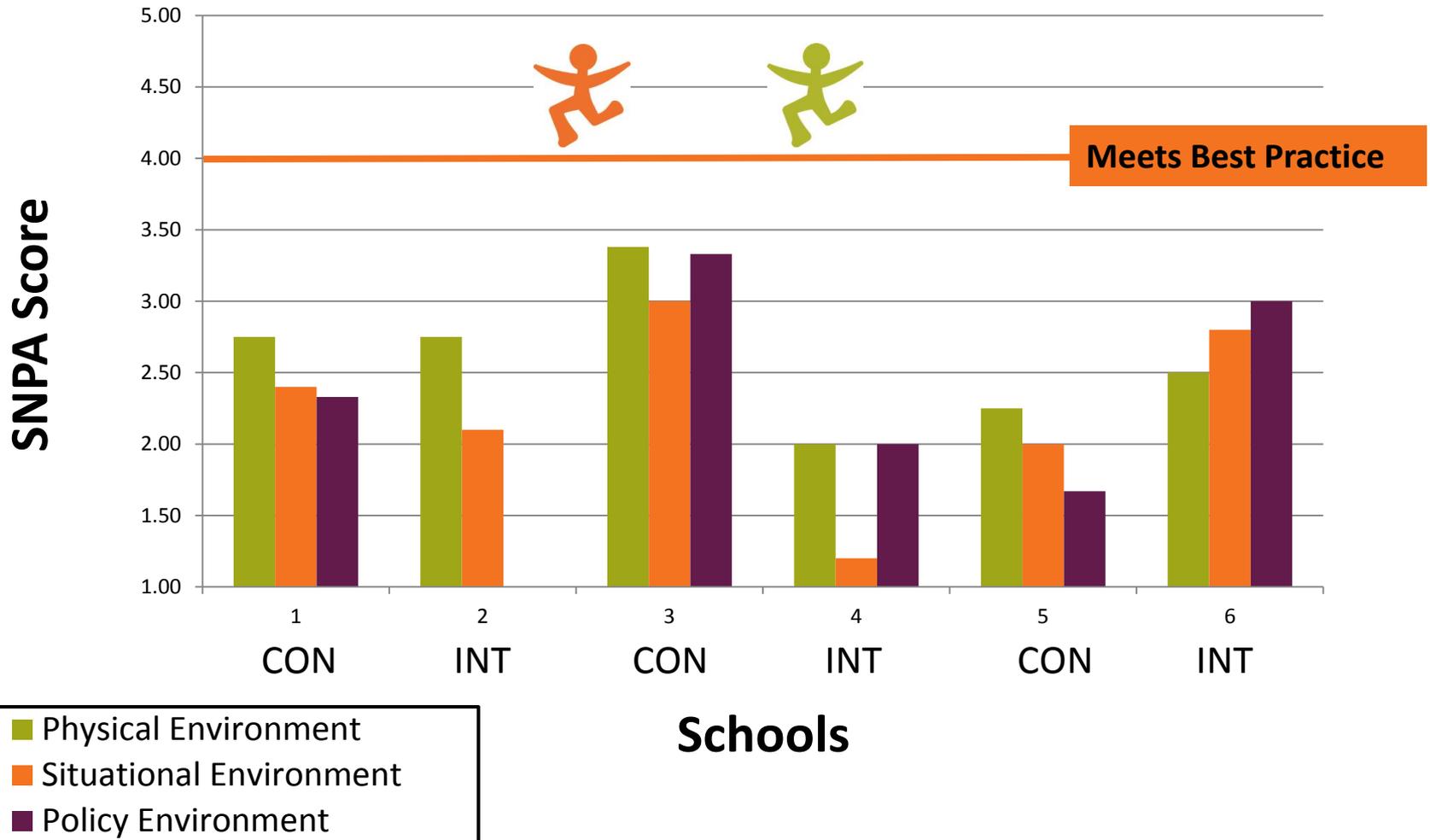
GROW HKC Schools - Baseline SNPA, Physical Activity, and Nutrition Scores



GROW HKC Schools - Baseline Nutrition Environments



GROW HKC Schools - Baseline Physical Activity Environments



Report and Resource Guide



School Nutrition and Physical Activity Environment Assessment

SAMPLE Elementary School Report

This report provides a review of [Insert School Name] Elementary School's school wellness environment as determined by the Oregon State University (OSU) GROW Healthy Kids and Communities research team. The successes and opportunities identified in this report are based on current best practices for school wellness, specifically related to nutrition and physical activity. We applaud the great number of successful wellness practices and policies currently happening at [Insert School Name]. Any of the suggested opportunities for growth may be used as starting points to initiate positive change within the school environment and further promote the health and well-being of [Insert School Name] students and staff.

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

Wellness Success

Physical Activity

- ✓ Physical Environment
 - School playgrounds meet or exceed recommended safety standards for design, installation, and maintenance.
- ✓ Situational Environment
 - Twenty minutes of recess is offered each day.
- ✓ Policy Environment
 - The school grounds are open to students, their families, and the community for access to physical activity.

Nutrition

- ✓ Physical Environment
 - The school provides students with a clean, safe, and pleasant cafeteria.
- ✓ Situational Environment
 - Nutritious breakfast and lunch programs are provided and are fully accessible to all students.
- ✓ Policy Environment
 - Drinking water is available to students free of charge at all times during the school day.

Opportunities for Improvement

Physical Activity

- ✓ Physical Environment
 - Investigate options for dividing the cafeteria during lunch time so that any unused space can be utilized for recess/physical activity.
- ✓ Situational Environment
 - Provide opportunities to participate in physical activity breaks in addition to recess on a daily basis.
- ✓ Policy Environment
 - Consider creating a wellness subcommittee for physical activity.

Nutrition

- ✓ Physical Environment
 - Enhance the cafeteria with decorative elements or objects that add visual and/or auditory interest and appeal.
- ✓ Situational Environment
 - Ensure all classrooms consistently arrive at the cafeteria in time for students to enjoy the full 20 minute lunch period.
- ✓ Policy Environment
 - Create a policy on using food as a reward, reinforcement, or punishment for students.

Participatory Environmental Assessment in GROW Communities: HEAL MAPPS™



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?**



Distance to recreation

Compromised rural landscapes

Types, availability and cost of food

Lack of health services

Geographic isolation

High poverty **Safety**

Fewer school and community physical activity opportunities

Lack of active transportation

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

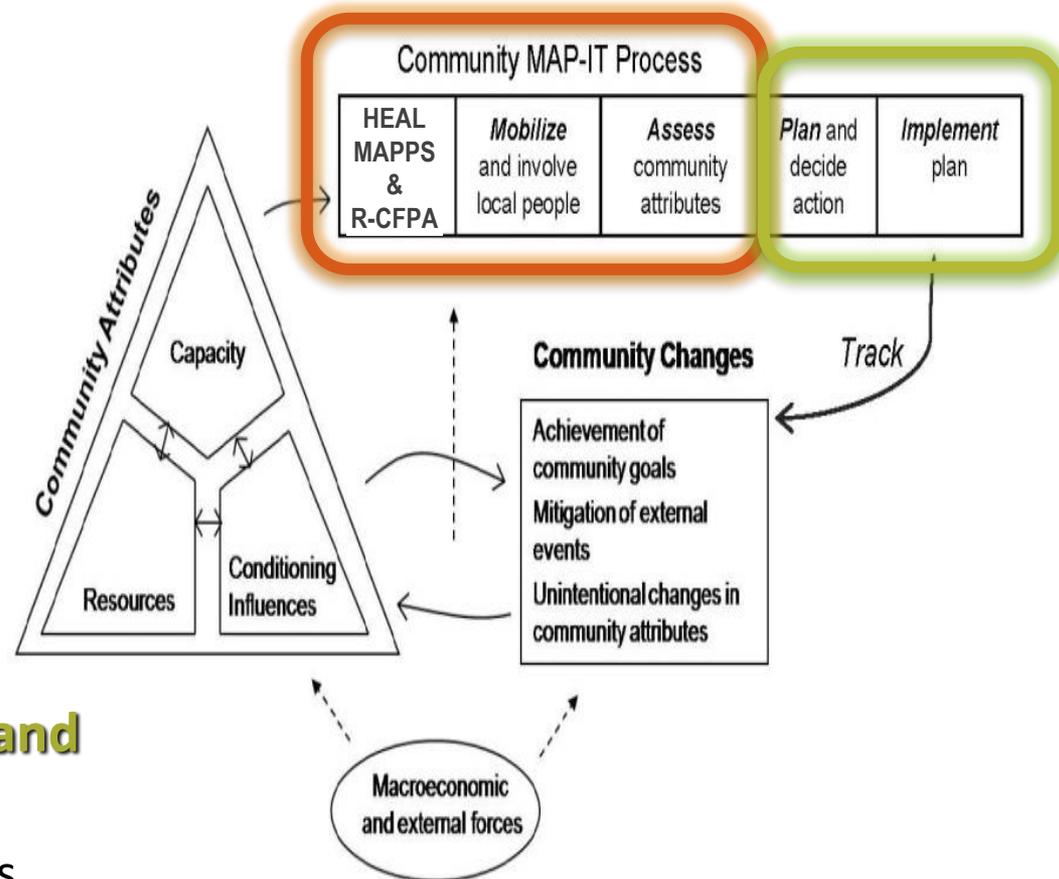


Promoting Healthy Communities

Community-Engaged Research Model

Community-Engaged Assessment

- Mobilize and involve local people – the ‘true’ experts
- Train community residents to use our CBPR tools to
- Assess environmental features of their rural community that support nutrition and physical activity behaviors and habits



Community-Driven Planning and Intervention for Change

- Improve community readiness
- Improve community attributes

Community-Engaged Assessments

HEAL MAPPS™ Assessment
Fall 2012 (Intervention) - Spring 2013 (Control)
Rural Residents' Experience of Community Resources

Condition	Columbia	Clackamas	Klamath
Control Community			
Intervention Community			

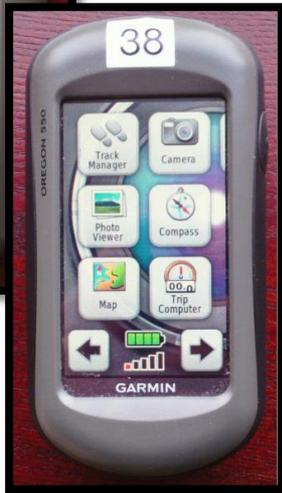
*Rural Residents' Photomap Audit of Community Resources
added Summer 2013

Healthy Eating Active Living: Mapping Attributes using Participatory Photographic Surveys



STEP ONE: Participatory photomapping using camera-enabled GPS

Community members are provided MAPPS equipment and trained to use tools to map features of their community



On their own or with a partner, they photograph (and map) their direct experiences with the food and physical activity environment in the community



They record their experiences of the community features along their route on their route journal.



Community MAPPers use GPS cameras to photograph features...



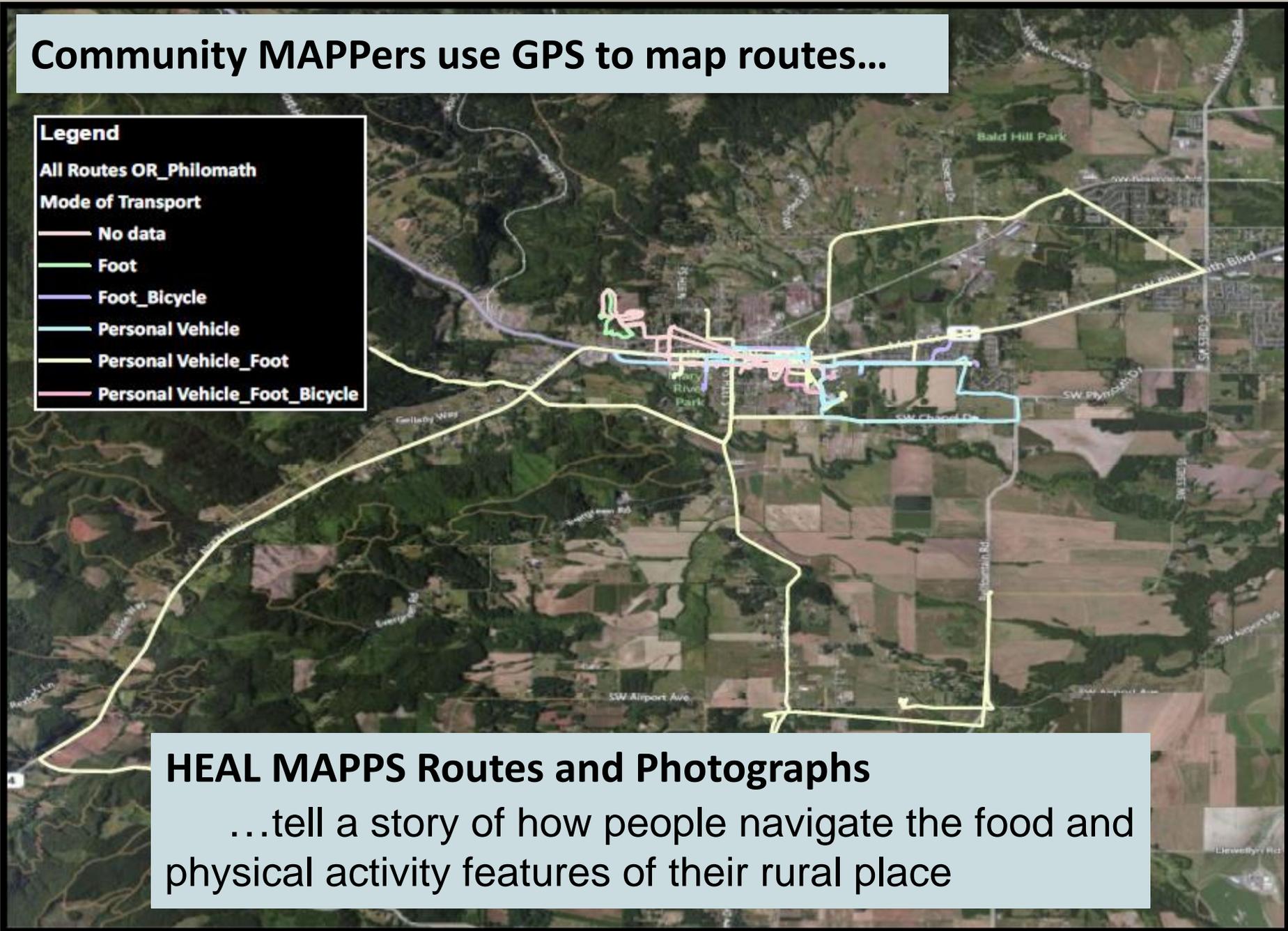
Community MAPPers use GPS to map routes...

Legend

All Routes OR_Phillomath

Mode of Transport

- No data
- Foot
- Foot_Bicycle
- Personal Vehicle
- Personal Vehicle_Foot
- Personal Vehicle_Foot_Bicycle

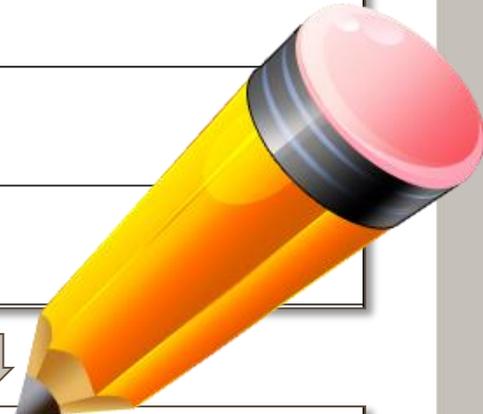


HEAL MAPPS Routes and Photographs

...tell a story of how people navigate the food and physical activity features of their rural place

HEAL MAPPS™ Route Journal...documents one's personal experience of each photographed feature

Photo #	Picture of?	This is a photo of a place or thing that makes it... (check all that apply):				Why do you think this place or thing makes it easy or hard for you or others to be physically active or to eat healthy?
		<u>Easy</u> for you or others to be physically active	<u>Hard</u> for you or others to be physically active	<u>Easy</u> for you or others to eat healthy	<u>Hard</u> for you or others to eat healthy	
Start Photo:	Green GROW HKC Start logo					
1.		—	—	—	—	
2.		—	—	—	—	



15.	<i>Bike path</i>	<u>X</u>	—	—	—	<i>Safe route for children to bike to school</i>
End Photo:	Red GROW HKC End logo					

STEP TWO: MAPPers participate in a focus group to select and organize photographs for their community's conversation...



STEP TWO: Focusing the group's decisions...

- Focus group participants view and discuss all photos from all routes to determine the best 30-40 photos that represent the community's food and physical activity attributes
- **Next step** – Community Conversation!



Polling opinions and discussing options – where personal experience informs public interests

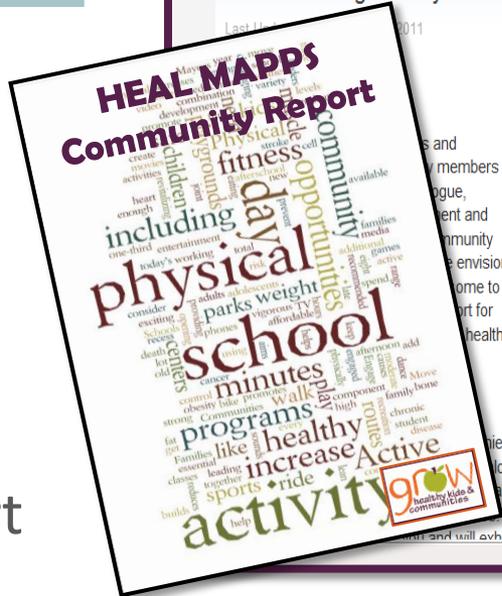
- Does the feature in the photo make it easy or hard for a member of your community to eat healthy or be physically active?
 - Audience is polled and results are displayed
- Tell me more about this feature – who uses this feature – would every community member have the same experience?
 - The narrative is transcribed verbatim and becomes a source of data for the community report



STEP THREE: Community Conversation

STEP FOUR: HEAL MAPPS™ Data and Reports...

- Data analyzed at local level are provided to participating communities as HEAL MAPPS Community Report

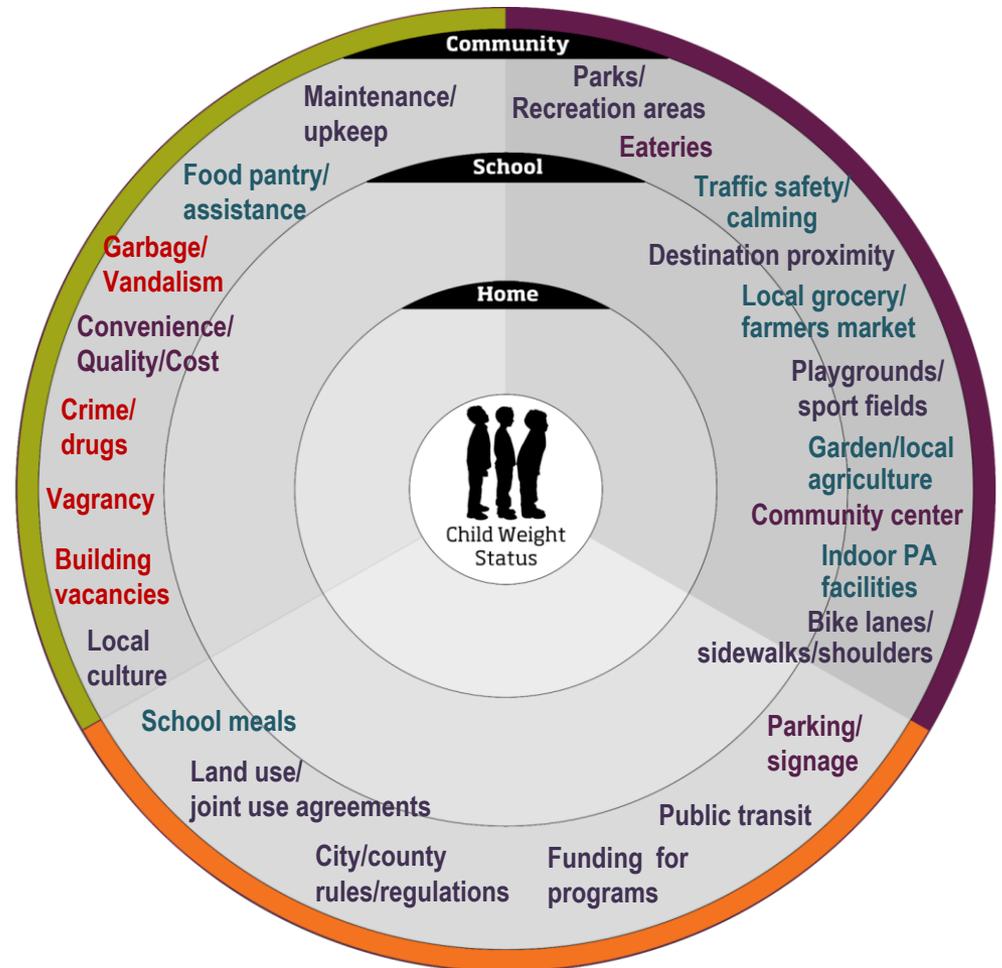


- Community data are aggregated at the county and state level and analyzed to inform an Oregon model of rural obesity prevention

Oregon Rural Communities	HEAL MAPPS™ Participants	Routes Mapped	Attributes Photographed	Reports Disseminated
6	228	54	690	6

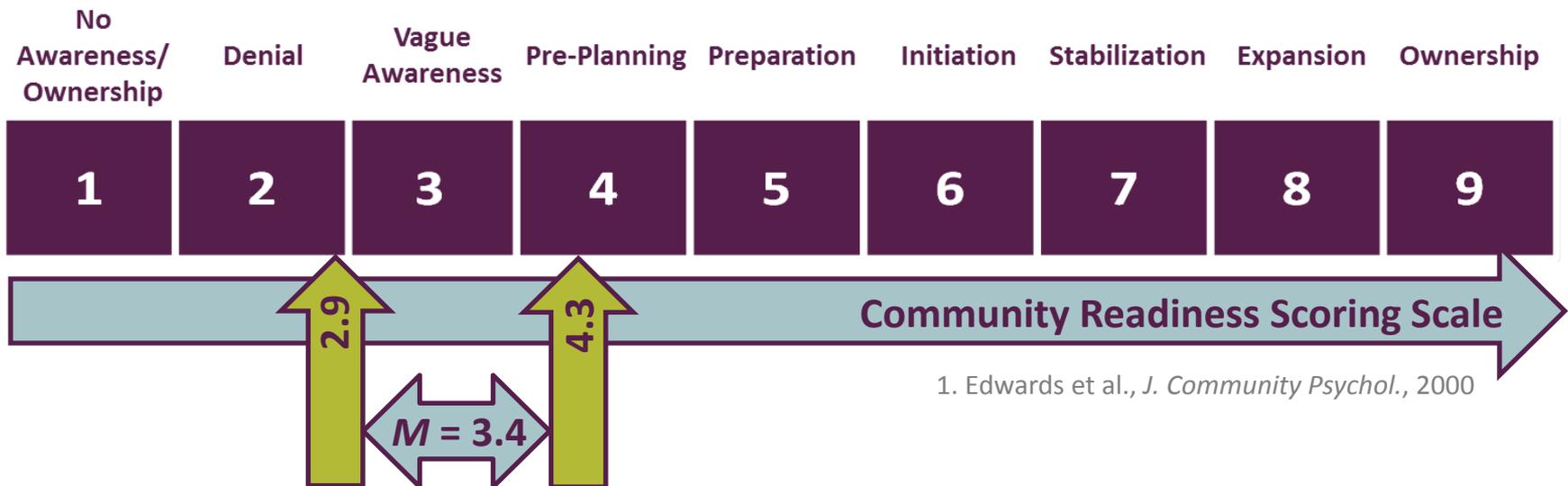
Rural Oregonians' Experiences of Community Resources

- Qualitative data iteratively coded into categories aligning with dimensions of community readiness:
 - Efforts (CR)
 - **Support (Make EASY)**
 - **Barrier (Make HARD)**
 - **EITHER/BOTH**
 - Knowledge of Efforts (CR)
 - **Leadership** (CR)
 - **Community Climate** (CR)
 - Knowledge of Issue (CR)
 - **BE Resources** (CR)
 - Nutrition
 - Physical Activity



Rural Oregonians' Perceptions of Community Readiness

To assess the perceived resources and readiness of rural communities to affect positive community change, we applied the community readiness model¹ to qualitative data collected during HEAL MAPPS™ community conversations.



Generally, communities ranged from “vague awareness” to “pre-planning” indicating a need to increase (1) *awareness that communities can* and (2) *knowledge of how to affect change*

Conclusions from baseline assessments...

Rural Children

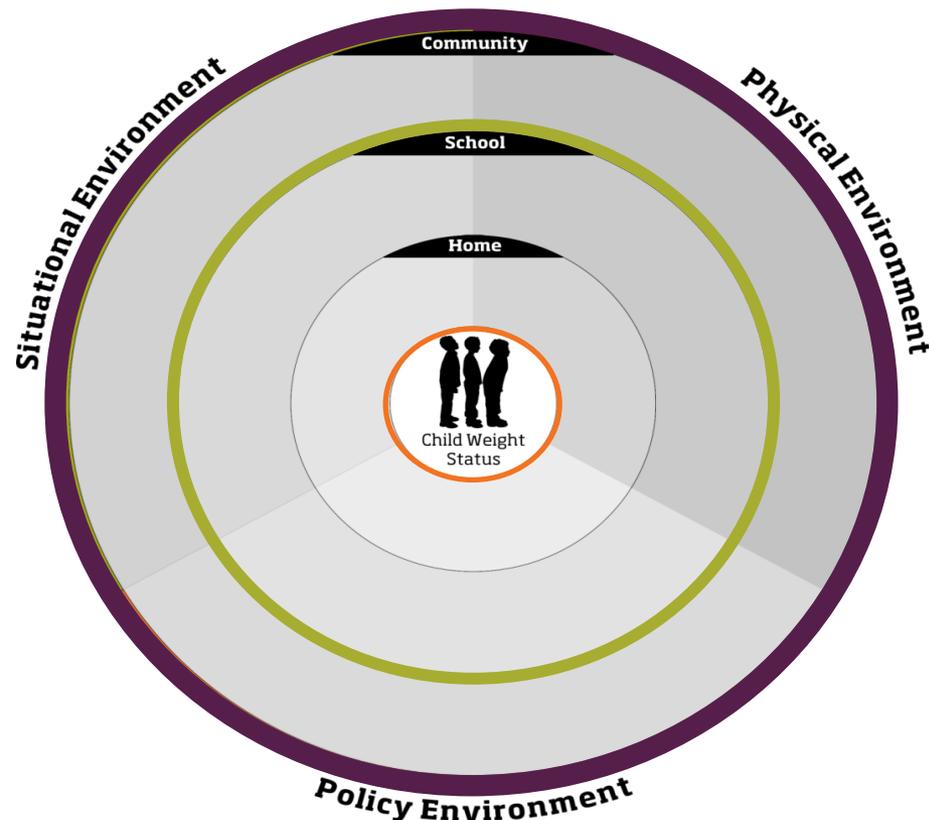
- **Overweight and obesity prevails** among K-6 grade students and follows an **upward trend beginning ~ grade 3**

Rural Schools

- **Poised to improve environments** to support weight-healthy behaviors
- **Need resources** to address the areas of improvement identified by the SNPA assessment

Rural Communities

- **Vary in availability and accessibility of affordable resources** to make easy weight-healthy behaviors for all children and families
- **Vary in stages and dimensions of readiness** to take action to improve obesogenic context identified by HEAL MAPPS™ assessment



Grow HKC Research Team

- Principal Researchers
 - Deborah John, PhD
 - Kathy Gunter, PhD
- Co-Researchers
 - Melinda Manore, PhD, RD
 - Gail Langellotto, PhD
 - Lena Etuk, MS
- Research Assistants
 - Patrick Abi Nader, Alinna Ghavami, John Hicks, Jenny Jackson, Brendan Klein
- County Extension Educators/Research Staff
 - Beret Halverson, Jenny Rudolph, Patty Case, Erin Devlin, Liana Harden, Laurie Wayne



<http://extension.oregonstate.edu/growhkc/about>

Rural options generated to date...

OR Farm to School - School District \$20,400

**Community on the Move Fitness Trail – Elementary School, HEAL
Community Grant \$8,000**

Playworks - School District Internal Funds \$4000

**Community on the Move Fitness/Garden Trail Stations – General
Mills Champion Grant \$10,000**

YA4-H Producing for the Future – School District \$5000

OR Farm to School – School District \$70,305

Playworks – Elementary School - Kaiser Permanente \$2500

Bear Creek Byway - Ford Family Foundation Community Leadership Group \$5000

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

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

Community Garden Camp - \$500

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

School District Wellness Policy – School Gardens

For more information...

OSU Oregon State UNIVERSITY

Outreach & Engagement | OSU Extension | Donate

Search ...

OSU Extension Service
GROW Healthy Kids and Communities

Home About Tools In Your Community In the News Trainings Resources Contact

Home » About

GROW Healthy Kids & Communities

Many risk factors have been associated with children being overweight or obese, including rural residency. Attributes of the rural environment make it difficult for children to access and eat healthy foods, walk or bike to destinations and participate in physical activity and recreational sport programs.

Furthermore, features of rural schools, particularly those in under-resourced communities, are such that students often face long bus commutes, minimal/no provision of health and physical education by certified teachers, and few resources to support health and/or enrich the academic environment. Rural community features pose unique challenges for rural residents that differ from those faced by individuals residing in more metropolitan regions. Nevertheless most evidence-based strategies to combat obesity have been developed and tested in non-rural settings.

Project Environments

- Family
 - Assessment
 - Intervention
 - Maintenance/Motivation
- School
 - Assessment
 - Intervention
 - Maintenance/Motivation
- Community
 - Assessment
 - Intervention
 - Maintenance/Motivation

Funded by USDA NIFA, Grant Number 2011-68001-90030

Generating Rural Options for Weight (GROW) Healthy Kids and Communities is a 5-year, multi-level research project that seeks to inspire children, families, schools, and communities to create opportunities to eat healthfully and be

<http://extension.oregonstate.edu/growhkc/about>