

# CDC PUBLIC HEALTH GRAND ROUNDS

## “Preventing Childhood Obesity – Eating Better, Moving More”



Accessible version: <https://www.youtube.com/watch?v=bZB4cxBpl8o>

**August 21, 2018**



**U.S. Department of  
Health and Human Services**  
Centers for Disease  
Control and Prevention

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- After creating a TCEO account, click the “Search Courses” tab on the left and use “Public Health Grand Rounds” as a keyword search.
- All PHGR sessions eligible for CE should display, select the link for today’s session and then Continue button. Course Access Code is **PHGR10**.
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# Healthy Places for Healthy Children: The Importance of the Early Care and Education Setting



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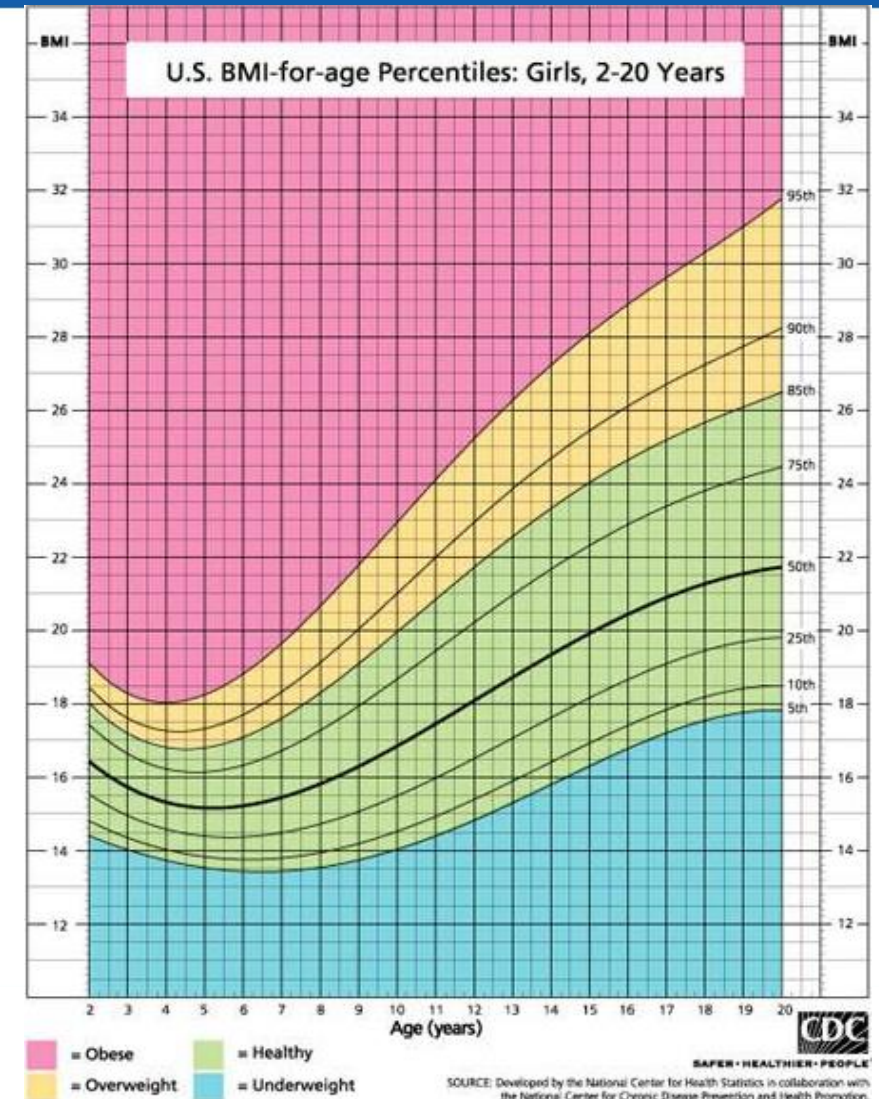
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Control and Prevention

# How Does Public Health Define Childhood Obesity?

- **Body Mass Index (BMI):**  $\text{weight}/\text{height}^2$
- **Inexpensive screening measure of weight status**
- **Not a diagnostic measure**
- **Age-specific BMI plotted against a sex-specific reference standard**
- **Percentile determined**



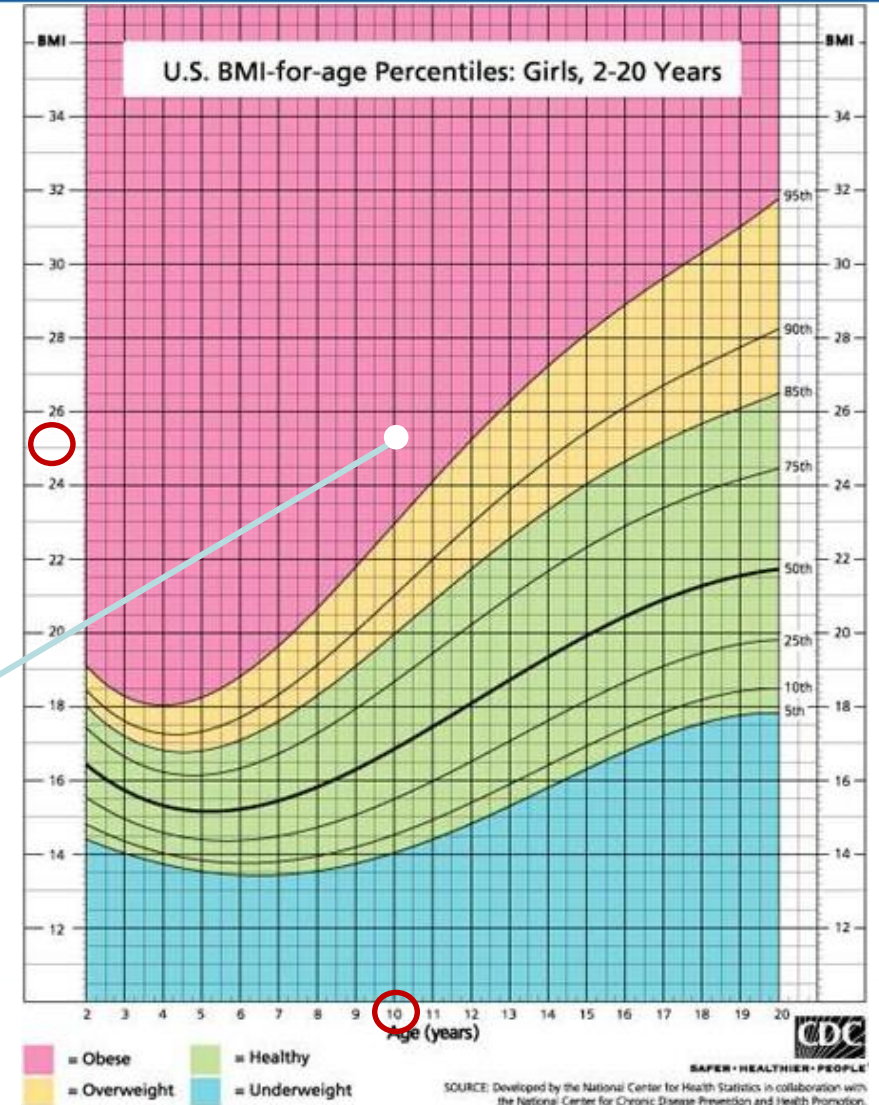
# How Does Public Health Define Childhood Obesity?

## ➤ CDC Growth Chart (Percentiles)

- Obesity:  $\geq 95^{\text{th}}$  percentile
- Overweight:  $85^{\text{th}}$  to  $< 95^{\text{th}}$  percentile
- Healthy weight:  $5^{\text{th}}$  to  $< 85^{\text{th}}$  percentile
- Underweight:  $< 5^{\text{th}}$  percentile

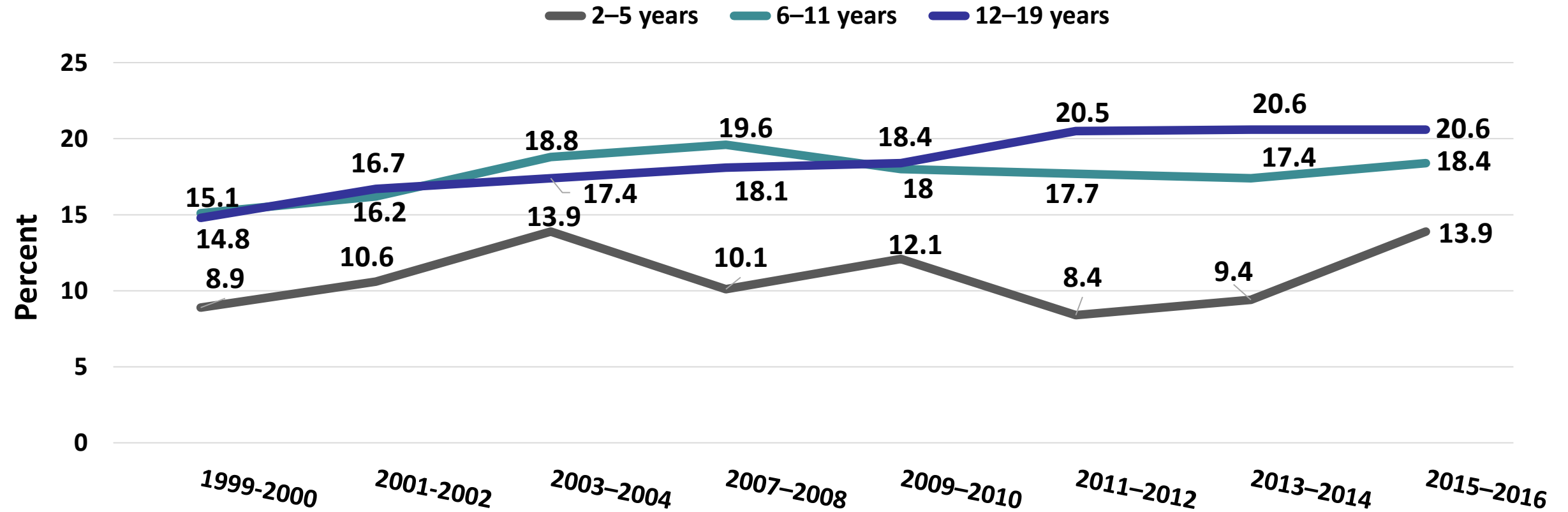
### Example:

A 10-year-old girl who is 4 feet 5 inches tall and weighs 100 lbs has a BMI of 25.0  
This is the 97<sup>th</sup> percentile, indicating that she has obesity



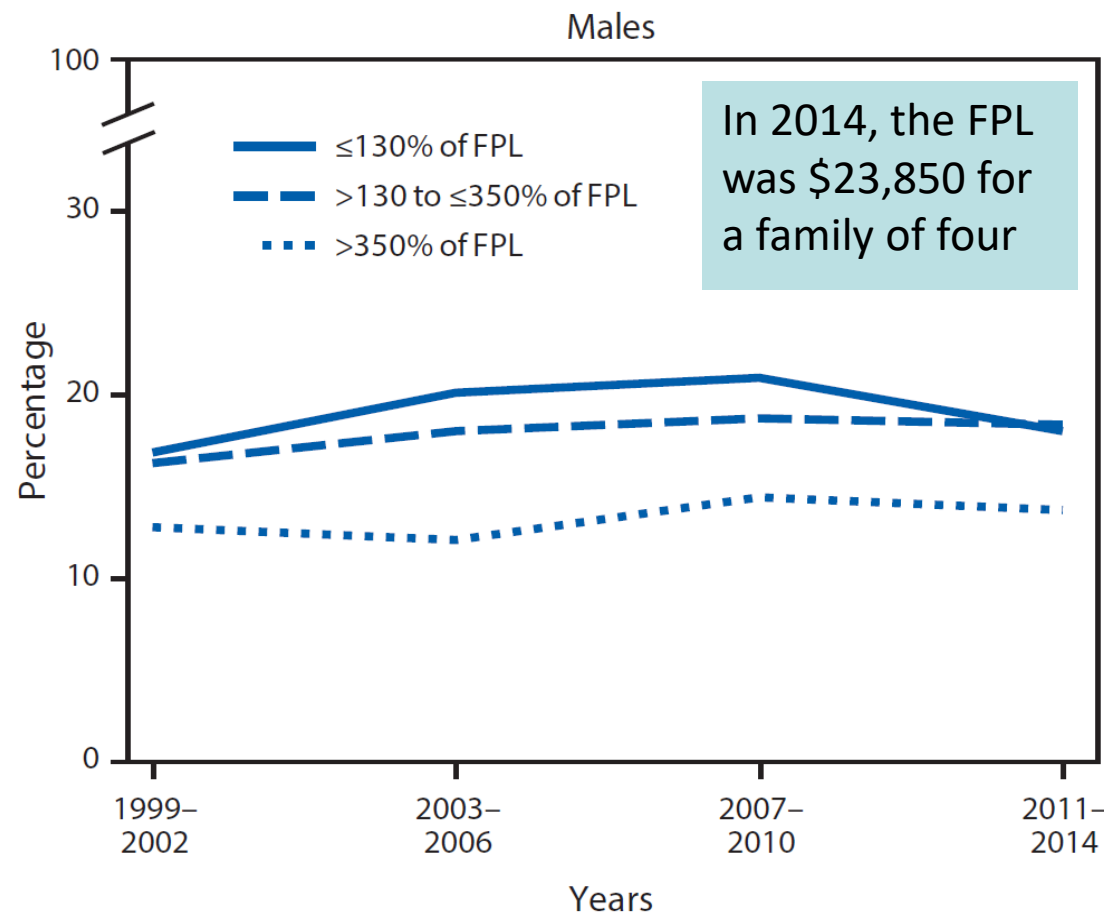
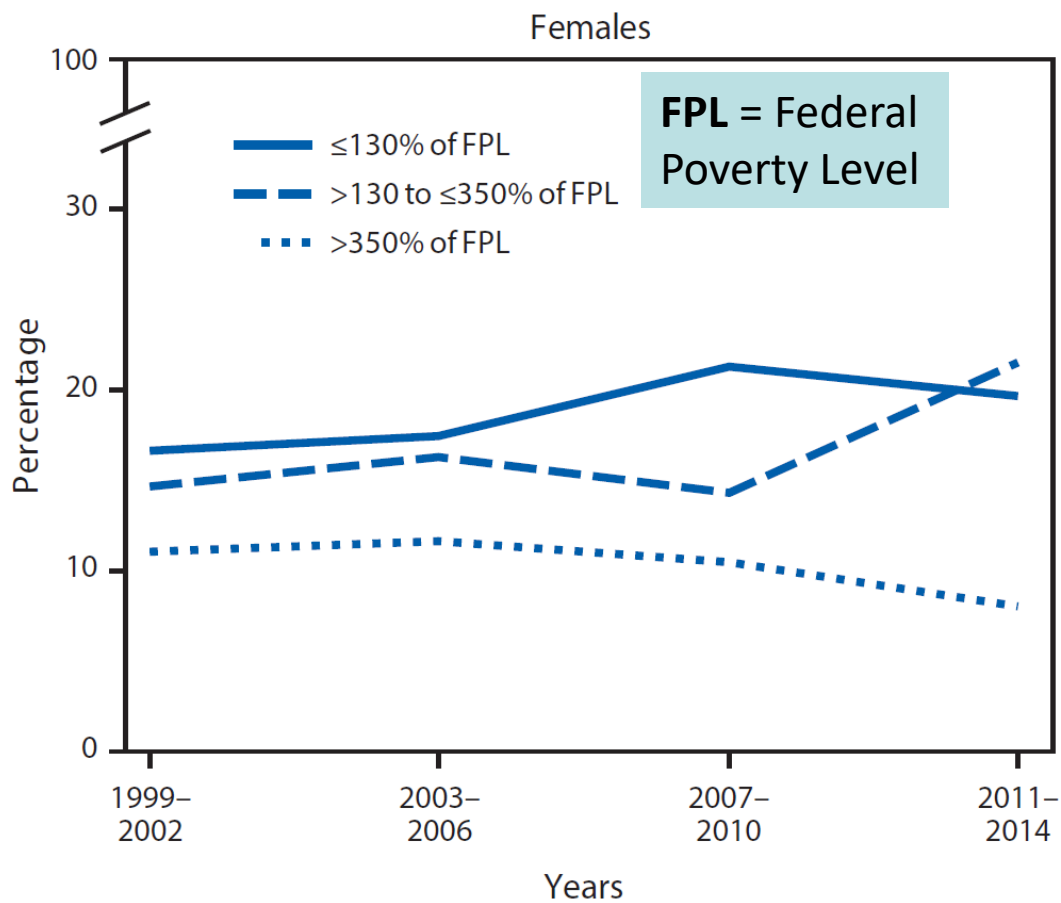
# Childhood Obesity is High Among All Age Groups

## Prevalence of Obesity in U.S. Youth 2–19 Years, 1999–2000 through 2015–2016



# Disparities Exist in Childhood Obesity

Trends in Obesity Prevalence among Youth aged 2–19 years, by Household Income—National Health and Nutrition Examination Survey, United States, 1999–2002 through 2011–2014





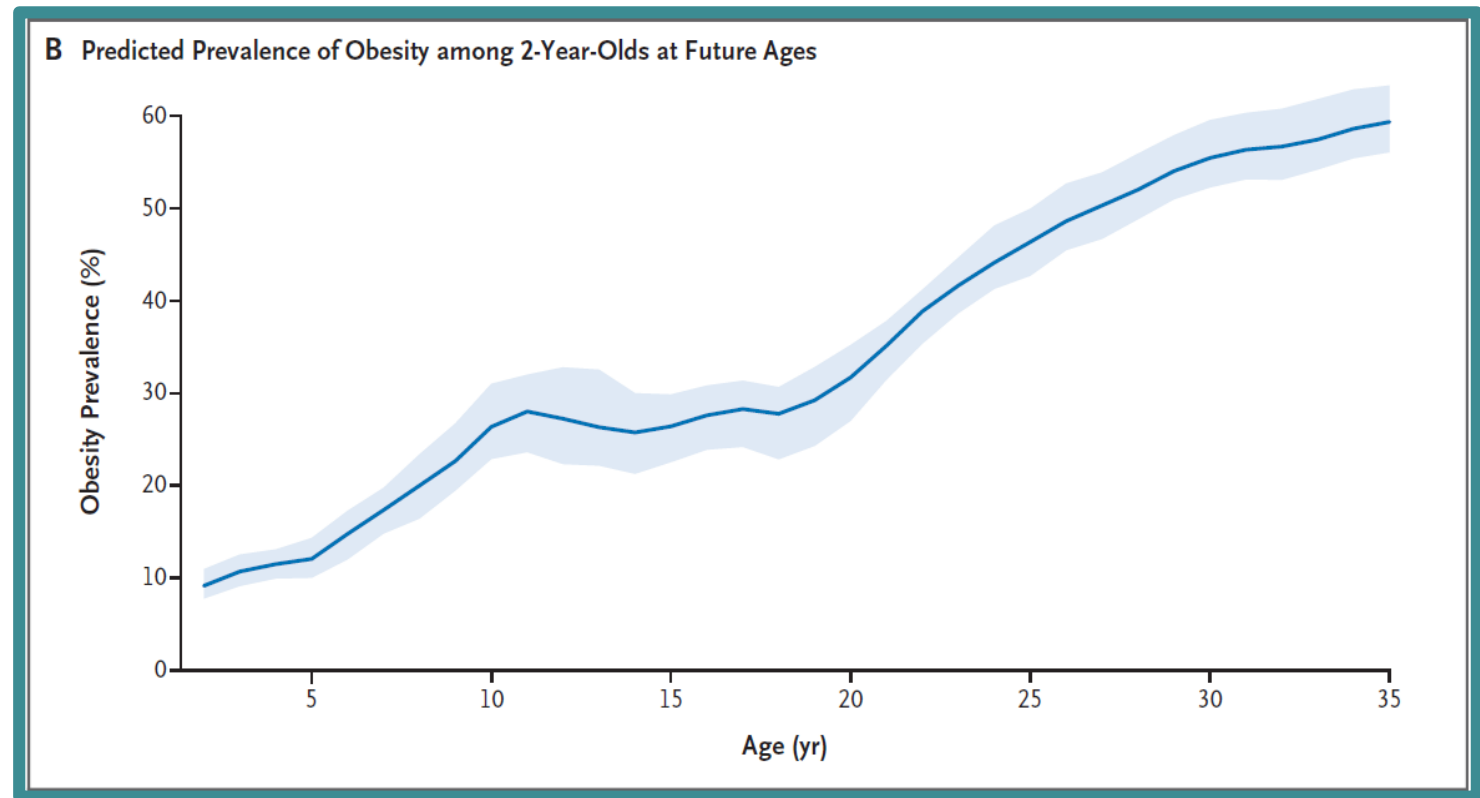
# Kids Don't Grow Out of It: Childhood Obesity Tracks into Adolescence → Adulthood

Compared to children with healthy weight, kids who are overweight in kindergarten are **4 times more likely** to have obesity by 8<sup>th</sup> grade



# Without Intervention, Over Half of Today's Children Will Have Obesity as Young Adults

- **A recent modeling study using BMI trajectories for youth shows that, by 2050, the majority of today's children, 57.3% will have obesity by age 35 if our society doesn't take immediate actions**



# Excess Adipose Tissue Causes Harmful Changes in Body Function

- Adipose cells (body fat) are **metabolically active**
- **Amount, distribution, and secretory function** of adiposity determine its impact on body functions
- Prolonged, excess adiposity causes **vascular inflammation and accumulation of fat within muscles and organs**
- Excess weight also **impacts the body structurally**



Fat Cell

# Having Obesity During Childhood Increases Immediate and Future Health Risks

13 types of cancer



Adult obesity



Bullying, stigma

Lower self-reported quality of life



Lower self-esteem  
Anxiety, depression

High blood pressure  
High cholesterol  
Heart disease

Breathing problems

Impaired glucose tolerance  
Insulin resistance  
Type 2 diabetes

Musculoskeletal and joint problems

# Preventing Obesity Can Lead to Better Outcomes



**Improved school readiness**



**Higher academic achievement**



**Higher worker productivity**



**Lower risk for adult obesity and many chronic diseases**



**Better mental health**

# Preventive Factors for Obesity

## Protective Individual Factors

- ✓ Early feeding behaviors (Birth to 2 yrs)
  - Breastfeeding, later introduction of foods, feeding based on hunger
- ✓ Healthy diet choices
- ✓ Regular physical activity
- ✓ Limiting sedentary time
- ✓ Getting optimal sleep
- ✓ Managing stress

# Few Youth Eating Healthy Diets or Getting Enough Physical Activity



Fewer than 1 in 10 children eat the recommended daily amount of vegetables

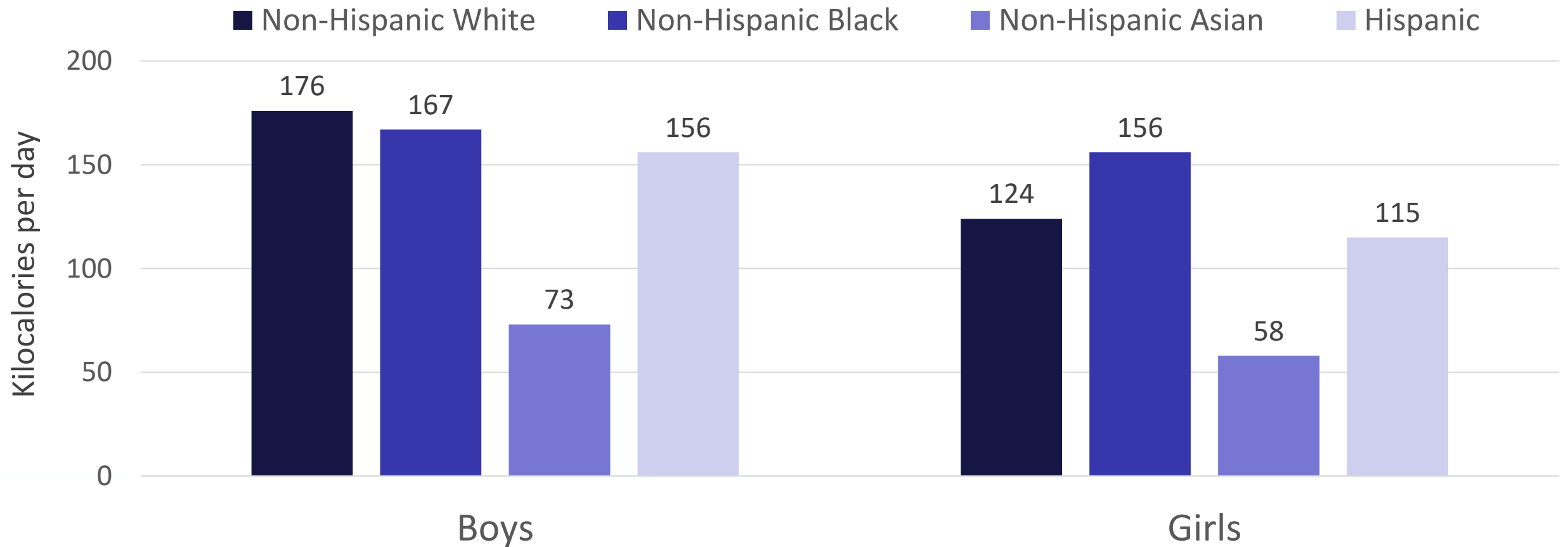


Less than 3 in 10 high school students get at least 60 min of physical activity daily



# Children Consume Empty Calories from Sugary Drinks

**Sugar-Sweetened Beverage Intake Among U.S. Youth (aged 2–19 years) by Race/Ethnicity, NHANES 2011–2014**





# Opportunities for Childhood Obesity Interventions at Several Levels

Individual Habits  
and Behaviors



Family and  
Parental Habits



Organizations  
(ECE, Schools, Healthcare)

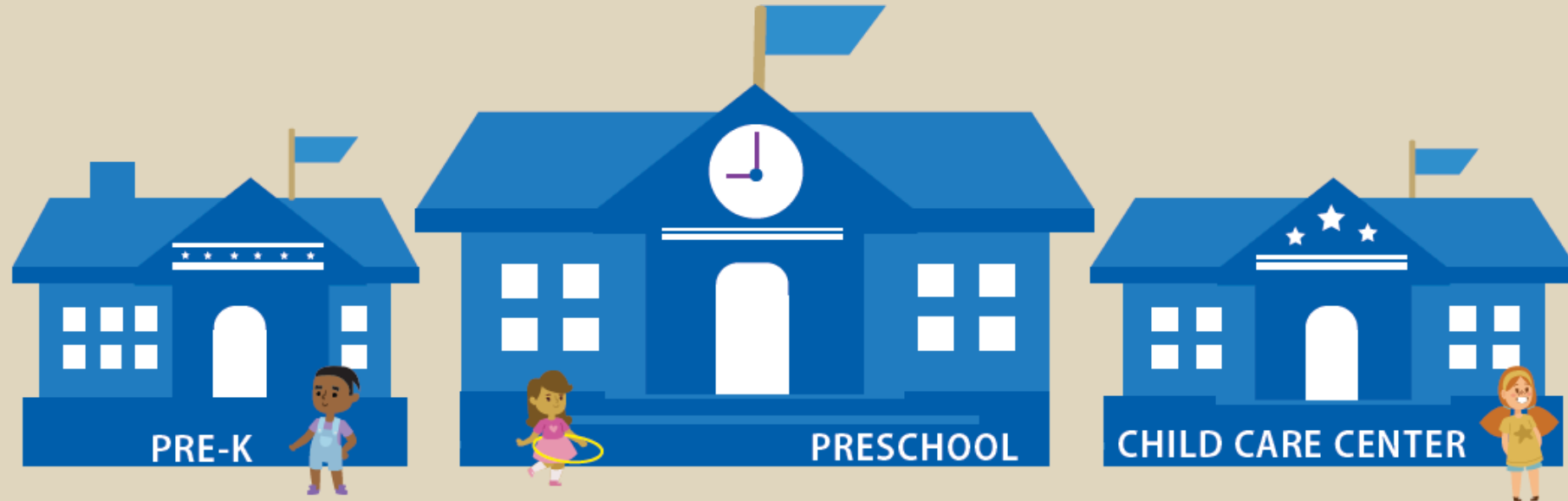


Community



ECE: Early Care and Education

# Early Care and Education (ECE): A Key Setting For Early Intervention Among Children Birth to Five



The ECE setting can **directly influence what children eat and drink and how active they are**, and build a foundation for healthy habits.

Over **60%** of 3-5 year olds are in child care weekly

At least **11 million** children under 6 spend **30 hours** a week on average in child care

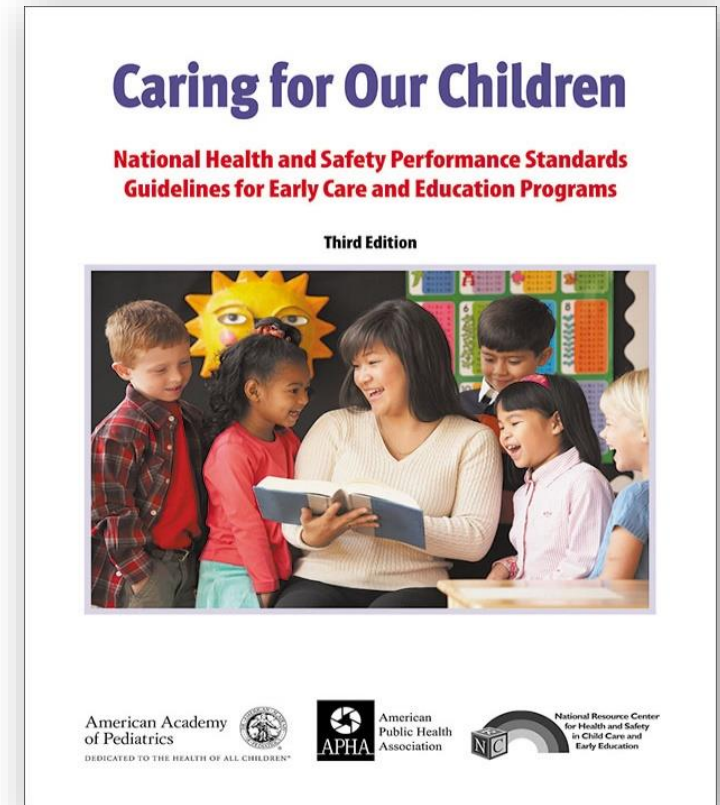
# Preventing Obesity Can Save Billions of Dollars

- **Obesity costs the United States healthcare system \$147 billion per year**
- **Research is emerging on cost-effective interventions for childhood obesity**
  - Nutrition and Physical Activity Self-Assessment for Child Care (NAP SACC)
    - ❑ 3.8 million children in child care facilities would have
      - Less screen time, more physical activity, consume fewer sugar-sweetened beverages, and...
    - ❑ Over 10 years, these efforts would result in decreases in BMI and a net healthcare cost savings of \$372 million



# National Early Care and Education Standards: Implemented through State, Local, Organizations

- **ECE stakeholders and care providers use this document as a guide to implement the national standards, which include:**
- Infant feeding (e.g., breastfeeding, early child nutrition)
  - Offering more nutritious meals, snacks, and beverages including water
  - Providing many opportunities for physical activity
  - Limiting screen and sedentary time



# How Does the CDC Support Obesity Prevention in ECE?

Partners  
Health Equity



**Public Health  
Surveillance**



**Training and  
Technical Assistance,  
Peer-to-Peer  
Networking**



**Translation Tools  
and Resources**



**Fund Partners, States,  
and Communities to  
Implement Best  
Practices**

# CDC Offers Several State and Local Resources for Obesity Prevention in ECE



## STATE OBESITY PREVENTION EFFORTS TARGETING THE EARLY CARE AND EDUCATION SETTING

Quick Start Action Guide (2.0)

April 2018



Childhood obesity is a major threat to the health of our nation, with nearly one in four 2-5 year olds overweight or with obesity. Acting early to address obesity is critical. If young children are overweight by the time they enter kindergarten, they are four times more likely to have obesity by 8th grade.\*

Most young children spend time in care outside the home, making the Early Care and Education (ECE) setting one of the best places to address childhood obesity. More than 60% of children aged 3-5 years are cared for in ECE programs, which include child care centers, family child care homes, Head Start and pre-kindergarten programs. ECE programs can directly influence what young children eat and drink, encourage physical activity, and promote healthy habits.



[www.cdc.gov/obesity/strategies/childcareece.html](http://www.cdc.gov/obesity/strategies/childcareece.html)

[www.cdc.gov/nccdphp/dnpao/resources/child-teen-resources.html](http://www.cdc.gov/nccdphp/dnpao/resources/child-teen-resources.html)

[www.cdc.gov/obesity/downloads/early-care-education-report](http://www.cdc.gov/obesity/downloads/early-care-education-report)

# Child Care Aware<sup>®</sup> of America: Improving Quality in Early Care and Education



**Krista Scott, LICSW**

*Senior Director, Child Care Health Policy*

Child Care Aware<sup>®</sup> of America



# The Importance of Obesity Prevention in Early Care and Education (ECE)

- **The ECE setting is one of the best places to reach young children with obesity prevention efforts**
- **Child care through ECE facilities is the norm in the US**
  - Child care centers
  - Day care homes
  - Head Start programs
  - Preschool and pre-kindergarten programs





# Increasing Quality Early Care and Education (ECE) for all Low-Income Children

## ➤ **Child Care Development Block Grant (CCDBG) Federal Legislation**

- Authorizes the **Child Care Development Fund (CCDF)**, which funds states to:
  - ❑ Increase access to child care for low-income families
  - ❑ Increase capacity for licensure and inspection of child care facilities
  - ❑ Ensure basic quality of child care
- Creates national minimum standards for 10 areas of health and safety
  - ❑ Infectious disease, sudden infant death syndrome, medication administration, allergies, physical premises safety, child abuse, emergency preparedness, hazardous materials, first-aid and CPR, and transporting children
  - ❑ Invites states to set requirements for nutrition, physical activity

## ➤ **However, many states struggle to meet requirements and need guidance and support**

# What Influences Ability of ECE Facilities to Implement Obesity Prevention Activities?



## Federal Programs

- Child Care Development Fund (CCDF) and state-level rules
- Child and Adult Care Food Program (CACFP)
- Head Start

## State Programs and Requirements

- State Licensing
- Administer federal food programs (CACFP)
- Early learning and development guidelines
- Quality rating and improvement plans (QRIS)

## Local Programs and Requirements

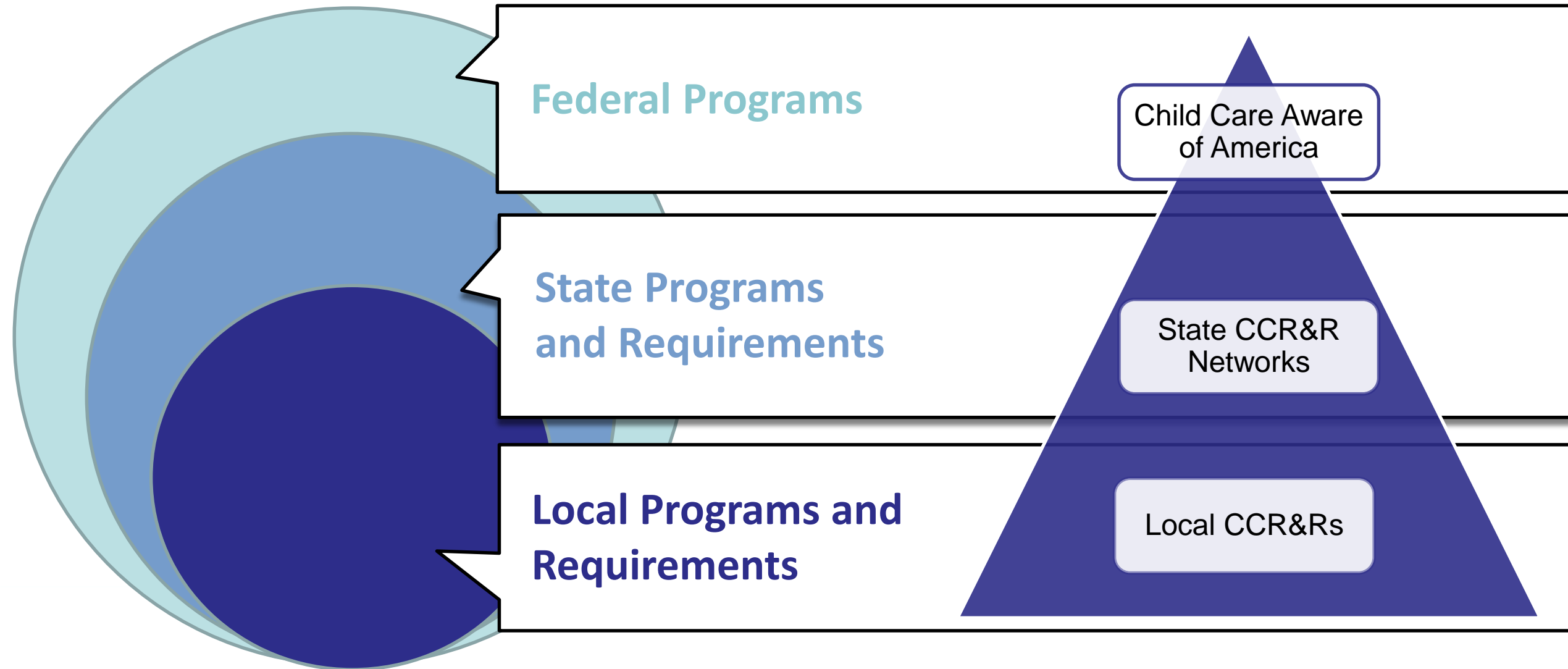
- Local public health, fire safety, and building codes\*
- Training opportunities

# Early Care and Education (ECE) Workforce Needs

- **Low pay can lead to inequities in health for teachers, providers, and staff**
  - Average hourly wage for child care providers
    - ▣ Birth to 3-year-olds: \$9.30
    - ▣ 3-to 5-year-olds: \$11.90
  - Many do not have education or training in nutrition or physical activity
- **Teachers need support for implementing best practices with children and in living healthy lives**



# Resources and Referrals: Supports at all Levels



# National Support: CCDBG Implementation

- **Supports states for CCDBG implementation around obesity prevention opportunities:**
  - Consumer education language for state websites
  - Sample language for state plans
- **Research and Governmental Affairs Teams**
  - Share data, inform on what is working, what is challenging for states, state capacity issues



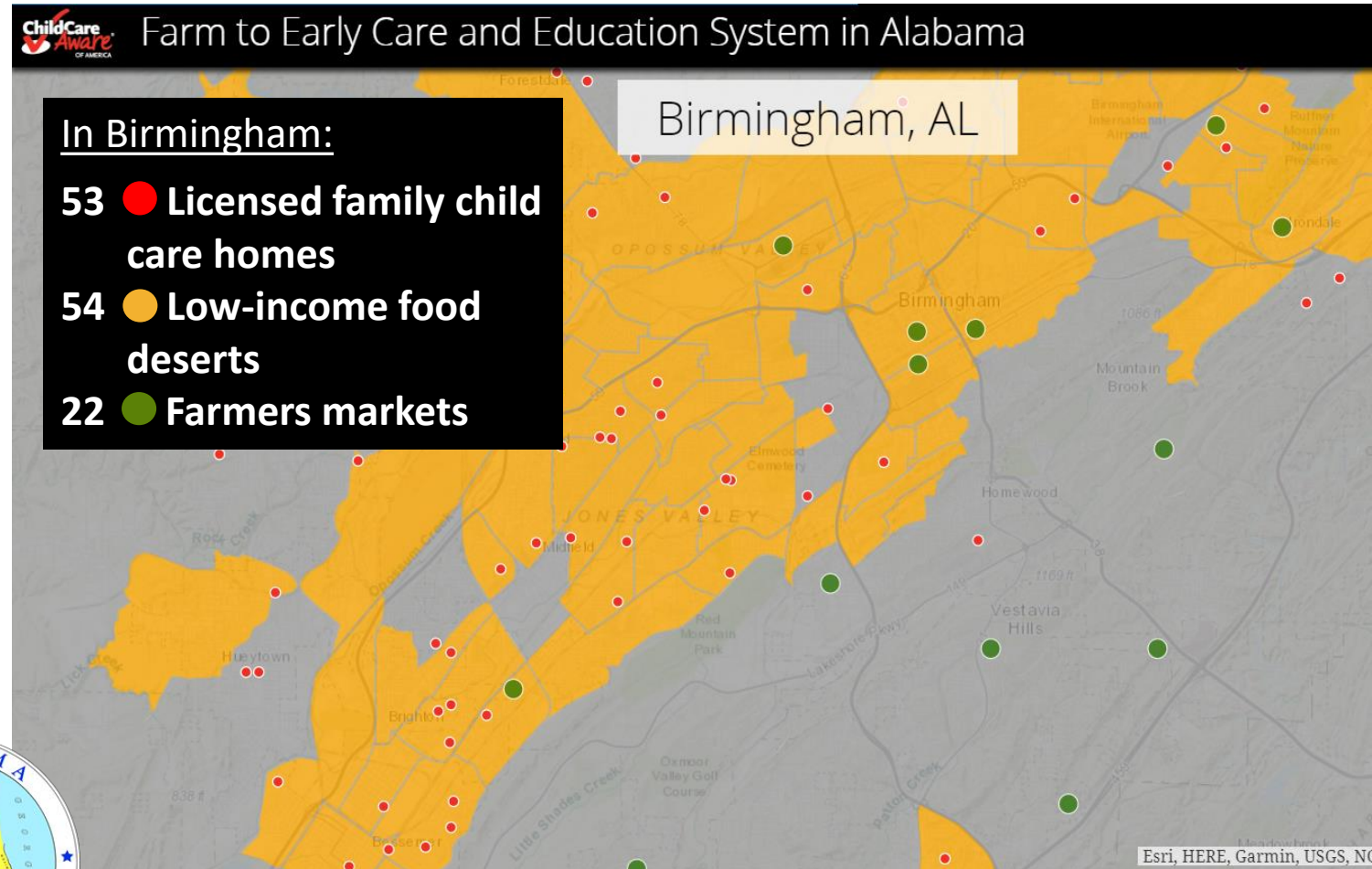
# State Support: Policy, Practice, and Collaborations

- **Voices for Healthy Kids partnership and campaign technical assistance**
- **Strategic communications: Kentucky**
  - Develop messages for stakeholders (parents, healthcare, ECE) to expand 5-2-1-0 program (5 fruits and vegetables, no more than 2 hours of screen time, 1 hour of physical activity, and zero sugar-sweetened beverages daily)
- **Research and evidence: Build program evaluation of San Diego YMCA's Wellness Champion Recognition program**
  - Anecdotal evidence of practice change
  - Project: collect data on continued positive health practices in programs (past initial review), impact on home and family behaviors

# Local Support: Data Visualization, Strategic Planning, and Research

## ➤ Alabama: Partners for Food Access

- Can child care providers buy fresh food in their communities?
- Are there farmers markets where there are more family child care providers?
- Could farmers markets provide access to child care providers?



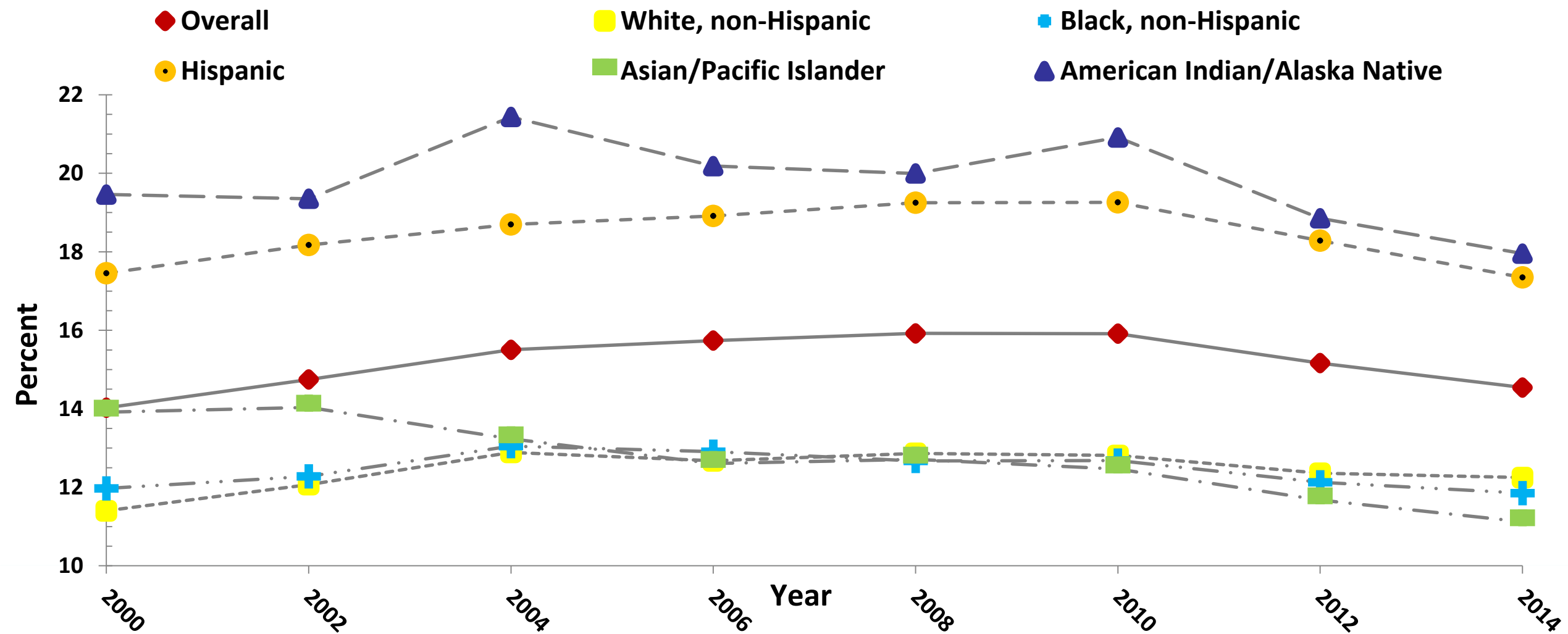
# Local Support: Data Visualization, Strategic Planning, and Research

- **Alabama Partnership for Children**
- **Alabama Farm-to-ECE Coalition**
  - Alabama Department of Agriculture & Industries
  - Rev Birmingham (economic development)
  - Food Banks (Northern and Central AL)
  - Regional child care resource and referral agencies (CCR&Rs)
- **Strategic planning support**
- **Needs assessment**
- **Focus groups with stakeholders**





# Prevalence of Obesity Among WIC Participants Ages 2–4 Years Old has Decreased Since 2010



# Possible Factors in Improvements in Early Childhood Obesity

- **Update of federal nutrition programs**
- **Investments in state and local communities**
- **Promotion of access to healthy foods and physical activity**
- **In the past decade, tremendous momentum by national and state stakeholders in supporting ECE in early childhood obesity prevention**

# Online Products Highlighting Good Practice

## Provider Spotlight Videos



## Recognition Program Map



**CHILD CARE RECOGNITION PROGRAMS**

A recognition program identifies and acknowledges communities/facilities that meet voluntary best practice standards.

**IN CHILD CARE, RECOGNITION PROGRAMS OFTEN FOCUS ON:**

- BREASTFEEDING
- HEALTHY EATING
- PHYSICAL ACTIVITY

**RECOGNITION PROGRAMS**

**HEALTHY EATING & PHYSICAL ACTIVITY**

A photograph of children playing in a playground. One child in a purple shirt is in the foreground, and others are visible in the background near a wooden play structure.

[usa.childcareaware.org/providersnapshots](https://www.usa.childcareaware.org/providersnapshots)

[usa.childcareaware.org/health-wellness-recognition-program/](https://www.usa.childcareaware.org/health-wellness-recognition-program/)

# Conclusions

- **ECE providers influence health and nutrition practices for millions of children under their care**
- **Providers face economic and educational barriers as they seek to implement best practices that can help prevent obesity**
- **Our organization and others provide effective training and technical assistance to sites across the nation**
- **Collaboration and connections among public health, resources, and referral agencies can yield practice and policy change that improve children's lives**

# Strengthening Schools as the Heart of Health



**Sarah Sliwa, PhD**

*Health Scientist, Division of Population Health*

National Center for Chronic Disease Prevention and Health Promotion

Centers for Disease Control and Prevention

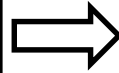
# Schools Are a Critical Setting for Prevention



# Nutrition and Physical Activity Enhance Learning

**Students that are:**

**Physically active**



**Eating breakfast  
and  
healthy foods**



- **Have improved test scores**
- **Have higher grades**
- **Have increased school attendance**
- **Have improved classroom behavior**

# The Whole School, Whole Community, Whole Child Framework

## ➤ Short term

- Healthy students learn better

## ➤ Long term

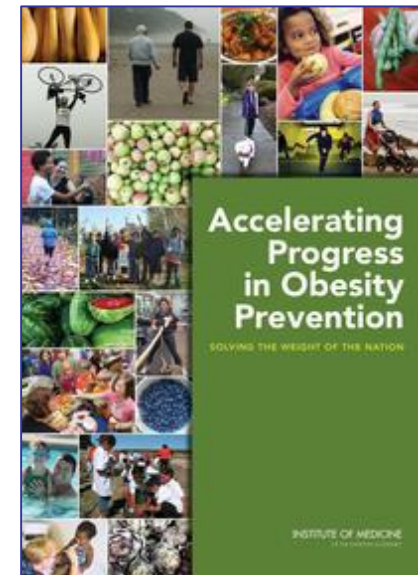
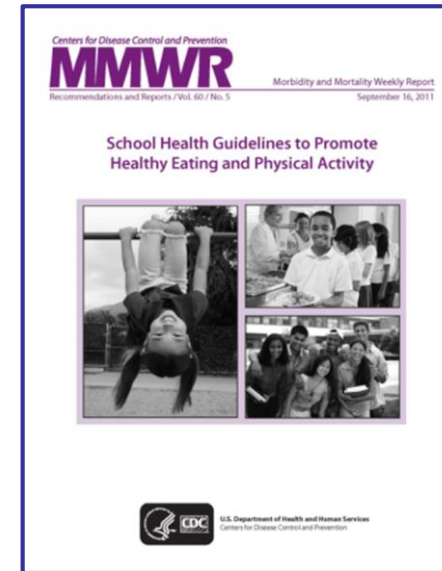
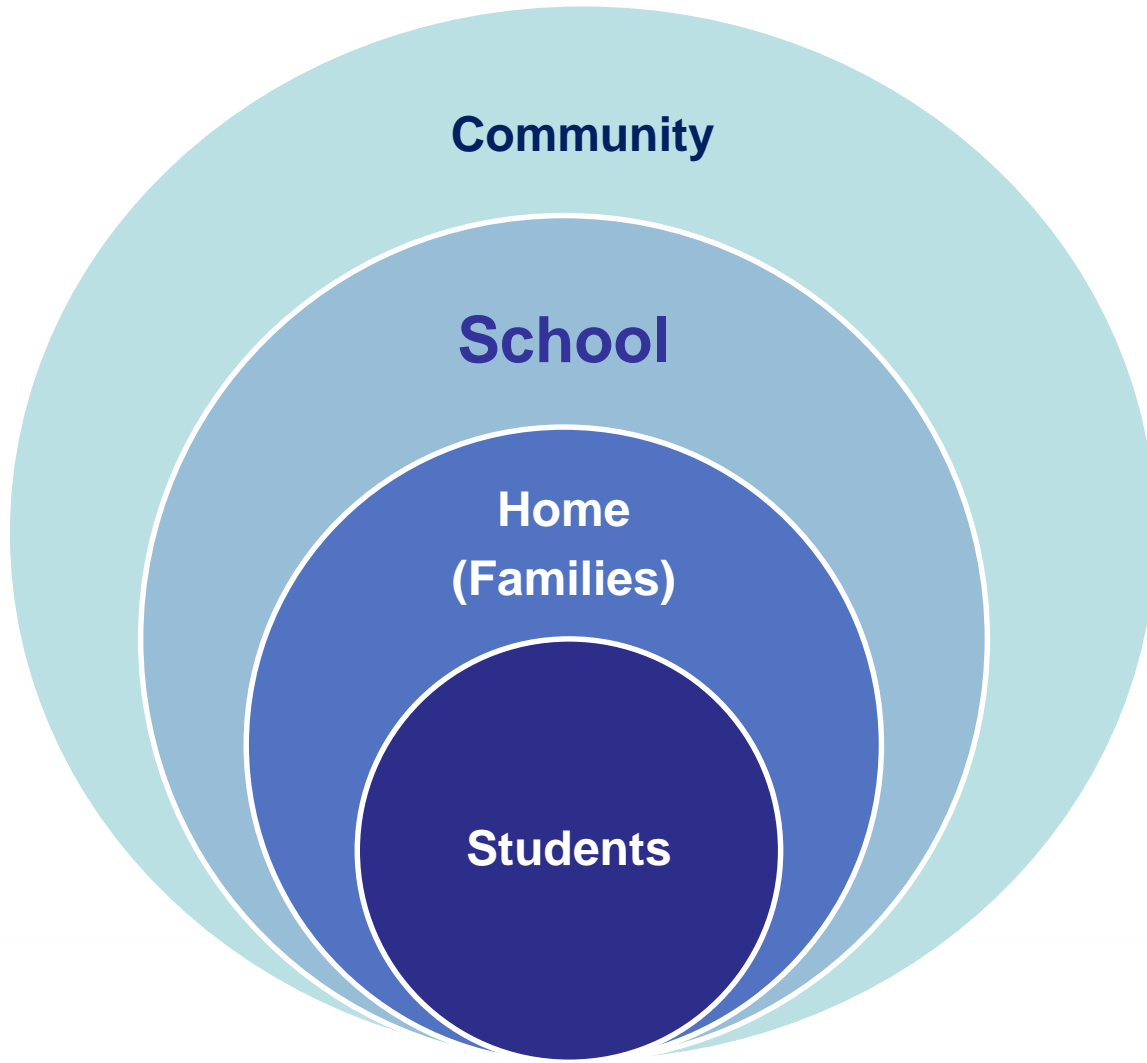
- Health behaviors and educational attainment are linked with lower risk of obesity and chronic disease





# What Does the Evidence Say About Obesity Prevention?

## Addressing Multiple Levels is More Effective



# CDC's School Health Guidelines Present a Universal Approach

## ➤ School Health Guidelines (2011)

- Research synthesis
- 9 guidelines plus strategies
- Policy, systems, environmental approach
- Audience: researchers, program developers, and health professionals

Centers for Disease Control and Prevention  
**MMWR**  
Morbidity and Mortality Weekly Report  
Recommendations and Reports / Vol. 60 / No. 5  
September 16, 2011

### School Health Guidelines to Promote Healthy Eating and Physical Activity



U.S. Department of Health and Human Services  
Centers for Disease Control and Prevention

# What Do the School Health Guidelines Say?

- **Address nutrition and physical activity in ways that involve the whole school and broader community**
- **Focus messaging on health behaviors, not on obesity**
- **Do not emphasize physical appearance or stigmatize obesity**
- **In schools that choose to measure students' BMI, adopt CDC recommended safeguards**



# Examples of School Policy, Environmental, and Systems Changes



**Policy**



**Environment**



**Systems**

# Knowledge Gaps: What Co-benefits Arise From a Comprehensive Approach?

- **Co-benefits may help with buy-in**
  - Social and emotional learning?
  - School connectedness?



# Knowledge Gaps: What are Possible Unintended Consequences?

## ➤ Unintended consequences

- Body dissatisfaction, disordered eating?
- Weight-stigmatization?
- Overexertion?



# Knowledge Gaps: What Works in High Schools?

- **Sparse evidence**
- **Important to address**
  - Increasing obesity prevalence
  - Less protective policies
  - Competing interests



Photo courtesy of the USDA

# Knowledge Gaps: How “Sticky” and Sustainable are These Interventions?

**What does it take?**

Training?  
Leadership?  
Materials?



**What happens next?**

For students?  
For activities  
and programs?

Photos (left and top right) courtesy of United States Department of Agriculture



# The Health and Academics Connection



**Mikki Duran**

*Program Leader, Health and Human Performance*

Appleton Areas School District, Wisconsin

# Public Health and Education Have Different Goals

Public Health	WI School Report Card
Childhood obesity	Student achievement
Chronic conditions	Academic growth
Local school wellness policy	Closing gaps
Health outcomes	On track and post-secondary success

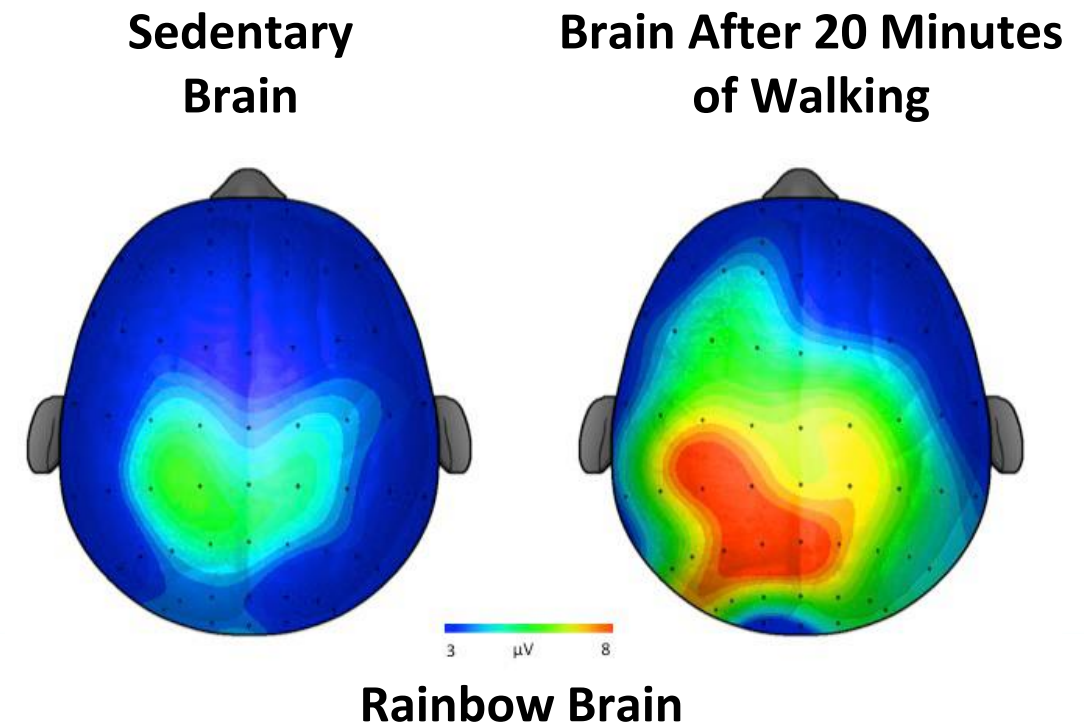
# Competing Priorities

- **Schools have the same challenges fitting in healthy opportunities as most Americans**
- **Specific connections need to be made to gain buy-in**



# Connecting Health Behaviors and Academic Achievement

- **The rainbow brain translates into an active fit brain**
- **This model creates context for the active classroom**
  - Skills based curriculum emphasizes developing functional health
- **Active classrooms are a direct link to positive academic outcomes and reduced disruptive behaviors in class at all levels**
  - Students are more on task and focused
  - Increased memory
  - Reduced disruptive behaviors



# Gathering Local Data to Improve Health and Learning

- **How active are students during the school day?**
- **Measure student sedentary behavior**
- **Use strategies to improve the amount of activity students get throughout the day**



# Primary and Secondary Schools: Different Needs and Solutions for Physical Activity

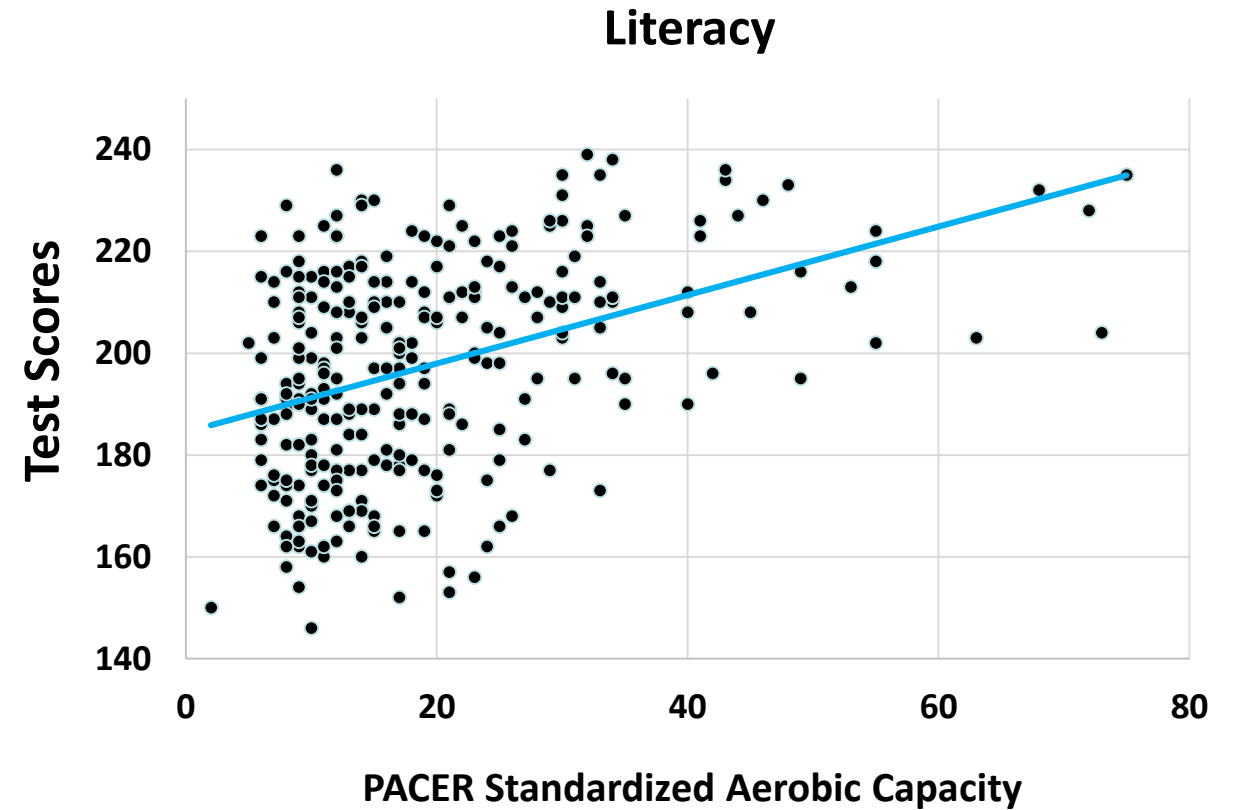
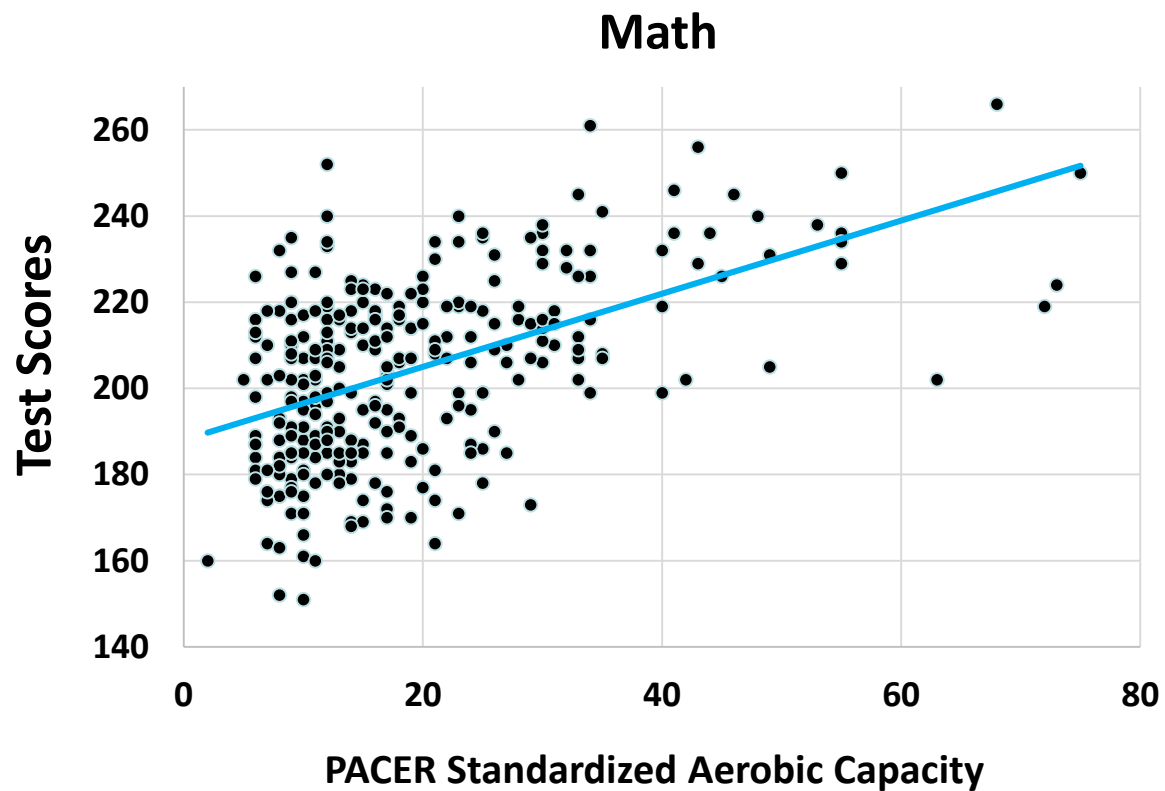
Minutes Spent in Physical Activities by School Level, Appleton School District

School Level	Active Physical Education	Active Classrooms	Active Recess and Open Gym	Before and After School (survey response)	Family and Community Activity (survey response)
Elementary	7	7	20	10	10
Middle School	14	-	10	16	10
High School	21	-	0	22	10

# “Fit in 15” Adds 30 Minutes to Physical Activity Time

- **Wisconsin elementary students are required to have 90 minutes of physical education per week**
  - 60 minutes by a licensed physical education teacher
  - 30 minutes that can be done by a classroom teacher
- **Appleton split their 30-minute time into two 15-minute segments**
  - Classroom teachers provide activities that get all students vigorously active
  - Not all of our teachers make their Fit in 15 time a priority because of the pressure for academic scores, or they do not realize the importance

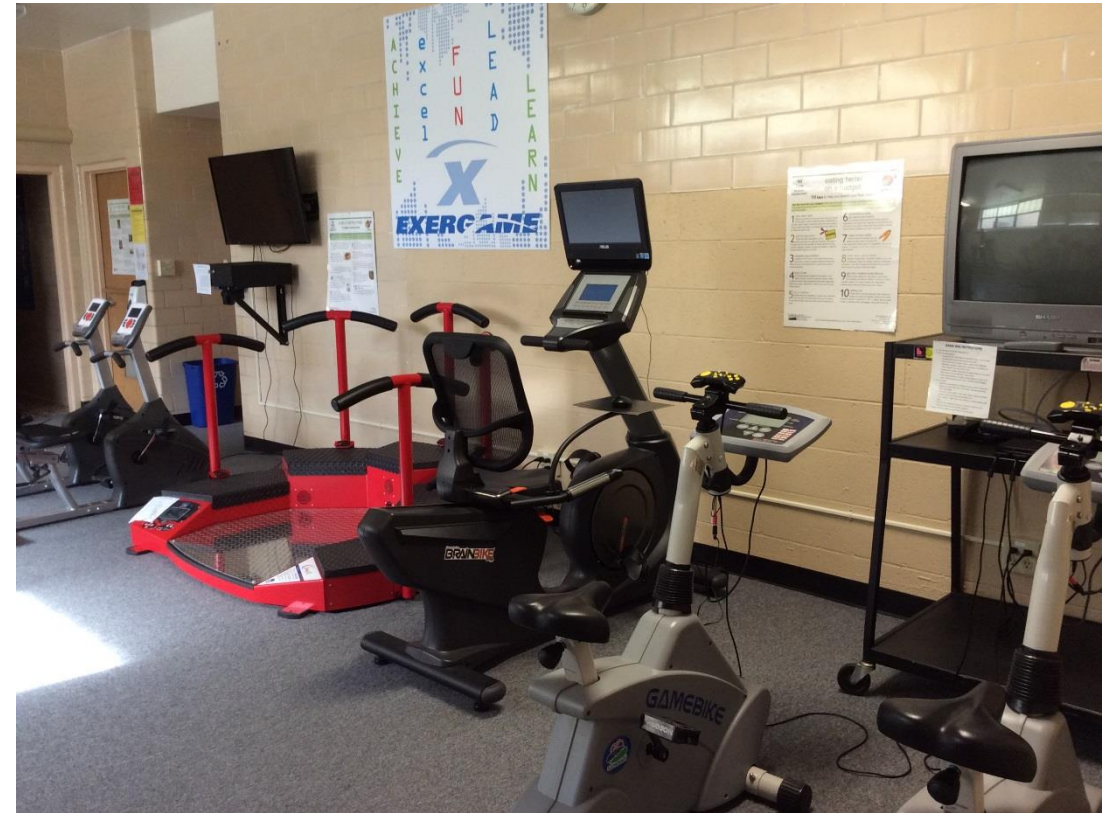
# Fit Students Perform Better Academically



PACER: Standardized aerobic capacity test  
Jefferson Elementary Data 2016-17, unpublished



# Use of Wellness Rooms Reduces Negative Student Behavior Issues



Edison Wellness Room Appleton Wisconsin

# Opportunities Before and After School



Before school intramurals at Horizons Elementary Appleton. Lillian Mongeau/The Hechinger Report

# Families Connect to Local Schools

## Appleton's Tough Kid Challenge



## Family Dinner Night



# School Wellness Policies

- **Valuable tool to inform and guide change**
- **Requiring an audit will make a difference in compliance**
- **Appleton School District**
  - Uses CDC's School Health Index for assessment
  - Awarded recognition from the state



# Whole School, Whole Community, Whole Child (WSCC): the Educator's Perspective on the Model



# Schools Champions Make a Big Difference



# CDC PUBLIC HEALTH GRAND ROUNDS

## “Preventing Childhood Obesity – Eating Better, Moving More”



**August 21, 2018**



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