

Comprehensive Approach to Pediatric Obesity at CAMC

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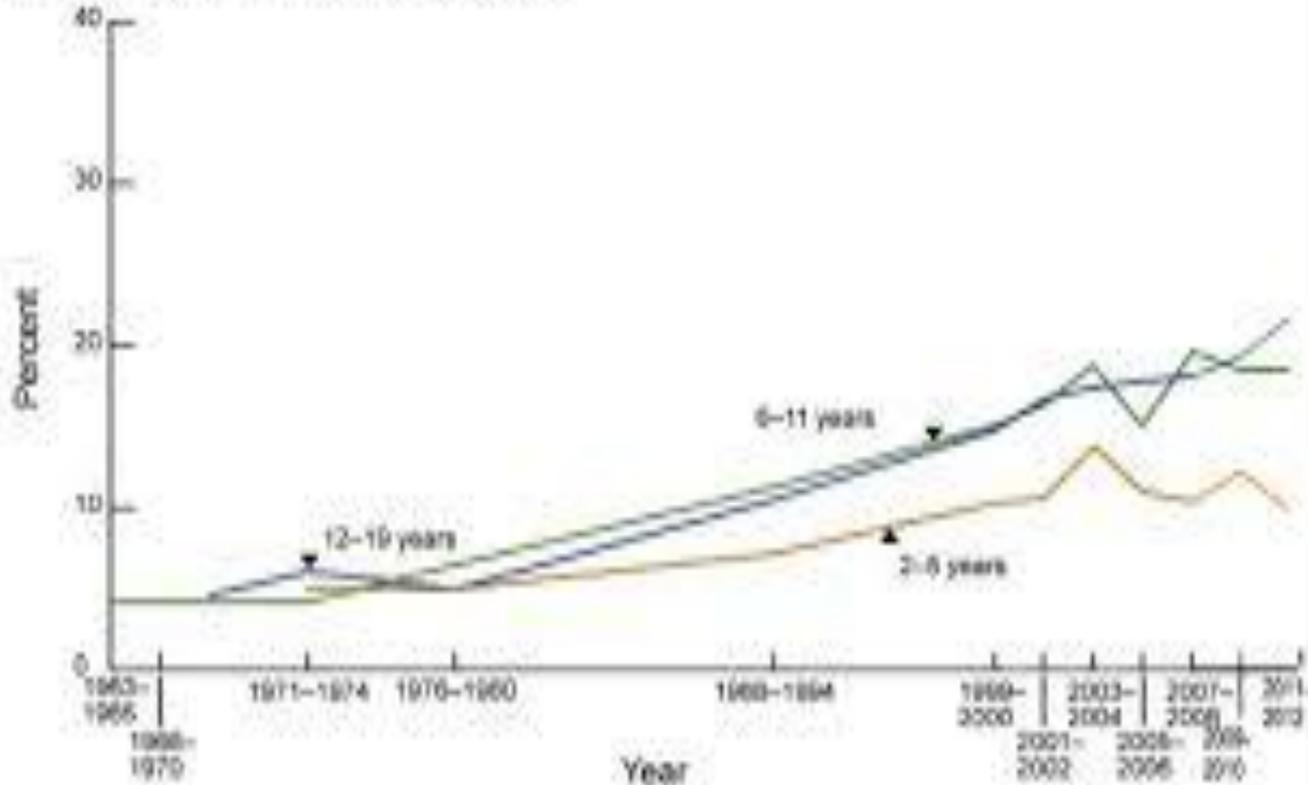
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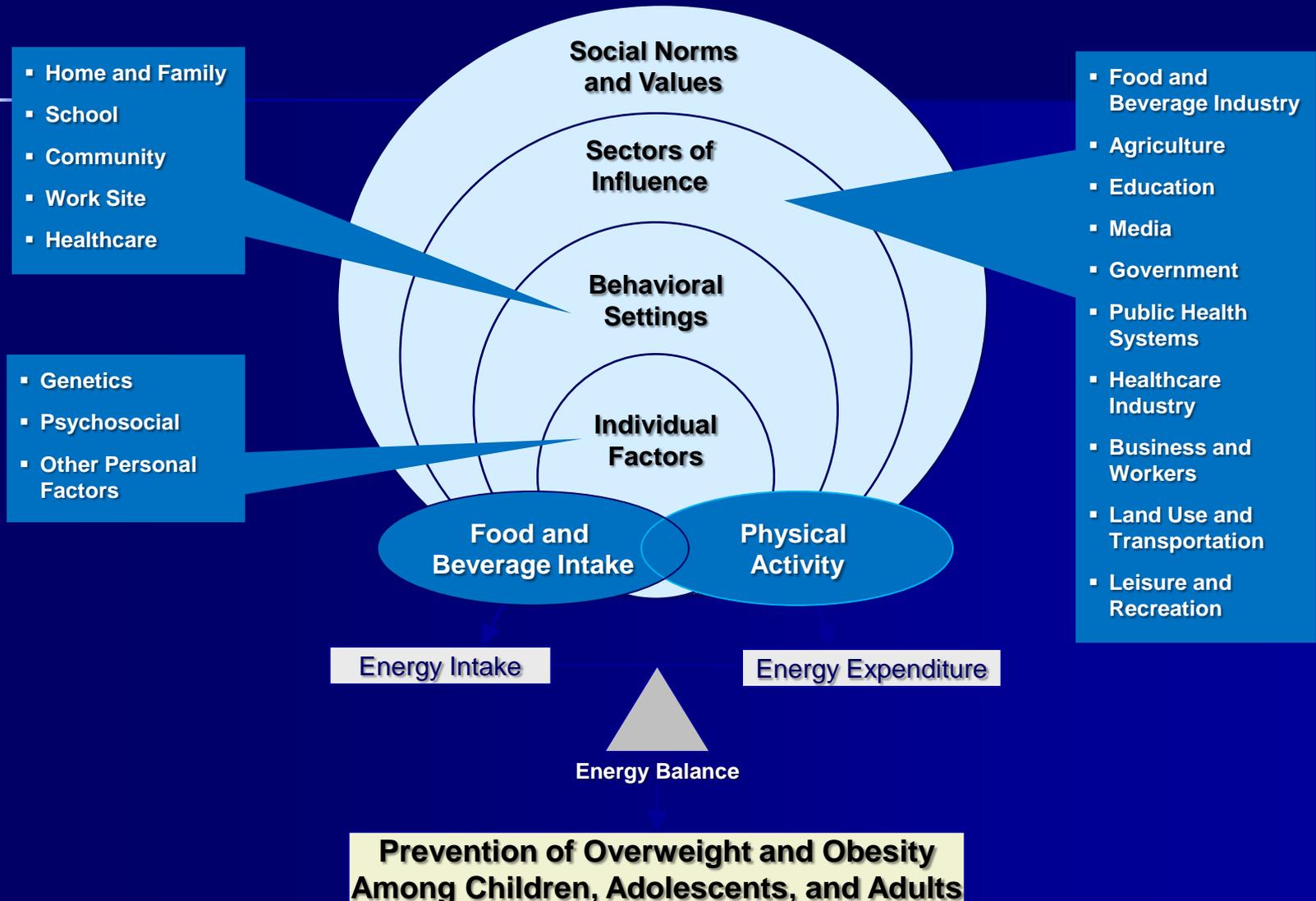
Clinical Associate Professor Pediatrics, WVU

NHANES 1963-2012

Figure 1. Trends in obesity among children and adolescents: United States, 1963-2012 (NHANES)



Socio-Ecologic Model for Preventing Obesity



Our Approach at CAMC

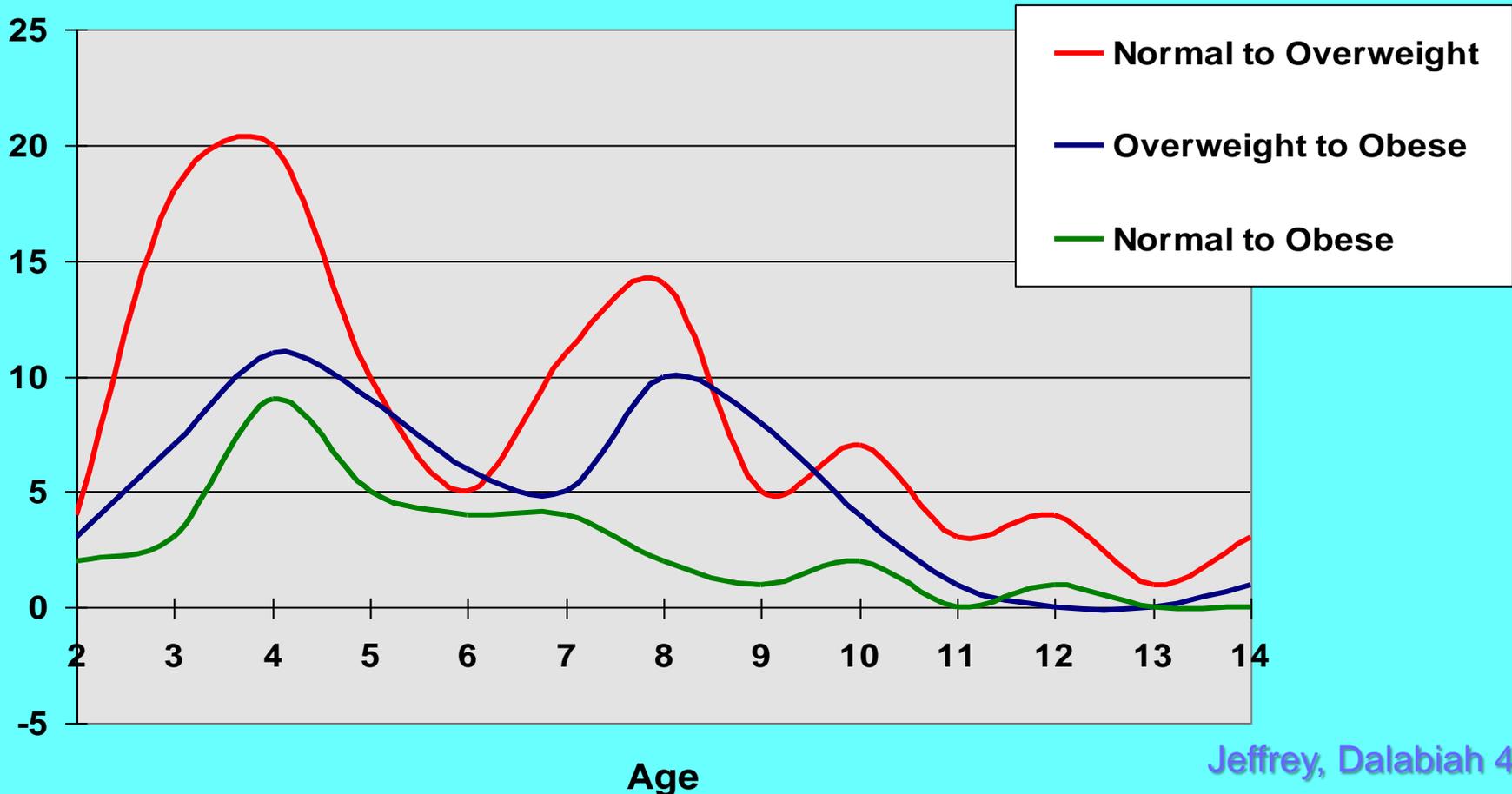
- Primary Prevention
 - CMC 2008 and 2013 Research Study
- Multi-Disciplinary Treatment
 - HealthyKids Pediatric Weight Management Program
- Community Advocacy
 - KEYS 4 HealthyKids

Background-2008 Study

- A retrospective study done in a pediatric teaching clinic in 2008 revealed the following:
 - Overall prevalence of overweight and obesity was 44%
 - The peak prevalence was 50% at age 7
 - Age of onset showed a bimodal peak at age 3-4 and age 8. ⁶

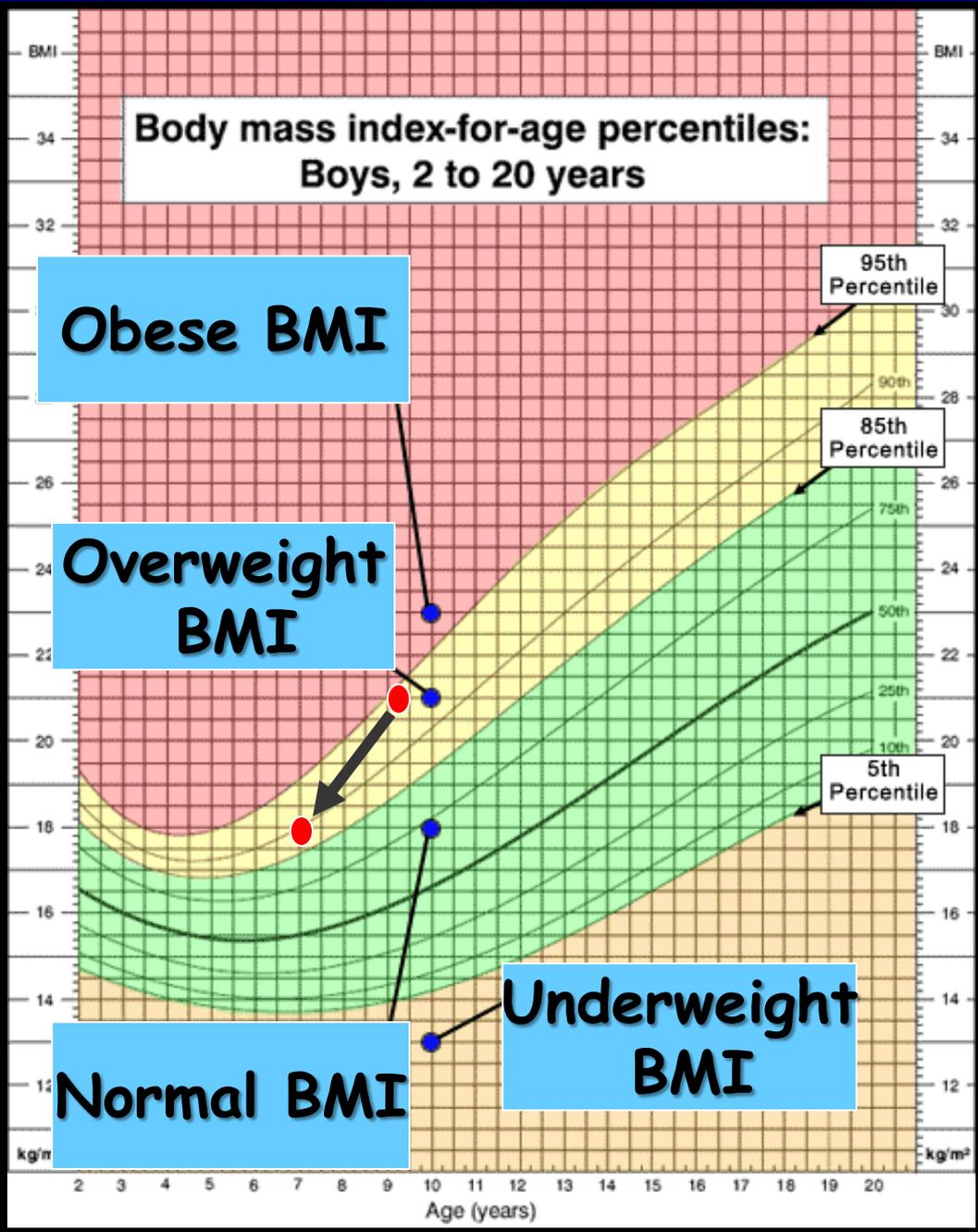
Age of Onset of Pediatric Overweight and Obesity in CMC

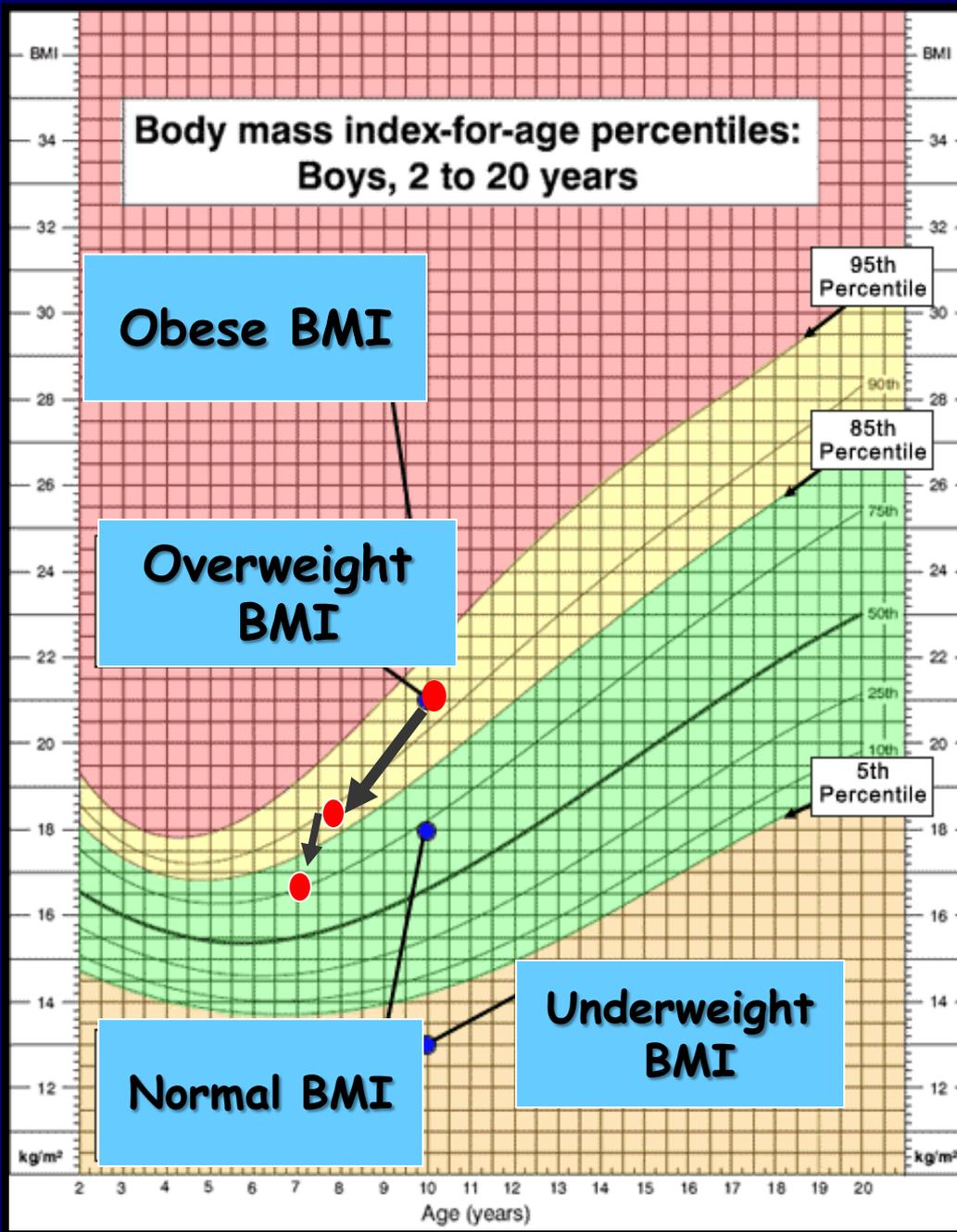
Age of Onset of Pediatric BMI Shifting



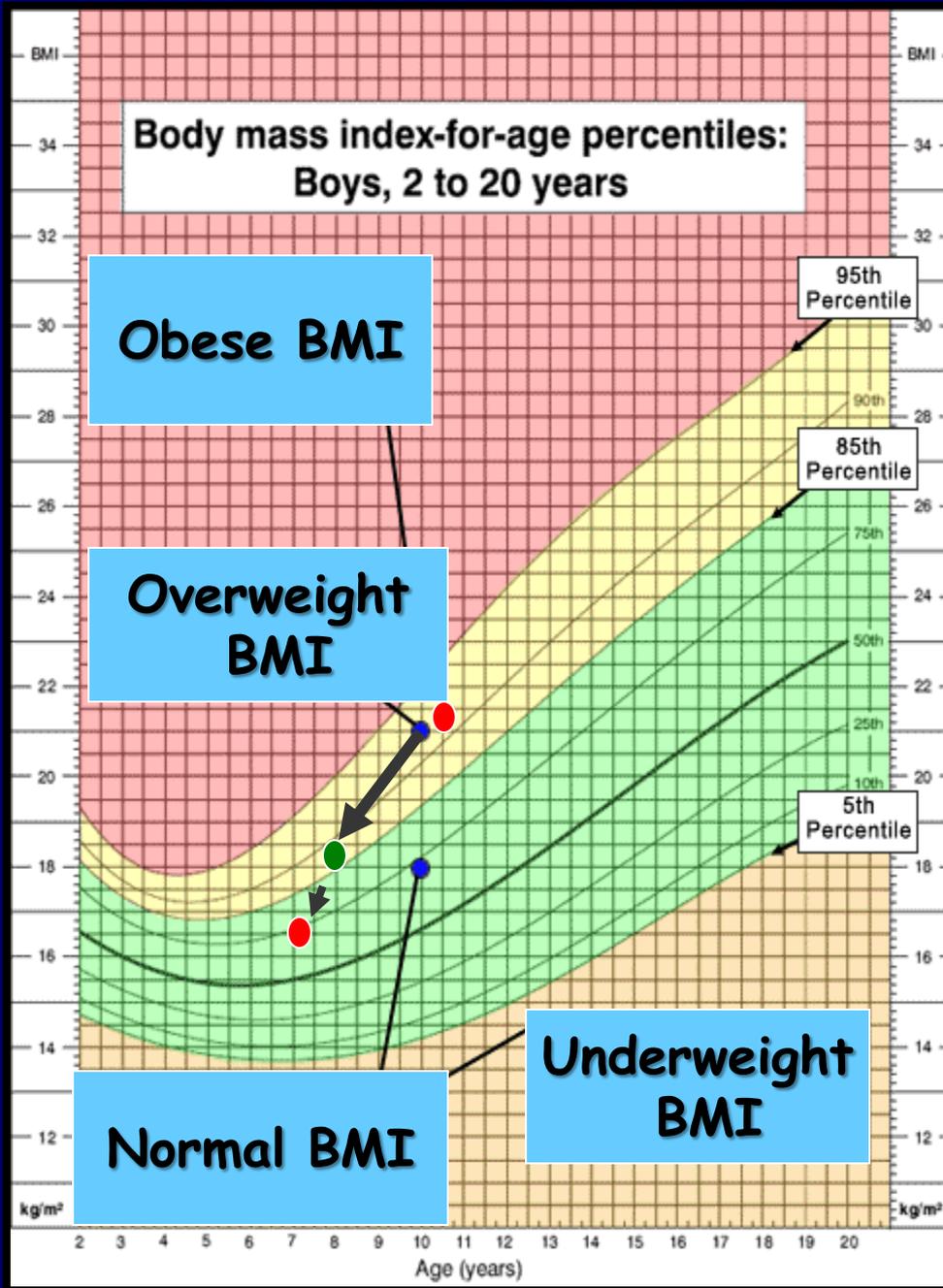
Methods

- **Age of Onset of overweight & obesity**
 - Age when the BMI percentile crossed to the 85-95% (overweight) or $> 95\%$ (obesity)
 - If BMI plotted in the overweight or obese range (85th percentile or higher), their BMI was tracked back to the age at which they crossed from normal BMI to overweight or obese BMI





**Body mass index-for-age percentiles:
Boys, 2 to 20 years**



Obese BMI

Overweight BMI

Normal BMI

Underweight BMI

95th Percentile

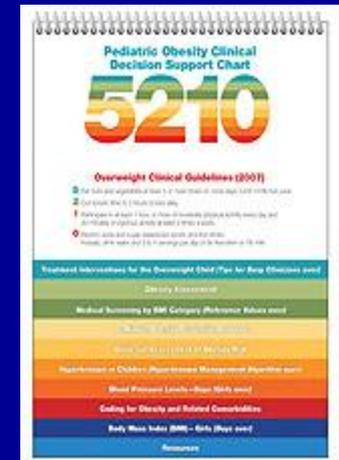
85th Percentile

5th Percentile

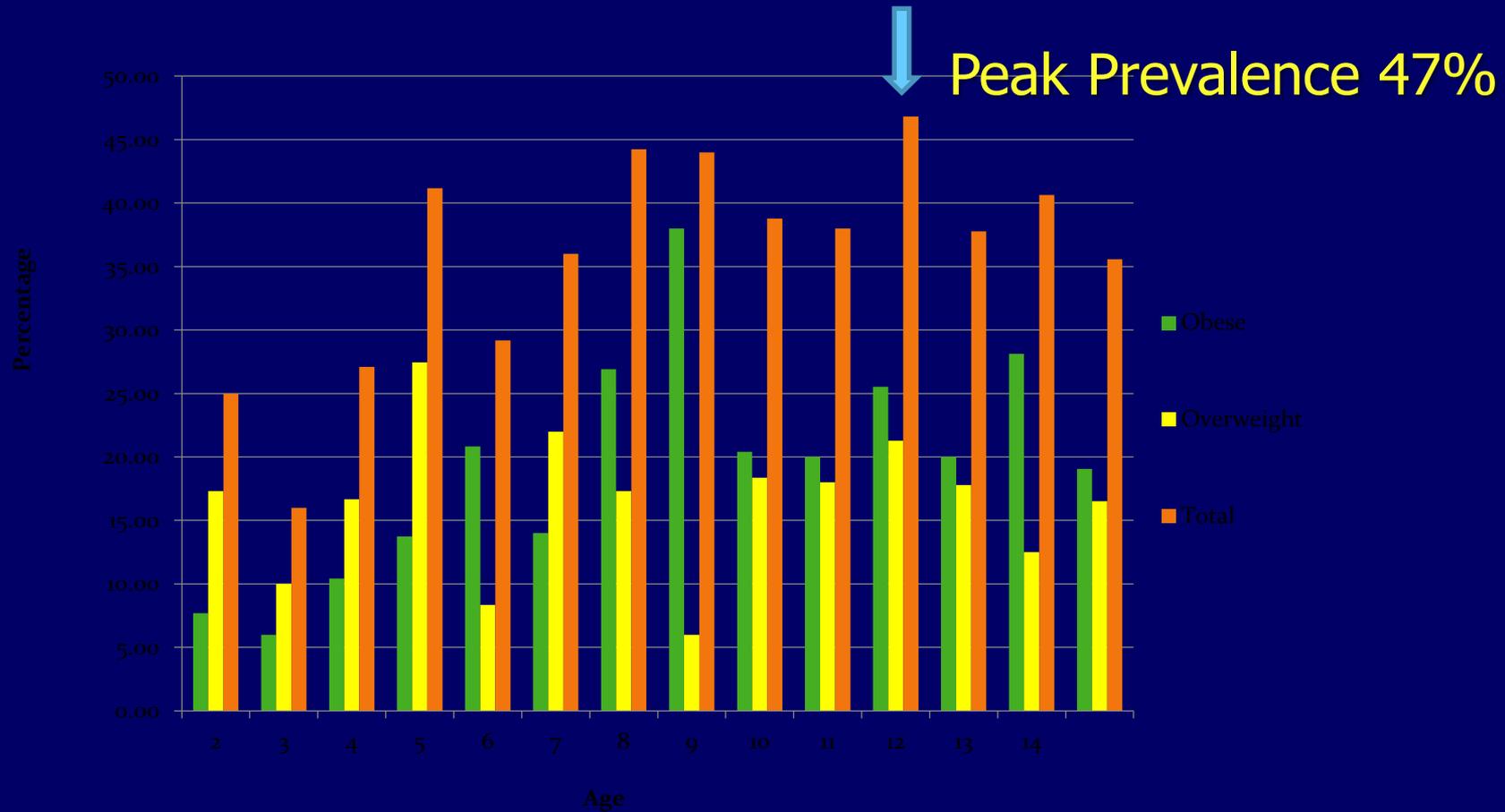
Intervention-QI

A comprehensive intervention in the primary care setting focused on infant/toddler nutrition:

1. Sample diet with portion sizes listed in cups and portion plate at each check up 9 mo to 4 years
2. Water and whole fruits instead of fruit juice
3. 5-2-1-0 healthy, active Rx given at each check up



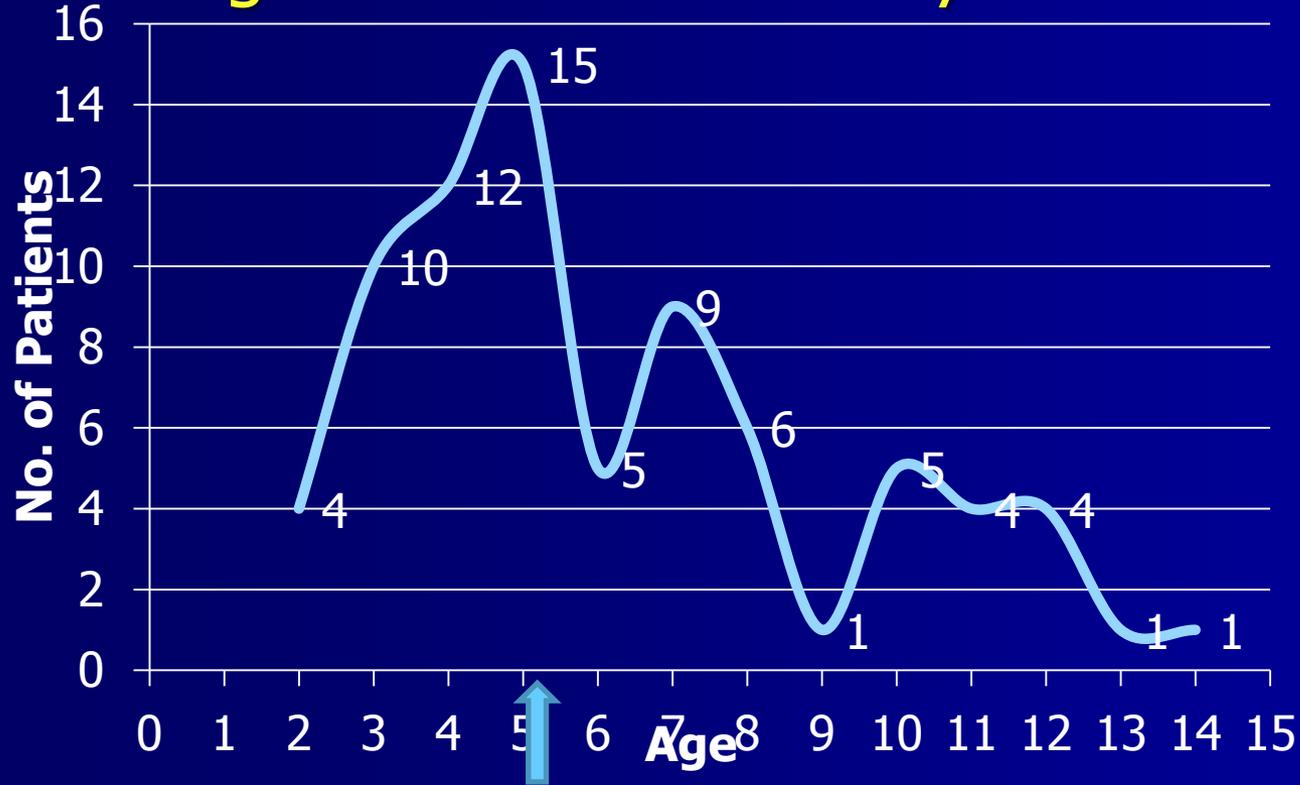
Results-Peak Prevalence by Age



Overall Prevalence of Overweight/Obesity = 36%

Results

Age of Onset of Obesity 2013



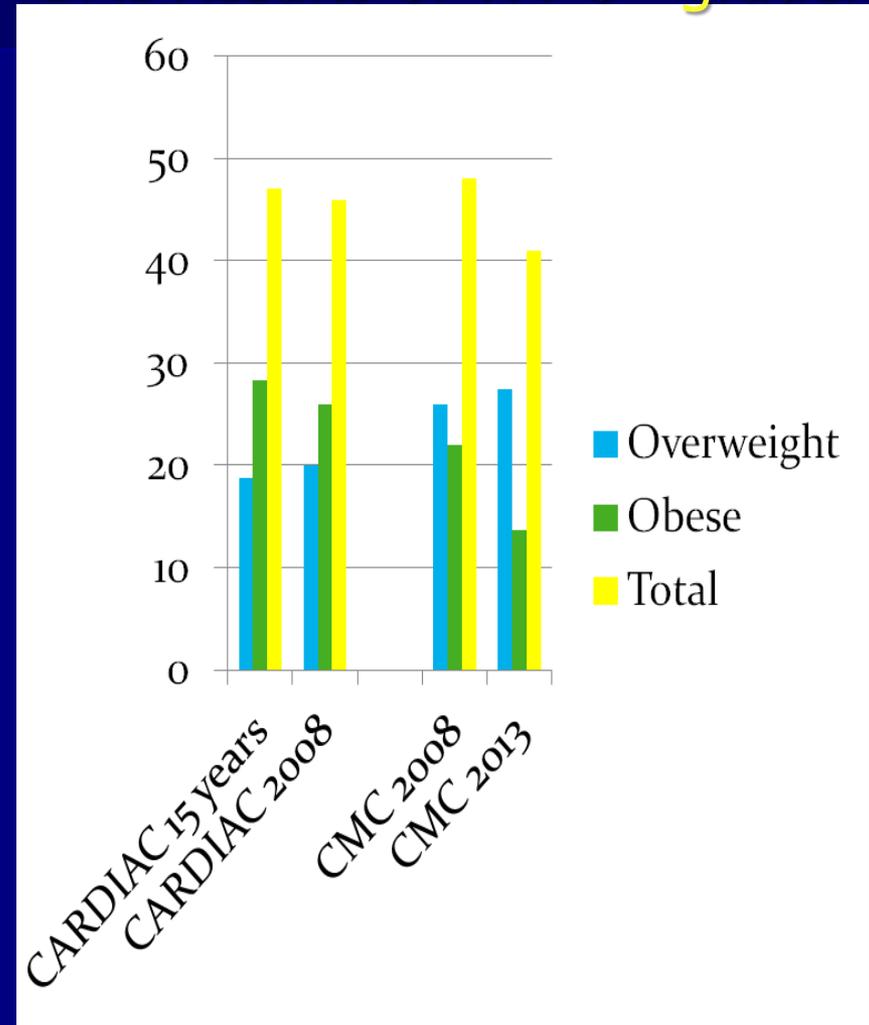
Discussion

- **Decrease** in overall prevalence of overweight and obesity
 - 44% in 2008 → 36% in 2013
- Shift of peak prevalence
 - 50% in 7 year olds in 2008 →
47% in 12 year olds in 2013

Discussion

- Coronary Artery Risk Detection in Appalachian Communities (**CARDIAC**) is the most comprehensive source of school-based BMI surveillance data in WV. In the last 15 years, over 150,000 children have been screened. CMC data for 5th graders is consistent with CARDIAC state data. ⁵

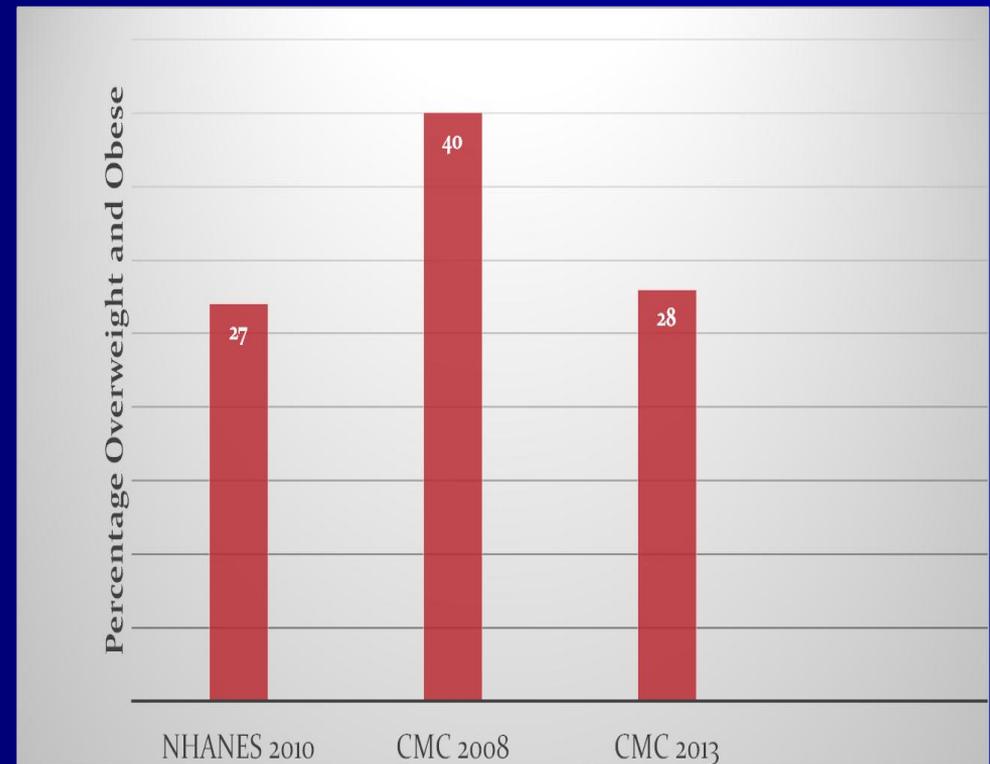
Comparing CARDIAC & CMC BMI Results of WV 5th graders



Discussion

- 2-5 year old prevalence of overweight and obesity now **closer to national average**

Overweight and Obese 2-5 Year Olds



Discussion

- **Delay in Age Of Onset** of overweight and obesity after **focused prevention efforts** aimed at infant/toddler age shifted from 3-4 years to 5 year of age.
- Quattrin found that 80.6% of the children who were referred to an obesity treatment program had become obese before the age of 6 years. However, they were referred 4.3 +/- 2.9 years after having become obese.⁷

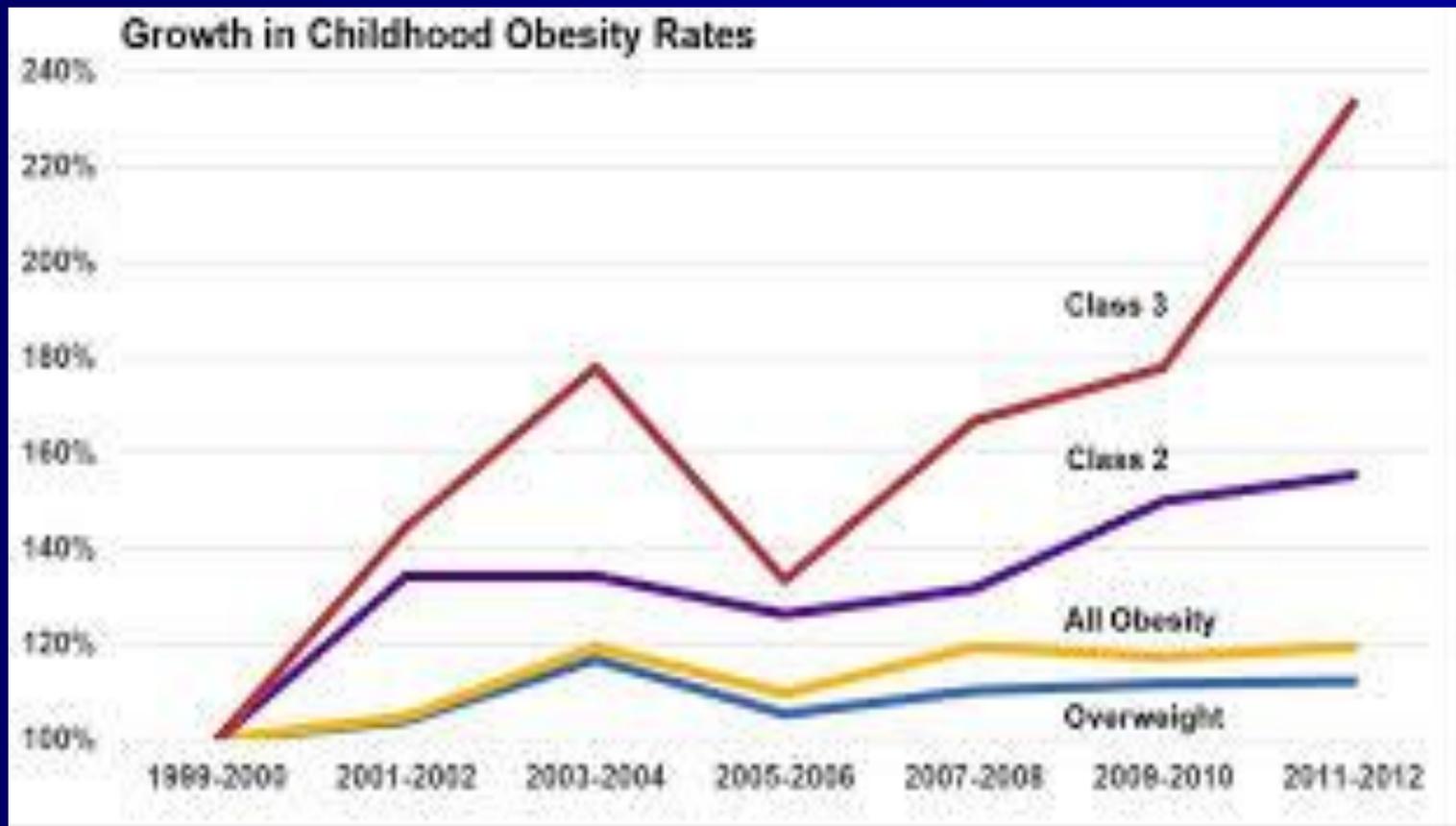
Discussion

- Harrington also points out that traditional practices are to treat childhood obesity AFTER complications occur. He found the age of onset of overweight (BMI>85%) at a median age of 22 months. He further defined the “tipping point” as the onset age determined by statistical modeling and was consistent at 21 months. He concludes that identifying the “tipping point” when the child is most at risk is the ideal time for age appropriate intervention.⁸
- The early peak of 3-4 years is occurring during the time period when the food choices and food environment is not controlled by the child but by the caregivers.⁹

Discussion

- Because of the results of this study, the quality improvement projects and targeted prevention efforts in our practice shifted to the infant/toddler age.
- The anticipatory guidance include parental education during the transition to solid foods, appropriate portion sizes, drinking water and eating whole fruit instead of serving juice and age appropriate sample diets at each check-up.
- Obesity prevention efforts need to address this early age of overweight/obesity with focus in the primary care setting , childcare centers and in the community.

NHANES 1999-2012



HealthyKids Pediatric Weight Management Program



HealthyKids Team



Pediatrician



Dietician



Psychologist



Nurse Educator



Exercise Physiologist



Psychologist

HealthyKids

- Intensive Program- 8 Consecutive Weekly Visits
 - Individual & Group Sessions
 - 1st month-Dietary Group
 - 2nd month-Exercise Group
 - Family Based Program
- Weekly follow-up via Internet Based E-Care Area until Long-term Goals Reached
- Follow-up Office Visits

HealthyKids

- First 4 weeks:
 - Focus on Nutrition
 - Stoplight Diet Plan
 - Small steps to encourage PERMANENT changes
 - Weekly Goals & Rewards



HealthyKids

- Next 4 weeks:
Exercise
 - PLAY!
 - Lifestyle Exercises
 - Strength Training
 - Weights
 - Resistance Bands
 - Flexibility & Agility Training



HealthyKids

- **Pilot Groups** (5 groups = 23 patients)

- 96% Decreased BMI

- BMI 35.5 to 33.5 in 8 weeks

- Mean BMI decrease 2 kg/m²*

- *Published data for 8-12 week programs show average BMI decrease 0.8 kg/m²

HealthyKids

- 93.2% ↓ BMI
- BMI 34.5 to 32.3 in 8 weeks
- Mean BMI decrease 2.2 kg/m²
- 88.1% completed the 8 week program



MOTIVATIONAL INTERVIEWING

- Patient centered care approach
- Nonjudgmental, empathetic and encouraging
- Behavior change influenced more by motivation than by information.
- **Core principle:** People are more likely to accept and act on opinions that they voice themselves.

HealthyKids Success

- Team
- Family Based Approach
- Weekly schedule for small change
- Motivational Interviewing
- Intrinsic and extrinsic motivation





There is no childhood
obesity epidemic.

(We just need better role models.)

For more information, visit the
Coalition of Angry Kids at www.coak.org



September is National Childhood Obesity Awareness Month. For four weeks, you're going to hear that 1 in 3 kids are overweight or obese—and that video games, vending machines, TV and junk food are to blame. But the real problem is that adults aren't setting a good example.

Parents, we know you're busy, so we're here to help. Visit one of our 1,300 Anytime Fitness clubs in the month of September and receive a **FREE 30-day trial membership**, a **FREE 30-minute personal training session**, and a **FREE 30-day pass to AnytimeHealth.com**.

All of our clubs are open 24/7. Join one, use them all.
To find a club near you, visit www.anytimefitness.com.

At participating clubs only. Offer subject to change. Must be 18 years or older.
Current members only. See eligibility.

**ANYTIME
FITNESS**

Sponsor of the Coalition of Angry Kids



Obesity Prevention through
policy, system and environment changes



- *Increase access to affordable, healthy foods*

GOALS

Increase active living and physical activity



Environments that support sedentary behavior and poor diet



Environments that support active living and healthy eating





K is for Knowledge

There are a number of ways to stay healthy:



or more servings
of fruits and
vegetables
each day.



hours or
less each day
of recreational
screen time.



hour or more each
day of moderate
to vigorous
physical activity.



sugary drinks!
Restrict soda,
sugar-sweetened
sports & fruit drinks.

5-2-1-0 *Every Day for Every Body!*

5-2-1-0 images and info courtesy Maine Center for Public Health

Brought to you by
www.keys4healthykids.org





E is for Eating Healthy



- Community Gardens
- Youth & Garden
- Farmers' Market
- School Garden Network





Y is for Youth Being Active



Walkability Checklist

Take a walk with your child and decide for yourselves.
 The KEYS 4 HealthyKids team would like to assist you improving the walkability of your community. Everyone benefits from walking. These benefits include: improved fitness, cleaner air, reduced risks of certain health problems, and a greater sense of community but it must be safe and easy. Take a walk with your child use this checklist to decide if your neighborhood is a friendly place to walk. The KEYS 4 HealthyKids Team wants to know if you find problems, so we can encourage ways to make things better. Try starting from your house and see what is around you then walk to the school, store or favorite place to go. The second step involves the checklist. Read over the checklist before you go, and as you walk, note the locations of things you would like to change. At the end of your walk, give each question a rating. Then add up the numbers to see how you rated your walk overall.

How does your neighborhood rank? Add your ratings together to decide. Circle where your community ranks!
EXCELLENT 30-26 GOOD 25-21 FAIR 20-16 POOR 15-11 AWFUL 10-5

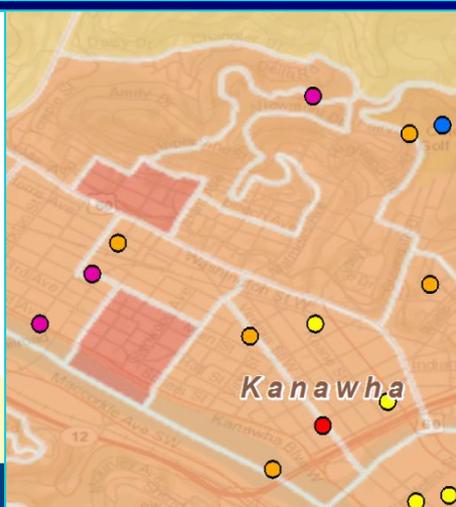
Please return to:
 Krista Farley, Youth Being Active Team Leader, KEYS 4 HealthyKids
 108 Lee Street East, Charleston, WV 25301 Phone: (304) 348-6493 Fax: (304) 348-6821 E-Mail: Krista.N.Farley@wv.gov

1. Start Location*: _____
 Street/Address/Location: _____ City: _____ State: _____

2. End Location*: _____
 Street/Address/Location: _____ City: _____ State: _____

3. Please identify all the facilities/housing that are in the location or surrounding area:

<input type="checkbox"/> Housing-Single Family	<input type="checkbox"/> Recreation/Exercise Facility	<input type="checkbox"/> Grocery Store
<input type="checkbox"/> Housing-Multi-Family	<input type="checkbox"/> Park	<input type="checkbox"/> Convenience Store
<input type="checkbox"/> Housing-Mobile Homes	<input type="checkbox"/> Walking/Biking Trail	<input type="checkbox"/> Other Retail Store
<input type="checkbox"/> Office/Institutional Building	<input type="checkbox"/> Industrial	<input type="checkbox"/> Produce Market
<input type="checkbox"/> Fast-Food Restaurant	<input type="checkbox"/> Vacant/Undeveloped	<input type="checkbox"/> Other Restaurant/Café
<input type="checkbox"/> Other, please specify: _____		





S is for **Safety & Empowerment**

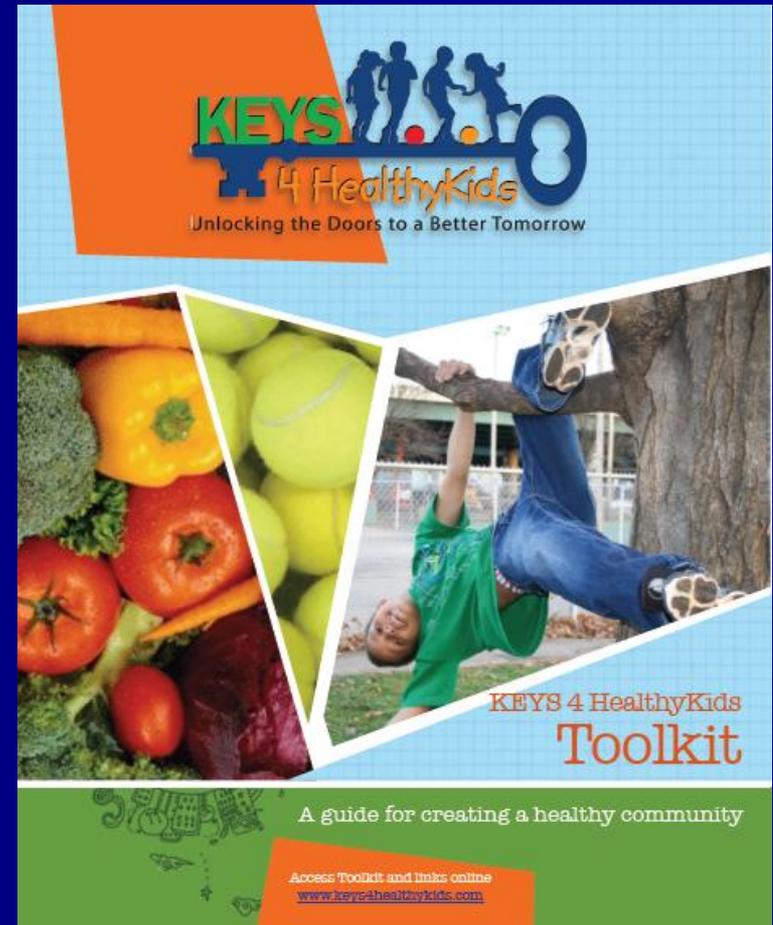
- KEYS Youth Council
- Daycare/After School Nutrition and Physical Activity Policy Improvement



- City Comprehensive Plan-Imagine Charleston
- Bike/Pedestrian Plan
- Move to Improve

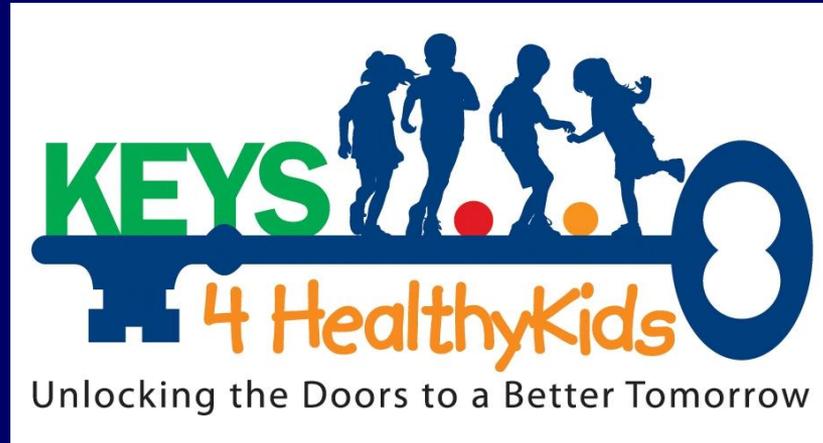
KEYS 4 HealthyKids Toolkit

- The 4 KEYS
- Five Steps
 - Building Partnerships
 - Mobilizing Community
 - Assess the environment
 - Choose Priorities
 - Take Action & Track results



Everyone has a role to play!





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Facebook: [Keys4healthykids](https://www.facebook.com/Keys4healthykids)



Twitter: [Keys4healthykid](https://twitter.com/Keys4healthykid)

