Comprehensive Approach to Pediatric Obesity at CAMC

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Socio-Ecologic Model for Preventing Obesity

Energy Intake

Social Norms and Values

Sectors of Influence

Behavioral Settings

Individual Factors

Food and Beverage Intake

Physical Activity

Energy Expenditure

Energy Balance

Prevention of Overweight and Obesity Among Children, Adolescents, and Adults

- Home and Family
- School
- Community
- Work Site
- Healthcare

- Genetics
- Psychosocial
- Other Personal Factors

- Food and Beverage Industry
- Agriculture
- Education
- Media
- Government
- Public Health Systems
- Healthcare Industry
- Business and Workers
- Land Use and Transportation
- Leisure and Recreation

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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
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

-5
0
5
10
15
20
25
2 3 4 5 6 7 8 9 10 11 12 13 14
Age
Normal to Overweight
Overweight to Obese
Normal to Obese

Jeffrey, Dalabiah 4-08
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

- Normal BMI
- Underweight BMI
- Overweight BMI
- Obese BMI

95th Percentile
85th Percentile
5th Percentile
Body mass index-for-age percentiles: Boys, 2 to 20 years

- **Obese BMI**
- **Overweight BMI**
- **Normal BMI**
- **Underweight BMI**
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

No. of Patients

Age
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
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
Discussion

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

- 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 decrease
- 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.csak.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-gamers, 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 10-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 may be ineligible.
Obesity Prevention through policy, system and environment changes
Increase active living and physical activity

GoALS

- Increase access to affordable, healthy foods
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:

- **5** or more servings of fruits and vegetables each day.
- **2** hours or less each day of recreational screen time.
- **1** hour or more each day of moderate to vigorous physical activity.
- **0** sugary drinks! Restrict soda, sugar-sweetened sports & fruit drinks.

**5-2-1-0 Every Day for Every Body!**
E is for Eating Healthy

- Community Gardens
- Youth & Garden
- Farmers’ Market
- School Garden Network
Y is for Youth Being Active

Walkability Checklist

To be a walk with your child and decide for your neighborhood. Everyone benefits from walking. These benefits include improved fitness, decreased risks of certain health problems, and a greater sense of community. Your route must be safe and easy. Take a walk with your child and use the 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 number to see how you ranked your walk.

How does your neighborhood rank? Add your ratings together to decide. Circle where your community ranks!

EXCELLENT 30-36
GOOD 25-29
FAIR 20-24
POOR 15-19
AWFUL 10-5

Please contact:
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1. Start Location:

2. End Location:

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

- Housing Single Family
- Housing Multi-Family
- Housing Mobile Homes
- Office/Institutional Building
- Fast Food Restaurant
- Other

- Recreation/Athletic Facility
- Park
- Walking/Biking Trail
- Vacant/Underdeveloped
- Industrial
- Other Restaurant/Convenience Store
- Other Retail/Store
- Other

www.keys4healthykids.org
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

A guide for creating a healthy community.
www.keys4healthykids.com
Everyone has a role to play!
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E-Mail: Keys4hk@camc.org
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