Pediatric Overweight and Obesity

Cambria Garell, MD
Assistant Clinical Professor
UCLA Fit for Healthy Weight Program
Associate Program Director
Pediatric Residency Program
Mattel Children’s Hospital UCLA
Learning Objectives

• Define pediatric overweight and obesity
• Identify the prevalence of pediatric obesity and understand how it is affected by racial/ethnic and SES disparities
• Identify comorbidities associated with pediatric obesity
• Articulate the 2007 Expert Committee recommendations regarding prevention and treatment of child overweight and obesity.
• Identify community and patient based strategies to prevent and manage pediatric obesity.
• How is pediatric overweight and obesity diagnosed?
Growth charts and BMI!
What about for kids less than 2y/o?
• Definition of Pediatric Overweight?
  a) BMI <85%
  b) BMI between 85-95<sup>th</sup>%
  c) BMI greater than 20
  d) BMI >95<sup>th</sup>%
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• Definition of Pediatric Obesity?
  a) BMI <85%
  b) BMI between 85-95th%
  c) BMI greater than 20
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• Definition of Pediatric Obesity?
  a) BMI <85%
  b) BMI between 85-95th%
  c) BMI greater than 20
  d) BMI >95th%
Prevalence

• Obesity now affects 17% of all children and adolescents aged 2-19 y/o in the US, about 1/3rd of all children in the US are overweight/obese

http://www.cdc.gov/obesity/data/childhood.html
Obese* Children in the U.S. (*BMI≥95th percentile)

Obesity prevalence differs amongst racial/ethnic group, head of household income, and education level.
Pediatric Obesity and Racial/Ethnic Group

- 2011-2012 Obesity Prevalence:
  - 22.4% Hispanic youth
  - 20.2% non-Hispanic black youth
  - 14.1% non-Hispanic white youth
Obese and Overweight* Children 2-5 years old in the U.S. by race (*BMI≥85th percentile)

Pediatric Obesity and Head of Household Education

- If head of household completed college, obesity prevalence is **HALF** that of those children whose head of household did not complete high school
  - 9% vs 19% among girls; 11% vs 21% among boys

- Prevalence of obesity among girls whose adult head of household had not finished high school has increased from 17% to 23%
Pediatric Obesity and Household Income

- Obesity prevalence among 2-4 year olds is inversely related to household income
  - 14.5% children obese with household incomes at or below poverty level
  - 11.8% children obese with a household income 50-85% above the poverty threshold.
A Glimmer of Hope?

- Obesity prevalence among all 2- to 5-year-old children in the US decreased from 13.9% in 2003 to 8.4% in 2012 (NHANES)

- Obesity among US low-income, preschool-aged children decreased from 15.21% in 2003 to 14.94% in 2010 (PedNSS)
So what? They will grow out of it, right?

The risk of an obese school-aged child becoming an obese adult is:

a) 10-15%
b) 25%
c) 95%
d) 50%
So what?

The risk of an obese school-aged child becoming an obese adult is:

a) 10-15%
b) 25%
c) 95%
d) 50%
• What is the risk of a few extra pounds?
Significant Comorbidities

• High blood pressure and high cholesterol, which are risk factors for cardiovascular disease (CVD).

• In one study, 70% of obese children had at least one CVD risk factor, and 39% had two or more.
Significant Comorbidities

- Increased risk of impaired glucose tolerance, insulin resistance and type 2 diabetes.
- Joint problems and musculoskeletal pain.
- Breathing problems, such as sleep apnea, and asthma.
Significant Comorbidities

- Fatty liver disease, gallstones, and gastroesophageal reflux

- Increased risk of social and psychological problems, such as discrimination and poor self-esteem.

http://www.cdc.gov/obesity/childhood/basics.html
Those few extra pounds don’t cost any money, right?
Economic Burden:

• Lifetime direct medical costs of 10 year old obese child relative to a 10 y/o normal weight child is $19,000/child

• Given the number of 10y/o obese children -- total direct medical cost is $14 billion for this age alone

• (Finkelstein EA, et al Pediatrics April 2014)
What can we do as pediatric providers?
2007 Expert Committee Recommendations

• Step 1: Obesity Prevention at Well Child Visits
  – Assessment and Prevention
• Step 2: Prevention Plus Visits
  – Treatment
• Step 3: Going Beyond your Practice
  – Structured Weight Management
  – Comprehensive Multidisciplinary Intervention
  – Tertiary Care Intervention

Step 1: Obesity Prevention at Well Child Visits

• Measure height/weight, calculate BMI

• Measure blood pressure

• Focused family history
  – Obesity, Type 2 DM, CVD, early deaths from MI/stroke
Step 1: Obesity Prevention at Well Child Visits

• Assess behaviors/attitudes
  – sweetened drinks, fruits/vegetables, frequency of eating out/family meals, portion size, daily breakfast
  – Self-perception/concern about weight, readiness for change, barriers/challenges
Laboratory Assessment

• >85-94 percentile
  Fasting lipids
  No risk factors

• 85th-94th percentile
  Fasting lipids,
  Fasting glucose,
  AST/ALT
  with risk factors

• ≥95 percentile
  Fasting lipids,
  Fasting glucose,
  AST/ALT

Step 1: Obesity Prevention at Well Child Visits

- Give consistent evidence-based messages for ALL children
- Assess self-efficacy/readiness for change, use MI techniques to improve the effectiveness of your counseling
Step 2: Prevention Plus

- **Focus** is on basic healthy lifestyle eating and activity habits.

- **Goal** is improved habits and as a result improved habitus (BMI Status).
  - Oftentimes the goal is NOT weight loss, but NO weight GAIN or slower weight gain, given linear growth potential

- Frequent Monitoring
Which of the following interventions has the strongest evidence for obesity prevention and management?

A. Minimize Sugar-sweetened beverages with a goal of 0.

B. Increasing to 5 fruit and vegetable servings or more per day.

C. Consume a healthy breakfast.

D. Reduce foods that are high in energy density.
Which of the following interventions has the strongest evidence for obesity prevention and management?

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B. Increasing to 5 fruit and vegetable servings or more per day.

C. Consume a healthy breakfast.

D. Reduce foods that are high in energy density.
Focus is on basic healthy lifestyle eating and activity habits

- Minimize Sugar-sweetened beverages with a goal of 0**
- Increase meals prepared at home**
- Education and modification of portion sizes**

** = strong evidence
Focus is on basic healthy lifestyle eating and activity habits

- Reduction of inactive/screen time to < 2 hours/day, if less than 2yo to 0 time**

- Increasing active time for children and families to >=1 hour each day**.

- Involve the whole family in lifestyle changes and ensure cultural sensitivity

** = strong evidence

Focus is on basic healthy lifestyle eating and activity habits

- Increasing to 5 fruit and vegetable servings or more per day*
- Reduction of 100% fruit juices*
- Consume a healthy breakfast*

*weaker evidence, but may be important for some individuals
Focus is on basic healthy lifestyle eating and activity habits

– Reduce foods that are high in energy density *

– Meal frequency and snacking *

*weaker evidence, but may be important for some individuals
Frequent Monitoring

• After 3-6 months, if child has not made appropriate improvements move to next step:
  – Structured Weight Management
  – Comprehensive Multidisciplinary Intervention
  – Tertiary Care Intervention
Education and Support: 5 – 2 – 1 – 0 – Blastoff!

- **5:** or more fruit and vegetable servings per day
- **2:** No more than 2 hours of screen time per day for 2 year olds and over and 0 time for under 2
- **1:** hour of exercise/day
- **0:** sweetened beverages

- **Blastoff:** Move, be active and have fun!
At least 5 fruit and vegetable servings per day

- Offer healthy choices at school, home, and team sporting events

- Model healthy eating behaviors
  - Practice eating family meals

From: choosemyplate.gov
5-2 or less hours of television viewing

- Strategies
  - Choose as a family 1-2 hours of television shows to watch and then turn off the TV when desired shows are finished
  - Remove television and/or computer from child’s bedroom

From: Prevention of Pediatric Overweight and Obesity. Policy statement from the Committee on Nutrition PEDIATRICS Vol. 112 No. 2 August 2003, pp. 424-430
AAP Recommendation

• 0-2 years old: no television
• >2 years old: <2 hours/day of TV and other entertainment media

From: Children, Adolescents, and Television (RE0043), Committee on Public Education
www.aap.org/policy/re0043.html
What can you do that:

 ✓ is fun
 ✓ makes you feel good
 ✓ improves your health
 ✓ makes you look younger
 ✓ is free
5-2-1 hour of exercise/day
5-2-1-0 sweetened drinks

- USDA MYPlate

- Focus on 1-2 changes/month
  - Modification of fruit juice and sugary drink consumption
    - Eliminate soda
    - Limit juice to half a cup per day
  - Reducing milk to 1% fat after 2 years old

From: choosemyplate.gov
5-2-1-0 Portion Control!

- USDA MYPlate

From: choosemyplate.gov
What can you do to support social justice and prevent obesity?

A. Promote breastfeeding
B. Reduce alcohol consumption
C. Reduce cigarette smoking
D. Promote gum chewing
What can you do to support social justice and prevent obesity?

A. Promote breastfeeding
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Support women who live in poverty to breastfeed: it provides equal opportunities for infants to grow and develop optimally.
1 or more years of breastfeeding

- Key points for support:
  - Pregnancy
  - Newborn period
  - 3-5 days of age
  - One month old
  - Mother going back to work

- Resource
  - [www.cdc.gov/breastfeeding](http://www.cdc.gov/breastfeeding)

Infant Benefits from Breastfeeding Optimally Reduced Risk of Disease

- Acute Otis Media: -23%
- Atopic Dermatitis: -42%
- C. (non-specified): -64%
- Asthma: -40%
- Type 2 Diabetes: -39%
- Childhood Leukemia: -19%
- SIDS: -36%
- Obesity: -24%

AHRQ, 2007
Biological Theories of Why Breastfeeding Reduces the Risk of Childhood Obesity

• Infants-studies under way to evaluate:
  • Infants self-regulate at the breast
  • Different feeding patterns & maternal behavior
    – Breastfeeding mothers are less controlling of the child’s feeding at one-year
  • Reduced risk for early growth acceleration
  • Leptin, ghrelin, adiponectin considered to play a role
  • Reduces the risk of obesity by 4% for each month of breastfeeding

Personal Goals

• Become a role model
  – Provide support for healthier environments for your employees and colleagues
  – Exercise regularly
RESOURCES

• Healthy Active Living for Families
  – Targets children <5 y/o
  
  – http://www.healthychildren.org/English/healthyliving/growing-healthy/Pages/default.aspx
Food & Feeding

Good eating habits begin early.

- **baby**: 0 to 12 months
- **toddler**: 1 to 3 years
- **preschool**: 3 to 5 years

Physical Activity

Even small children need to get moving.

- **baby**: 0 to 12 months
- **toddler**: 1 to 3 years
- **preschool**: 3 to 5 years

Tips for Parents

Being a parent is an important job!

- **baby**: 0 to 12 months
- **toddler**: 1 to 3 years
- **preschool**: 3 to 5 years
RESOURCES

FIND A PARK!

• Mobile or web platform

• http://www.caliparks.org
  (spanish/english)
RESOURCES

• LA County Healthy Weight Resource Guide
  http://fitprogram.ucla.edu/body.cfm?id=77

• http://fitprogram.ucla.edu
RESOURCES

- choosemyplate.gov

NICHQ Primary Care Toolkit
- http://obesity.nichq.org/resources/healthy%20care%20for%20healthy%20kids%20obesity%20toolkit
Are You a Healthy Kid?

**Patient Name: ____________________ Age: _____**

While you are waiting to see your clinician, please take a moment. For each of the following questions, circle “yes” or “no.”

1. Do you eat five or more fruits and vegetables per day?
2. Do you have a favorite fruit or vegetable that you eat every day?
3. Do you eat breakfast every day?
4. Do you watch TV, videos, or play computer games for two hours or more per day?
5. Do you take gym class or participate in sports or dance in three or more times a week?
6. Do you have a favorite sport or physical activity that you love?
7. Do you eat dinner at the table with your family at least once a week?
8. Do you have a TV in your bedroom?
9. Do you drink more than one soda, juice, or other sugar-sweetened beverage?

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**5-2-1 Daily Prescription for Better Health!**

Height: _____  Weight: _____  BMI: _____  BMI Percentile: _____

To help you get healthy and grow strong, begin doing what we’ve said above.

**At Least 5 Fruits & Vegetables**

Servings (1/2 cup)

- Apples/Bananas/Oranges
- Apricots/Pears/Plums
- Asparagus/Broccoli
- Beans/Lentils/Peas
- Berries/Grapes/Kiwi
- Carrots/Celery/Spinach
- Dates/Figs/Raisins
- Guava/Mango/Papaya
- Lettuce/Tomatoes/Peppers
- Other:

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**Weekly Recommendations:**

No more than one sugar-sweetened beverage: _____ Soda  _____ Fr

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**Growing Up Healthy and Strong Is as Easy as 5-2-1!**

5—Record the servings of fruits and veggies you eat each day. 5 or more each day is the healthy way.

2—Limit your screen time; try not to guess—you’ll be a success if it’s 2 hours or less.

1—Add up your time to get the activity score—get 1 hour or more to build a strong core.

Track your progress every day. Record each amount in the chart below.

Family Member Name: ____________________

Week of: ____________________

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**Fruits and Veggies**

- No More Than 2 Hours of Screen Time
- Screen Time

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**Physical Activity**

- 30 minutes or more
- Other:
Thank You!