Childhood Obesity and the Role of the Primary Care Provider

Denise M. Kilway, DNP, RN, APNP
Pediatric Nurse Practitioner
DKilway@mcw.edu
Medical College of Wisconsin
Children's Specialty Group - Children's Hospital of Wisconsin
Department of Pediatrics
Pediatric Gastroenterology, Hepatology and Nutrition
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Disclosure

- I have nothing to disclose of any financial or pharmaceutical affiliations.

Objectives

- State the difference between overweight and obesity in the pediatric population
- Articulate factors that increase and contribute to pediatric obesity
- List the guidelines for monitoring BMI and when to do screening blood test in the pediatric patient.

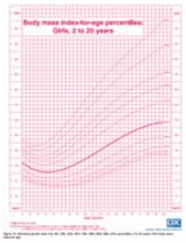
The Well Child Checkup

- American Academy of Pediatrics – AAP Guidelines
  - ***Monitor Height, Weight and BMI with all children at the well child check up - BMI starting at 2 years of age*** (weight to height ratio in under 2 year olds) (AAP, 2017)
  - ***Check for Dyslipidemia twice in childhood period:***
    - **once** time between 9-11 years of age
    - **second** time between ages 17 and 21 years of age (AAP, 2017)
      - Fasting Lipid panel

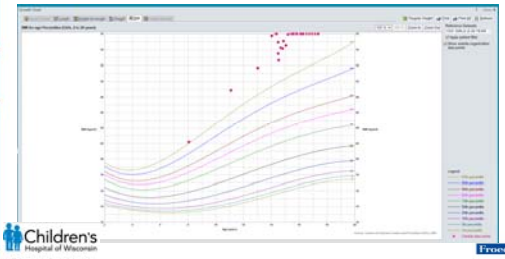
Obese versus Overweight?

For children, use growth charts:
Overweight: BMI = 85-95%,
Obese: BMI >95% obese

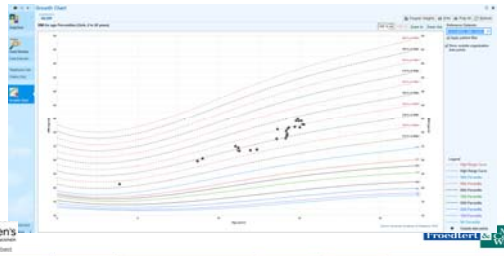
•BMI for age, not weight for age
•Gender
•Not used for children under 2 years old



How does BMI look in EPIC



New Extended BMI Chart in EPIC



Centers for Disease Control - Childhood Obesity in the United States

- Childhood obesity has more than doubled in children and quadrupled in adolescents in the past 30 years
  - Percentage of children aged 6-11 years who were obese increased from 7% in 1980 to nearly 18% in 2012.
  - Adolescents aged 12-19 years who were obese increased from 5% to nearly 21% in the same time period

CDC information continued

- 2011-2014 – 36.5 % of adults obese in US
- 2011-2014 – 17% of all US children obese in US
  - 2-5 year olds = 8.9% obese
  - 6-11 year olds = 17.5% obese
  - 12-19 year olds = 20.5 % obese
  - Same in both genders (CDC, 2015)

Pediatric Obesity in Wisconsin

- Adolescent population in Wisconsin
  - Greater than 14% were overweight
  - 9.3% were obese (CDC, 2012)
- Child population in Wisconsin
  - 2-5 year olds = 16.6% were overweight and 14.7% were obese
  - 10-12 year olds overweight + obese = **29.5%** (Trust for America's Health, 2017)

CDC Information continued

- In 2012, more than one third of US children and adolescents were overweight or obese
- Among low-income preschool children, 1 of 3 children are obese or overweight before their 5th birthday

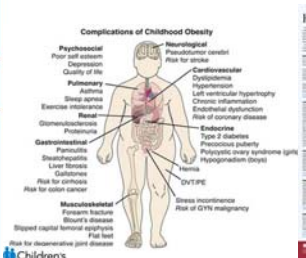
Additional Research

- New England Journal of Medicine, Cunningham, et al (2014)
  - 7738 participants
  - 6807 were not obese at start of study
  - Data collected over 9 years
  - Overweight 5 year olds were four times as likely as normal – weight children to become obese

From Cell to Society

- Research shows that the time to prevent childhood obesity is in the pre-pregnant woman
- Multifactorial (Fiese et al, 2013)
- Epigenetics

Complications to Pediatric Obesity



Insulin Resistance Cycle

Risk factors that can increase risk for childhood obesity:

- Genetics/Family history
- Ethnicity
- Gender
- Physiologic
- Medication
- ACE – Adverse Childhood Event

Pediatric obesity – body composition compared to normal weight children:

- They were 3.9 cm taller
- Higher total body water
- Higher body volume
- Higher lean mass
- Higher fat mass
- Higher bone mineral content (Kendrick et al, 2015)
- Their body composition can affect medication effects (Antibiotics, Narcotics)

Medical History

- Thorough Family History
  - HTN, Stroke, OSA, Bariatric Surgery, type 2 DM, Liver disease, Hyperlipidemia
- Child's medical history
  - Snoring
  - Bed wetting
  - Painful Limp
  - Elevated BP x3
  - Mood swings/depression
  - School academic concerns
  - Teasing at school/social concerns
  - Headaches with or without vision changes
  - Menstrual irregularity

Physical Exam

- Body– rotund abdomen
- Skin –
  - Acanthosis Nigricans: posterior neck, axillae, groin crease, face
  - Stretch Marks: chest, shoulders, arms, legs and abdomen
  - Acne: face, chest, back
- Muscular skeletal –
  - Bowed legs
  - Flat feet
  - Limp
- GU – small appearing genitalia in males

Cost of Obesity

- CDC:
  - As much as $147 billion annually
  - Obese spent $1,429 more for medical care than a normal weight patient in 2006.
  - In 2000, more than 17% of all deaths in the United States were attributable to being overweight or obese — a death rate surpassed only by those from tobacco use
  - Worldwide a bigger health threat than smoking
  - Obesity increases the risk of cancer in adults (CDC,2017)
    - 13 cancers that make up of 40% of all cancers

Cancers Associated with Obesity in Adults (CDC, 2017)

NEW Kids Clinic

- Outpatient Clinic – Pediatric GI
- Referral from Primary Healthcare Provider
  - Have to meet criteria to be seen
  - BMI>85% for age and gender and have a co-morbid health issue
    - Fasting labs – Lipid panel, Glucose, Hemoglobin A1c, Insulin level, ALT, AST
    - Or other issues – PCOS, Sleep apnea, SCFE, Pseudo Tumor Cerebri, NAFLD/NASH

NEW Kids Clinic

- First appointment with Pediatric Nurse Practitioner (PNP)
  - Main Campus or New Berlin
- Second visit with Registered Dietitian (RD)
- Third visit with PNP and RD
- Offered up to 6 visits total are offered
- PNP and RD educational intervention
- Referrals to other subspecialists
  - If qualifies for consideration of Bariatric Gastric Sleeve they are referred to Dr. Farhat Ashai-Khan and Dr. Tammy Kindel

Referral to NEW Kids Program

- Two ways to do it:

NEW Kids Information
Foundations for education for Primary Care Providers

- 3-2-1-0 Program
- 3 meals per day
  - 2 hours screen time or less
  - 1 hour physical activity
  - 0 sweetened beverages
- MyPlate.gov
  - Increase fruit and vegetable intake
- Get at least 8 hours of sleep (8-13 hours depending on age of child).
- Talk about the co-morbid issues – insulin response, fat storage cycle versus fat burning cycle
- Limit simple carbohydrates and increase fiber – for cereals, granola bars, pasta, breads (At least 3 grams of fiber or more and less than 9 grams of sugar per serving)

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Handout CHW Intranet - #1550: 3,2,1,0


Children's
Health Facts for You
3-2-1-0: Steps to a Healthier You

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Meal Consistency - 3 meals a day

- For children – recommend 3 meals a day, a snack in between meals if it is going to be over 4 hours to the next meal
  - Snack is a small amount of food (around 150 calories), not another meal
- Don't skip meals
- Breakfast important for metabolism – eat something within an hour of waking up
- Watch evening eating and snacking – can be related to boredom vs. hunger
- Intermittent fasting is new in adult literature – not recommended for pediatric patients

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Sedentary Activity – 2 hours or less a day

- Screen time – tablet, phone, computer, video games, TV
- Decreases metabolism
- Vegetative (inactive/sluggish/lethargic) state
- Studies show that 2 hours or less is optimal for health

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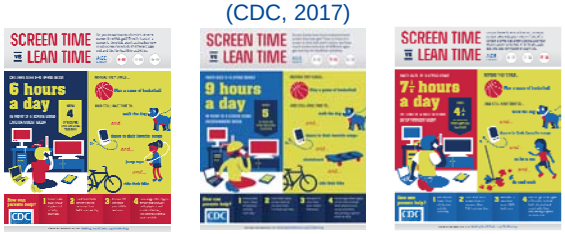
CDC – Screen Time versus Lean time (CDC, 2017)



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Physical Activity – 1 hour a day

- Goal of a total 1 hour of activity a day for kids
  - Can be spread throughout the day
- Keep active
  - Find things that they like to do
- Start small and work up to 1 hour
- Play can be activity
- Screen time does not count if you are active and HR is up

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Zero Sweetened Beverages

- If you eat or drink extra calories and don't burn off those calories, then those extra calories are converted to fat
- Read labels – 3 grams of sugar or less per serving
  - Only exception is skim or 1% milk
- Chocolate milk has double the sugar than white milk
  - 5 cartons a week for 1 month = 2100 extra calories = over 5 pounds a year

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Role of the Primary Health Care Provider – YOU!

- **Monitor Serial BMI's on well child visits and note changes in growth chart per AAP recommendations (up or down 2 standard deviations of percentiles is a red flag!)**
- **Monitor for dyslipidemia at specific ages as recommended by AAP – first one at ages 9-11 years, second time between 17-21 years**
- Counsel patients for healthy lifestyle at every age – health habits over time
- It doesn't get better unless they change something
- Prevention is better than treatment – start with the pre-pregnant women discussing healthy lifestyle.
- Transparency about risk factors and information to your patients
- Utilize evidence based initiatives and treatment – the research can be overwhelming, rely on peer reviewed journals, systemic reviews. (Cochrane Review)

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