# Obesity Prevention and Treatment at Well Child Visits

The Evidence-Based Approach to Clinical Care

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# Today we will discuss…

- The Obesity Epidemic
- The 2007 Expert Committee guidelines and evidence-based recommendations on the prevention and treatment of obesity in children
  - Assessment
  - Prevention
  - Treatment (Stage1: Prevention Plus)



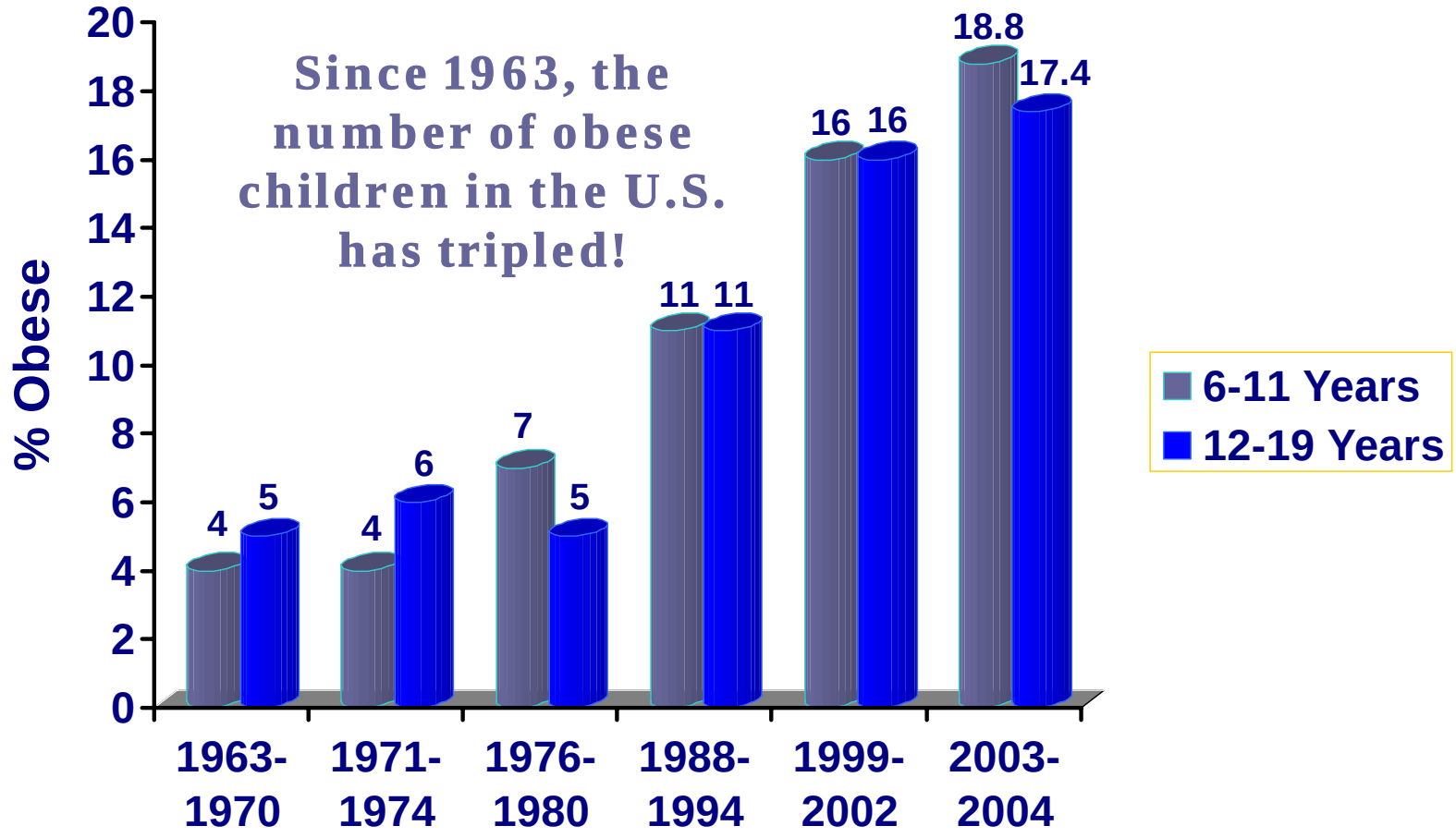
Pediatrics 2007;(120):S164S192.

# Objectives

- Describe the use of BMI (Body Mass Index) to assess children ≥ 2 yo for obesity or overweight
- Identify evidence-based behavioral changes in diet and physical activity to prevent and treat obesity in children
- Counsel families using the Empathize/Elicit-Provide-Elicit communication technique
- Discuss the stages of obesity treatment



# Prevalence of obesity

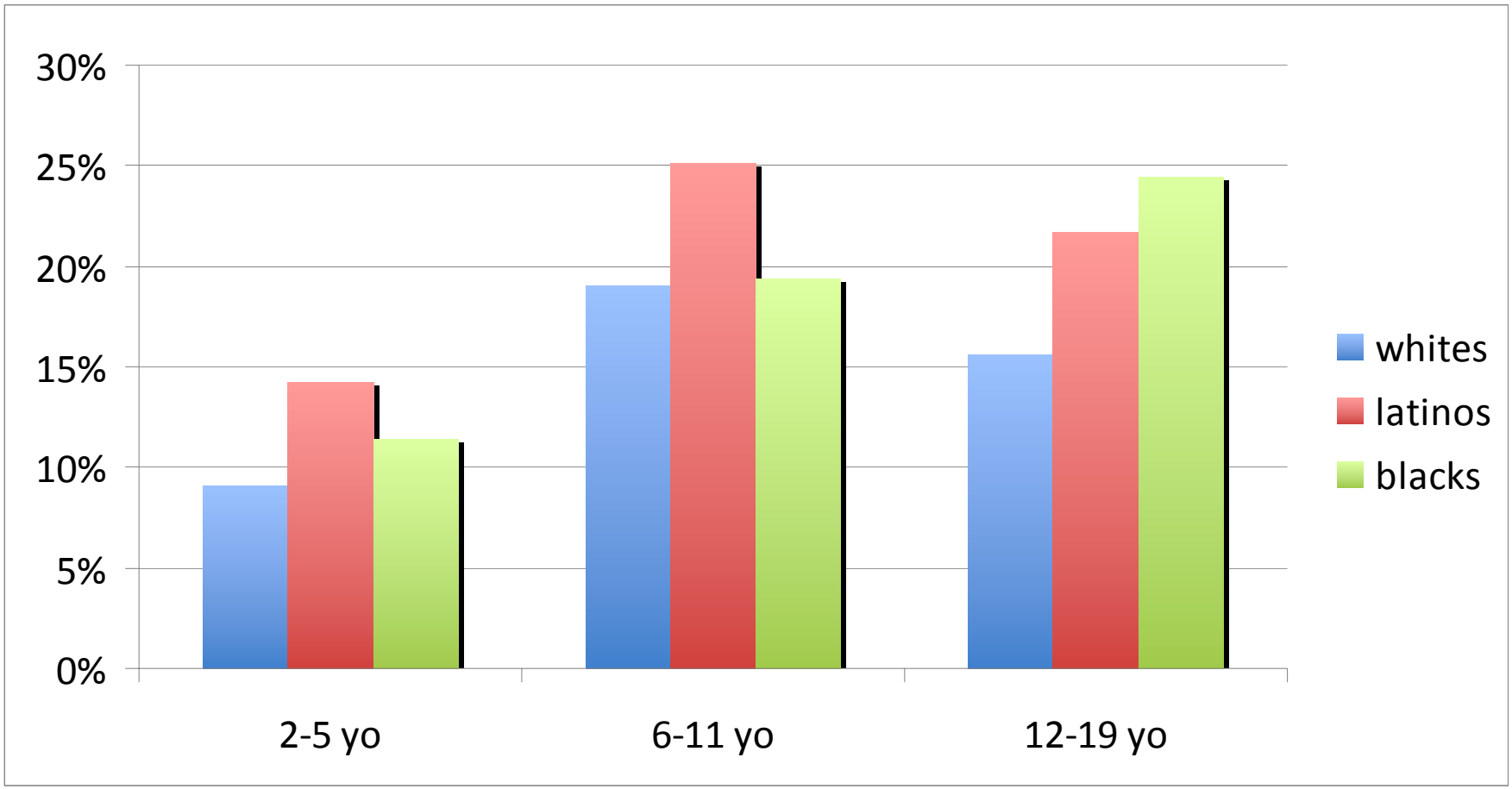



JAMA 2006;295 (13): 1549-1555.



# Which children are at greatest risk?

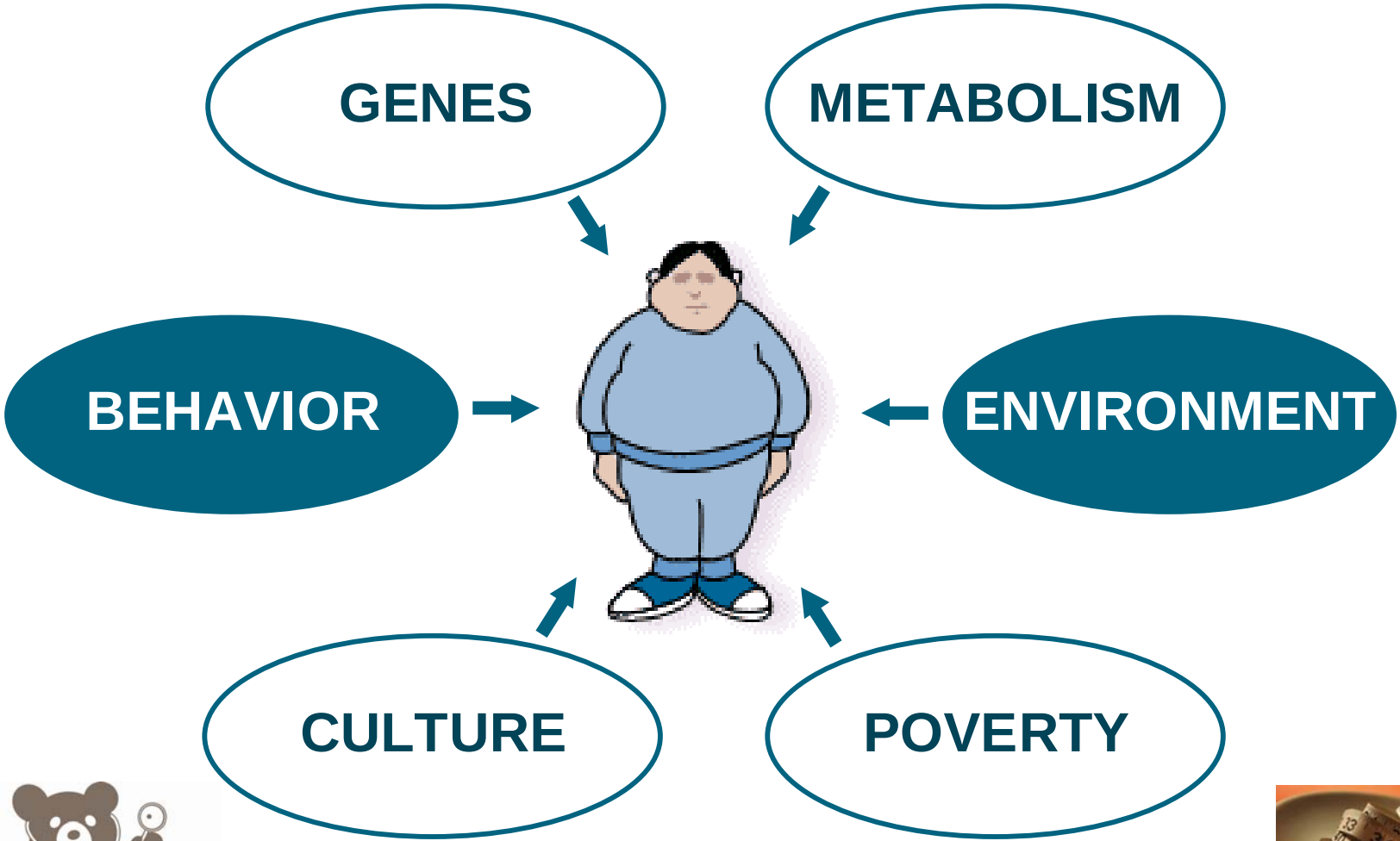
## Prevalence of Obesity 2007-2008




JAMA 2010; 303 (3): 242-249.

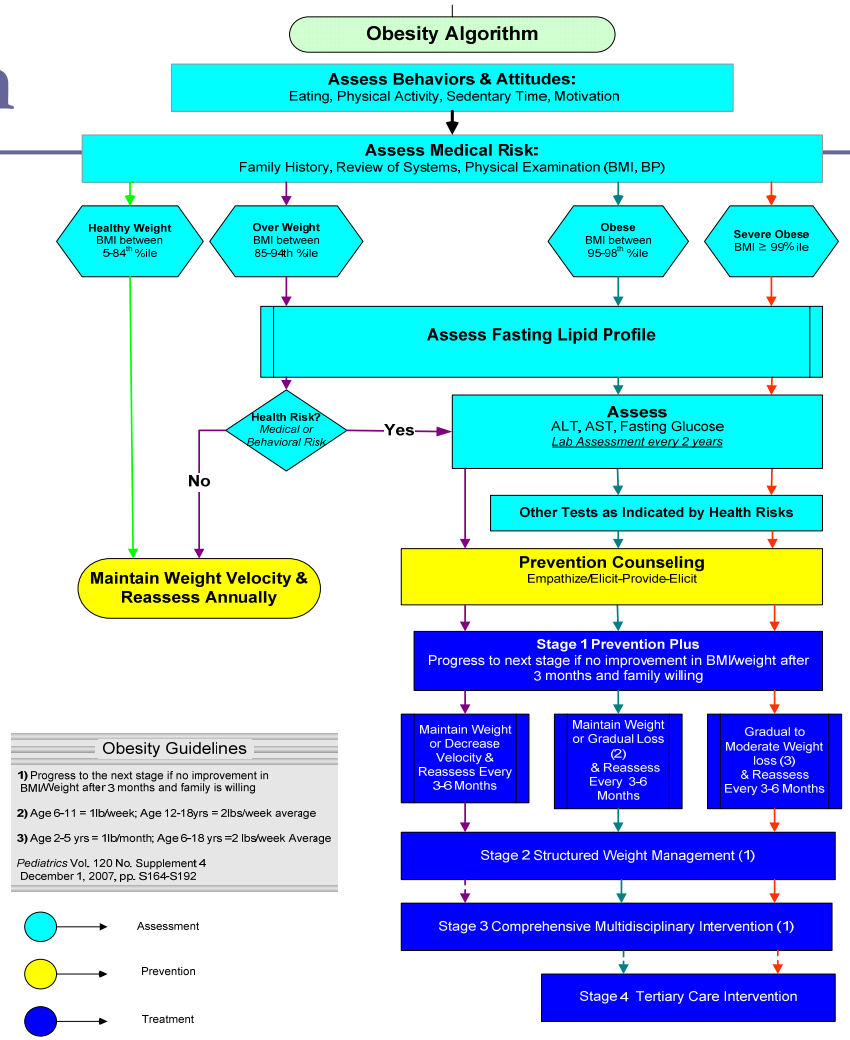


# What are the modifiable risk factors for obesity?






# Obesity Algorithm






# Assess Behaviors and Attitudes

All providers need to assess behaviors and attitudes towards diet at every well child visit.



# Assess Behaviors and Attitudes: Diet

Key dietary behaviors to address include the following:

- Amount of sweetened beverages consumed including fruit juices
- Limited fruits and vegetables
- Skipped breakfast or poor quality of breakfast



# Assess Behaviors and Attitudes: Diet

- Frequent snacks and poor quality snacks
- Large portions size
- Fried foods and frequent dining out



# Assess Behaviors and Attitudes: Diet

Besides the quality of diet, providers need to assess where and how food is being consumed.

- TV viewing during meals or snacks
- Frequency of family meals



# Assess Behaviors and Attitudes: Physical Activity

During a well child visit, it is also important to determine how much physical activity a child partakes in daily.



# Assess Behaviors and Attitudes: Physical Activity

- Screen time including video, computer, and television should be less than 2 hours per day
- Moderate to vigorous physical activity of at least one hour a day



# Assess Behaviors and Attitudes: Physical Activity

- Need to incorporate activity into daily routine
- Assess environment and available resources for activity



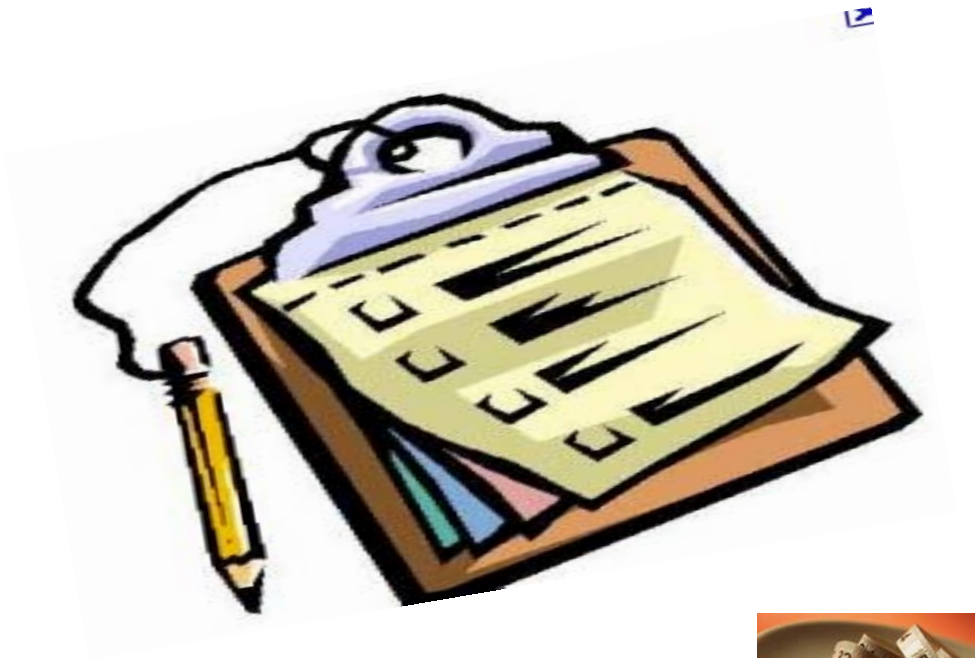
# Assess Behaviors and Attitudes: Motivation

- Is there concern about the child's weight?
- What is the perception about child's weight?
- Has weight loss been attempted in the past?
- Is there a desire to make changes in lifestyle?



# How to accomplish this during a well child visit?

Surveys given to patient or parent in waiting room or when vitals are being done





# Assess Medical Risk: Family History

- Obesity
- Cardiovascular disease
- Hypertension
- Dyslipidemia
- Eating disorder
- Diabetes



# Assess Medical Risk: Parental Obesity

- Strong risk factor for lifelong obesity
- Child with one obese parent: 3 fold increase risk of obesity
- Child with 2 obese parents: 13 fold increase risk of obesity



# Assess Medical Risk: Type 2 Diabetes

- Strong family history of diabetes predicts risk in child
- Prevalence of childhood diabetes: higher among North American Indian, African-American, Latino population



# Prevalence of diabetes

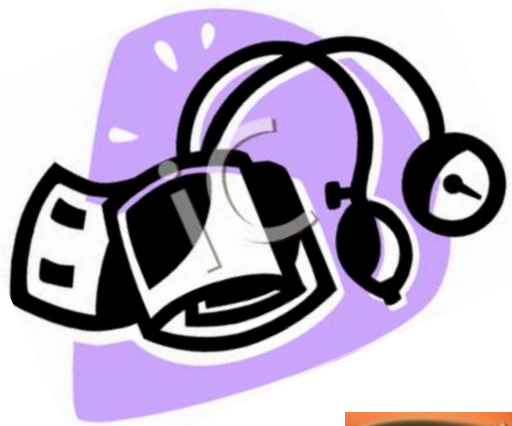
- The lifetime risk of developing diabetes for a Hispanic female born in the United States in the year 2000 until her death is 1 in 2.(1)
- This may be the first generation of children whose life expectancy is shorter than their parents as a result of the consequences of overweight and type 2 diabetes.(2)

1. JAMA 2003 October 8;290(14):1884-1890
2. New Engl J Med Vol. 352(11) March 2005, pp. 1138-1145



# Assess Medical Risk: Cardiovascular Risk Factor

- Hyperlipdemia and hypertension more prevalent when positive family history





# Assess Medical Risk: Review of Systems

- Depression: anxiety, teasing history, school avoidance, sleepiness, social isolation
- Eating disorders: binge eating, vomiting, diarrhea
- Pseudotumor cerebri: recurrent headaches, blurred vision



# Assess Medical Risk: Review of Systems

- Obstructive Sleep Apnea: snoring, daytime sleepiness, nocturnal enuresis, restless sleep, pauses in breathing (obesity hypoventilation syndrome)
- Asthma: shortness of breath with and without exercise (may also reflect poor physical conditioning)



# Assess Medical Risk: Review of Systems

- Stress on joints from weight: foot pain
- Slipped capital femoral epiphysis: hip, knee pain
- Blount's disease: bowing of legs, usually no knee pain



# Assess Medical Risk: Review of Systems

Nonalcoholic fatty liver disease, gastroesophageal reflux disease, constipation, gallstones : abdominal pain



# Assess Medical Risk: Review of Systems

- Polycystic Ovary Syndrome: irregular menses (<9 cycles per year), primary amenorrhea, acne, hirsutism
- Diabetes: polyuria, polydypsia, weight loss



# Measure BMI Annually

Identifying the problem is the key to solving the problem!



# Body Mass Index

- Measure of body weight adjusted for height
- BMI correlates with body fat
- Associated with health risk: mainly cardiovascular risk factors such as elevated cholesterol, insulin, and high blood pressure



# Measure BMI Annually: 2-18 years

- BMI (English): [weight (lb) ÷height (in)$^2$] x 703
- BMI (metric): [weight (kg) ÷height (m)$^2$]
- Calculation tools: www.cdc.gov/.../bmi/adult_bmi/...bmi_calculator/bmi_calculator.htm... or www.nhlbisupport.com/bmi/



# Body Mass Index

- Healthy weight: 5-84%
- Overweight: 85-94%
- Obesity: 95-98% , or BMI≥30 kg/$m^2$
- Severe obesity: ≥ 99%



# Terms used when speaking with families

- Avoid stigmatizing terms such as fat, obese
- More neutral terms: unhealthy weight, excess weight, elevated BMI, overweight, increased risk for diabetes & heart disease
- Visual explanation with BMI location on growth chart



# Physical Examination: Blood Pressure

- Use a cuff large enough to cover 80% of the arm
- Diagnose hypertension using NHLBI tables which indicates norms according to gender, age, and height at:
- http://www.nhlbi.nih.gov/health/prof/heart/hbp/hbp_ped.htm

**Blood Pressure 95% by Age, Sex and Height %**

| AGE | BOYS HEIGHT % | | GIRLS HEIGHT % | |
|---|---|---|---|---|
| | **50%** | **90%** | **50%** | **90%** |
| **2 Yr** | 106/61 | 109/63 | 105/63 | 108/65 |
| **5 Yr** | 112/72 | 115/74 | 110/72 | 112/73 |
| **8 Yr** | 116/78 | 119/79 | 115/76 | 118/78 |
| **11 Yr** | 121/80 | 124/82 | 121/79 | 123/81 |
| **14 Yr** | 128/82 | 132/84 | 126/82 | 129/84 |
| **17 Yr** | 136/87 | 139/88 | 129/84 | 131/85 |

Pediatrics Vol. 114 No. 2 August 2004 pp. 555-576



# Physical Examination: Blood Pressure

- Hypertension if systolic or diastolic blood pressure is >95% for age and gender at 3 separate visits
- Consider ambulatory blood pressure monitoring to determine true hypertension
- Measure blood pressure annually for children 3 and older



# Physical Exam Red Flags

- Vital Signs: hypertension
- Anthropometric measurements: Short stature and obesity (endocrine or genetic disorder)
- Dysmorphic features (genetic disorders including Prader-Willi syndrome)



# Physical Exam Red Flags

Eyes: papilledema, CN VI paralysis (pseudotumor cerebri)

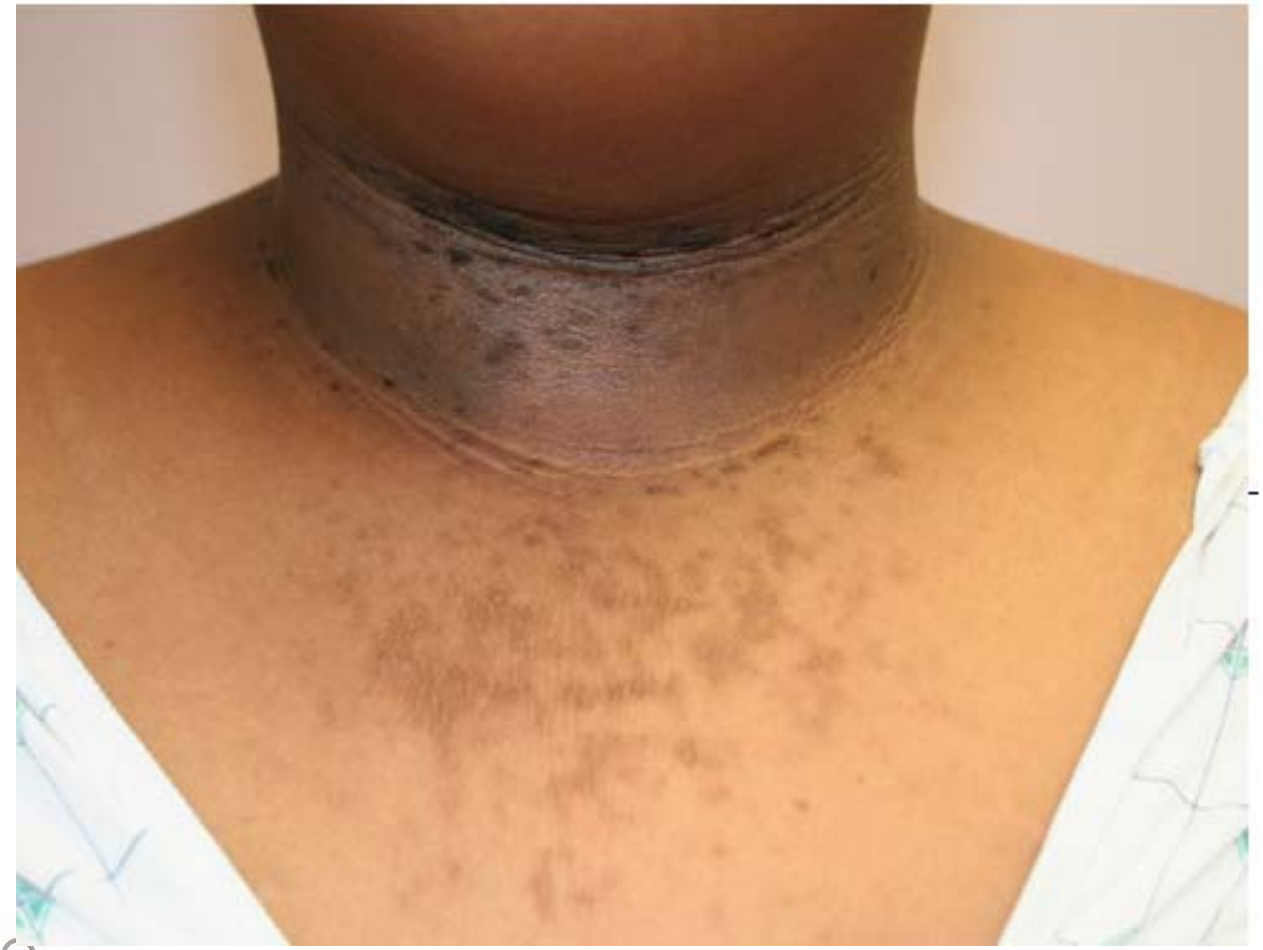


# Physical Exam Red Flags

- Skin: Acanthosis Nigricans, hirsutism, severe acne, purple striae (insulin resistance, PCOS, Cushing syndrome)
- Neck: goiter (hypothyroidism)



# Acanthosis Nigricans





# Physical Exam Red Flags

- Throat: enlarged tonsils (obstructive sleep apnea)
- Chest: wheezing (asthma)



# Physical Exam Red Flags

Abdomen: tenderness, hepatomegaly (GERD, NAFDL, gallstones)

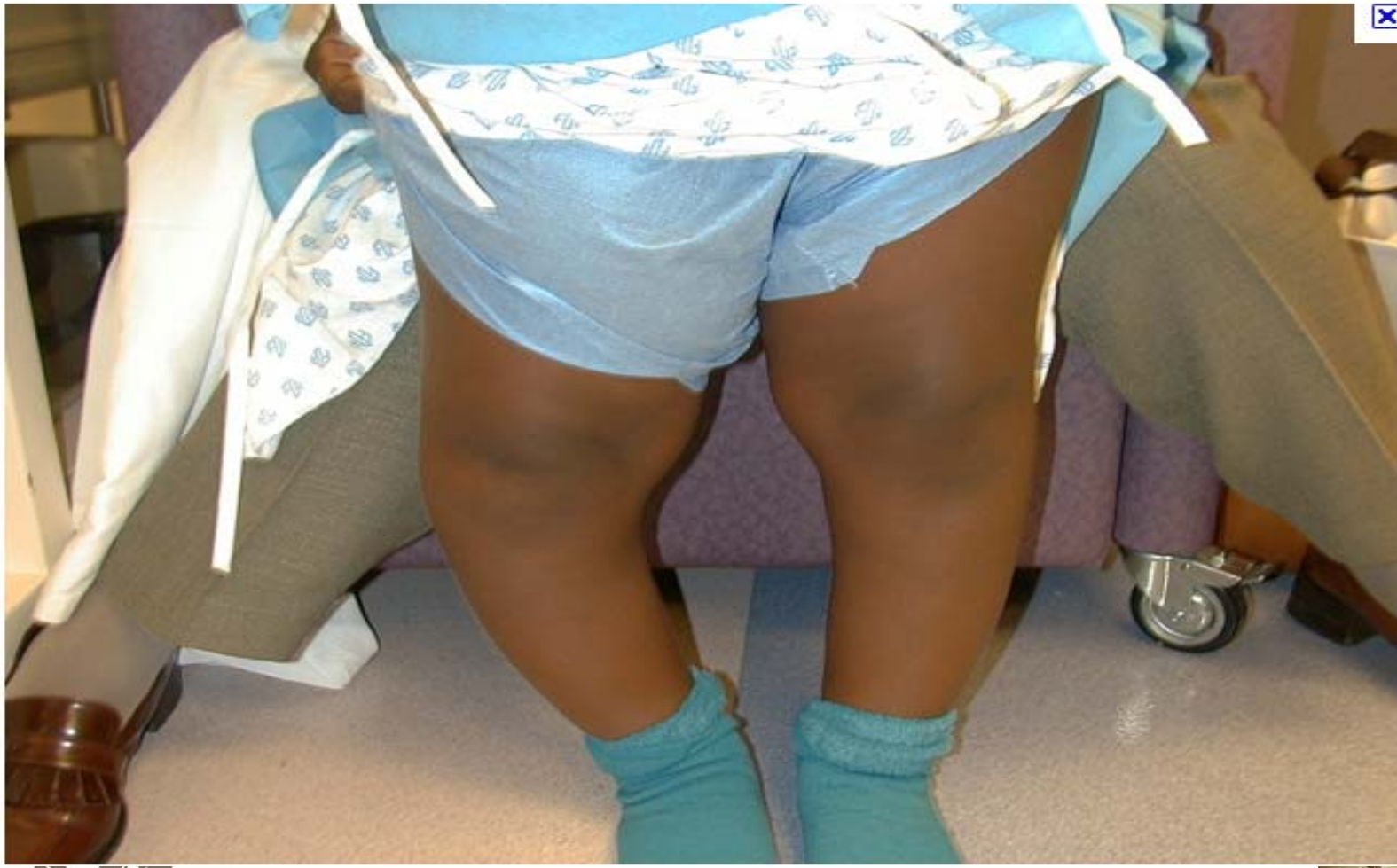


# Physical Exam Red Flags

Extremities: limited range of motion of hip, marked or asymmetric genu varus, abnormal gait (SCFE, Blount's), lower leg bowing (Blount's disease)



# Blount's disease



# BMI between 85% to 94%

- Do not use visual determination of health risk
- Review medical and family history for risk factors
- BMI trajectory
- Review diet and activity risk factors

Obesity Management. October 2008, 4(5): 236-241



# Laboratory Testing: BMI≥85%

- Fasting lipid panel testing
- If risk factors, also obtain ALT, AST, fasting glucose every 2 years for children ≥10 years old



# Laboratory Testing: BMI ≥ 95%

- Fasting lipid panel
- Regardless of risk factors, fasting glucose, ALT, AST, every 2 years for children ≥ 10 years old
- Other tests as indicated by health risks



# Prevention Counseling

- Reflect on parental understanding, concern, and willingness to make change
- Provide information, suggestions
- Set achievable goals and assess confidence in making changes
- Summarize plan and schedule a follow up



# Consistent Evidence-based Message

**Dietary Intake**

- Breastfeeding for the first 12 months or longer
- Limit or eliminate consumption of sugar-sweetened beverages
- Eat the recommended quantities of fruits and vegetables



# Consistent Evidence-based Message

**Eating Behaviors**

- Eat breakfast every day
- Limit eating out, especially at fast food restaurants
- Have regular family meals
- Limit portion sizes
- Permit younger children to self-regulate with appropriate choices



# Portion Size

## Portion Size Tips

Portion size is important! Measuring food portions makes it easier for your child to grow while staying at a healthy weight.

To measure portion size exactly, use measuring cups and spoons or a food scale. When these tools aren't available, here are some simple tips to estimate portions:

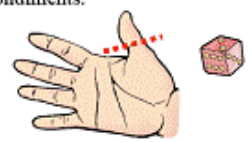
**Palm of hand or deck of cards = 3 ounces meat**
Use for cooked chicken, beef, pork, fish, and seafood.

**Fist or cupped hand = 1 cup**
Use for cereal, pasta, rice, fruit, and vegetables.

**Tennis ball = 1 medium piece of fruit**
Use for whole pieces of raw fruit.

**Golf ball = 2 tablespoons**
Use for peanut butter, jelly, ketchup, barbecue sauce, dipping sauces, and condiments.

**Thumb tip or 1 dice cube = 1 teaspoon**
Use for butter, margarine, sugar, honey, or condiments.



**1 handful = 1 ounce nuts/candy**
**2 handfuls = 1 ounce snacks**
Use for nuts, small candies, chips, pretzels, and other snack foods.



# Consistent Evidence-based Message

**Physical Activity**

- Limit television and other screen time to no more than 2 hours/day
- Remove television and other screens from children's bedrooms
- Moderate to vigorous physical activity for at least 60 minutes a day



# Strong Key Messages

**5 2 1 0**

| | |
|---|---|
| **5** | Eat at least 5 fruits and vegetables on most days. |
| **2** | Cut screen time to 2 hours or less daily. |
| **1** | Participate in at least 1 hour or more of moderate physical activity every day & 20 minutes of vigorous activity at least 3 times a week. |
| **0** | Reduce soda and sugar-sweetened beverages. Instead, drink water and 3-4 servings of fat free/skim or 1% milk. |



# Empathize/Elicit

Reflect

- What is your understanding?
- What have you heard about?
- What do your know about?



# Provide

- Advice or information
- Choices of options
- Some of what I may say may differ from what you have heard



# Elicit

- What do you make of that?
- Where does that leave you?



# Prevention Plus: Stage 1

- BMI ≥85-94% with risk factors and BMI≥95%
- Frequent visits with health professional trained in pediatric management
- Consider individual or group visit
- Weight maintenance



# Weight Goals: 2-5 years old

- 85-94% with no risk factors: weight velocity maintenance
- 85-94% with risk factors: weight maintenance or slow weight gain with resultant decrease in BMI
- ≥95%: weight maintenance or weight loss of up to a pound a month



# Weight goals: 6-11 years old

- 85-94% with no health risks: weight velocity maintenance
- 85-94% with risk factors:  weight maintenance or slow weight gain with resultant decrease in BMI
- 95-99%: gradual weight loss (1 lb per month)
- >99%: weight loss (2 lb/week)



# Weight Goals: 12-18 years old

- 85-94% with no health risk: weight velocity maintenance
- 85-94% with health risks: weight maintenance or gradual weight loss
- 95% to 99%: weight loss (2 lbs/week)
- >99%: weight loss (2 lb/week)



# Overcoming Challenges

- **Lack of Patient Motivation & Provider Skills**
  - Empathize/Elicit - Provide - Elicit
  - Motivational Interviewing
- **Not Enough Time**
  - Office Systems and Tools
  - Team Based Care
- **No Reimbursement**
  - Coding Strategies
  - Advocacy

Pediatrics Vol. 116 No. 1 July 2005 pp. 238-239



# ICD-9 Codes for BMI Assessment


- 278.0 Obesity
- 278.03 Overweight
- 278.01 Severe obesity
- V85.51 Body Mass Index, pediatric, less than 5th percentile for age
- V85.52 Body Mass Index, pediatric, 5th percentile to less than 85th percentile for age
- V85.53 Body Mass Index, pediatric, 85th percentile to less than 95th percentile for age
- V85.54 Body Mass Index, pediatric, greater than or equal to 95th percentile for age



# ICD-9 Codes for Weight Associated Conditions

**Digestive System**

- 530.81 Esophageal reflux
- 564.00 Constipation, unspecified
- 571.8 Other chronic nonalcoholic liver disease

**Endocrine, Nutritional, Metabolic**

- 244.9 Unspecified hypothyroidism
- 250.00 Diabetes mellitus without mention of complication, type II or unspecified type
- 272.0 Pure hypercholesterolemia
- 272.1 Pure hyperglyceridemia
- 272.2 Mixed hyperlipidemia
- 256.4 Polycystic ovaries



# ICD-9 Codes for Weight Associated Conditions

**Nervous System and Sense Organs**

- 780.50 Sleep disturbance, unspecified
- 327.23 Obstructive sleep apnea
- 348.2 Benign intracranial hypertension

**Skin and Subcutaneous Tissue**

- 701.2 Acquired Acanthosis Nigricans



# Coding for extra time providing obesity management at well-child visits

- If significant time & counseling provided & documented above & beyond "routine" well-child visit- code & bill for it!
  - Does documentation support separate service?
- Add appropriate E&M (99212-99215) with -25 modifier-
  - link to obesity diagnosis ICD-9 code
  - -25 = separate service provided on same DOS
- Can code *based on time if >50% MD/NP time spent in patient/family counseling*
  - Established patients:
    - 99212 = 10 minutes
    - 99213 = 15 minutes
    - 99214 = 25 minutes
    - 99215 = 40 minutes
  - *Payer recognition/reimbursement varies- added co-pays may apply…



# Questions