Management of Childhood Overweight/Obesity

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Objectives

- Identify evidence based practices for management of childhood overweight/obesity
- Identify comorbidities associated with childhood obesity
- Discuss strategies related to dietary management of childhood overweight/obesity

Financial Disclosure

- Grant from Walmart to provide supportive tools for the BMI Diagnostic clinic and patients
- I still have to pay for my groceries
National Survey Results
The public perceives healthcare providers as a key partner in addressing obesity

<table>
<thead>
<tr>
<th></th>
<th>Role in Fighting Obes</th>
<th>Role in Fighting Obes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare Providers</td>
<td>74%</td>
<td>26%</td>
</tr>
<tr>
<td>Schools</td>
<td>65%</td>
<td>35%</td>
</tr>
<tr>
<td>Conveniences</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>Employers</td>
<td>25%</td>
<td>75%</td>
</tr>
</tbody>
</table>

Management of Childhood Obesity

- Discuss 5-2-1-0
- Obtain Accurate Height and Weight
- Measure BP and BP percentile
- Calculate BMI and BMI percentile
- Identify Weight Classification
- Screen for Complications
- Make Referrals as Needed
- Discuss with Family/Provide Resources

Healthy Lifestyle Behaviors That Work for Everyone!

1. Five or more fruits or vegetables
2. Two hours or less of “recreational screen time”
3. One hour or more of “moderate to vigorous” physical activity
4. Drink less sugar—limit soda & sugar drinks
The Bottom Line

EXCEEDS

ENERGY IN

>>

ENERGY OUT

Calculating the BMI for Age

• BMI Wheel
• BMI Calculator
• BMI Formula
  – BMI (English) = weight(lb) ÷ height(in) + height(in) x 703
  – BMI (Metric) = weight(kg) ÷ height(cm) + height(cm) x 10,000

“Eat less and exercise more? That’s the most ridiculous fad diet I’ve heard of yet!”
### BMI Weight Classification Language

<table>
<thead>
<tr>
<th>BMI %</th>
<th>Medical Term</th>
<th>Language to use with Patients and Families</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;5%</td>
<td>Underweight</td>
<td>Underweight. Ask about &amp; focus on behaviors</td>
</tr>
<tr>
<td>5-84%</td>
<td>Healthy Weight</td>
<td>Healthy Weight. Ask about &amp; focus on behaviors</td>
</tr>
<tr>
<td>85-94%</td>
<td>Overweight</td>
<td>&quot;Above a healthy weight&quot;. Focus on behaviors</td>
</tr>
<tr>
<td>95-98%</td>
<td>Obese</td>
<td>&quot;Above a healthy weight!&quot;. &quot;The extra weight puts you/your child at risk for...&quot;. Focus on behaviors</td>
</tr>
<tr>
<td>&gt; than or = 99%</td>
<td>No Term</td>
<td>Severe, morbid. Same as above-more emphasis on health risks</td>
</tr>
<tr>
<td>BMI 85-94%ile No Risks</td>
<td>BMI 85-94%ile With Risks</td>
<td>BMI 95-98%ile</td>
</tr>
<tr>
<td>------------------------</td>
<td>--------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Age 2-5 Years</td>
<td>Maintain weight velocity</td>
<td>Weight maintenance or weight maintenance</td>
</tr>
<tr>
<td>Age 6-11 Years</td>
<td>Maintain weight velocity</td>
<td>Weight maintenance or gradual loss (1 pound/month)</td>
</tr>
<tr>
<td>Age 12-18 Years</td>
<td>Maintain weight velocity or weight maintenance</td>
<td>Weight loss (average is 2 pounds per week)</td>
</tr>
</tbody>
</table>

Targeted Family History

- Diabetes Mellitus*
- Obesity/Overweight*
- Ht and Wt of Parents
- High Blood Pressure*
- Heart Disease*
- Heart Attack < 60*
- High Cholesterol/TG*
- Stroke < 60*
- Thyroid Disease
- Respiratory Disease
- Liver/GB Disease
- Depression/Psych

Acanthosis Nigricans

- Skin condition characterized by dark, thick velvety skin in body folds and creases
- Usually seen on neck, armpits, groin
- Can be associated with high insulin levels
- Weight loss and decreased insulin levels may result in fading of Acanthosis Nigricans
Acanthosis Nigricans

Sleep Problems

• Obstructive Sleep Apnea
  – Snoring, pauses in breathing, restless sleep, daytime sleepiness, enuresis, with or without tonsillar hypertrophy
  – Diagnose through Polysomnography
  – Removal of Tonsils if needed
  – CPAP Therapy as needed

Respiratory Problems

• Asthma
  – SOB, exercise intolerance
  – Asthma management to maximize physical activity
  – Pulmonary Consult if indicated
Asthma & Obesity In Children

Gastrointestinal Problems

- NAFLD
  - Elevated AST/ALT levels, liver ultrasound
  - May need Gastroenterology Consult
- Gastroesophageal Reflux
- Constipation

Endocrine Disorders

- Type 2 DM or Prediabetes
  - Risks
    - Family History of DM
    - Black, Hispanic, Native American
    - Other related conditions such as Acanthosis Nigricans, PCOS, & Cardiovascular risk factors
  - Polyuria, Polydypsia (FG, HA1C)
  - Endocrinology Consult as needed
Endocrine Disorders

• Polycystic Ovary Syndrome (PCOS)
  – Infrequent menses
  – Hirsutism, excessive acne, Acanthosis Nigricans
  – May need reproductive hormone labs (usually requires interpretation by a subspecialist)
  – Often have insulin resistance, Type 2 DM, or metabolic syndrome

Cardiovascular Risk Factors

• High Blood Pressure
  – Use correct cuff size
  – Use tables for age, gender and height %
    • Multiple readings above the 90th% to the 95th% may be indicative of pre-hypertension
    • Multiple readings above the 95th% may be indicative of hypertension
  – May need more evaluation-24 Hour Ambulatory BP monitoring

Cardiovascular Risk Factors

• Lipid Level Abnormalities
  – Common in overweight children
  – Fasting lipid profile in all children when BMI > or = 85th % in absence of risk factors
  – Use age and gender tables for lipid levels and family history of cardiovascular risks to identify children at risk
  – If lipid levels are high even after dietary interventions may need a Lipid Specialist Referral
Depression
May precede or result from obesity

- Screening
  - Children’s Depression Inventory (CDI) or other tools
  - Symptoms
    - (flat affect, anxiety, body dissatisfaction, emotional eating, fatigue, difficulty sleeping, change in activities, crying, self-injury—cutting)
    - Binge eating, emotional and loss of control eating with/without purging require evaluation for eating disorder
      - http://www.arcofky.org/compcare/

Orthopedic Problems

- Blount Disease
  - Bowlegs
- Slipped Capital Femoral Epiphysis
  - Hip or knee pain
- If suspected will need X-ray and Orthopedic Referral

Resources

- Registered Dieticians
  - County Health Dept.
  - Hospitals & Private Practice
- County Cooperative Extension Agency
  - http://www.ca.uky.edu/county/
“Because of the increasing rates of obesity, unhealthy eating habits, and physical inactivity, we may see the first generation that will be less healthy and have a shorter life expectancy than their parents”

Richard H. Carmona, MD, MPH, FACS
Surgeon General
U.S. Dept of Health and Human Services, 2004

Downsizing a Super Sized Problem: Childhood Obesity

Linda Brooks MS, RD, CDE
Pediatric Dietitian
Kentucky Clinic
Albert Einstein defined insanity as doing the same thing over and over again and expecting a different result...

“Good nutrition should be ranked right up there with car seats and immunizations.”

Dr. Laura Jana and Dr. Jennifer Shu (Authors of ‘Food Fights’)

Common Problems Encountered in BMI Clinic

• No breakfast
• Sweetened drinks
• Ranch dressing
• Multiple servings of starchy vegetables
• Limited acceptance of non-starchy vegetables
• Disordered eating
How to Manage Weight Without Being Hungry

Eat More Fruits and Vegetables

- Give specific goals
- Make it fun
- Children may need to be exposed to new foods 10-15 times
- Refusing to taste – don’t let them see you sweat

Make Specific Goals

<table>
<thead>
<tr>
<th>Girls</th>
<th>Fruits</th>
<th>Vegetables</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-3</td>
<td>1 cup</td>
<td>1 cup</td>
</tr>
<tr>
<td>4-6</td>
<td>1 cup</td>
<td>1 1/2 cup</td>
</tr>
<tr>
<td>9-12</td>
<td>1 1/2 cup</td>
<td>2 cups</td>
</tr>
<tr>
<td>14-18</td>
<td>2 cups</td>
<td>3 cups</td>
</tr>
</tbody>
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<tr>
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</table>

These amounts are for less active people. Visit these charts to see the amounts needed by more active people.
Make it Fun

- Shop together
- Include children in food preparation when feasible
- Be creative with food

Healthy eating needs to be a family affair

Reduce Amount of Sugar and Salt in Child’s Diet

- When children are small parents have the opportunity to maximize nutrition
- Amount of Sugar Consumed Yearly
Portion Distortion
Just one example of the ‘super size’ syndrome

Can – 12 oz
Glass Bottle – 10 oz
Plastic Bottle – 20 oz

Summary
The key to prevention is consistent messages early and often!