Objectives:

- Discuss makeup of an interdisciplinary medical weight management clinic
- Express the importance of addressing weight concerns in children and adolescents
- Describe the process of nutrition assessment for overweight and obese children and adolescents
- Offer tools and helpful tips to provide families when addressing lifestyle change and common weight management issues in children and teens
- Share nutrition guidelines for bariatric surgery, a tool in weight management for the severely obese adolescent patient
- Outline key strategies for effective nutrition counseling
Objectives:

• Learn about emotional and behavioral difficulties that are often comorbid with obesity
• Learn empirically-based interventions to improve adherence to medical recommendations for healthy weight
• Learn strategies to screen for and treat mental health difficulties in children and adolescents with obesity

Importance of Addressing Obesity in Children and Teens

**Short-term Effects:**
• Pre-diabetes, diabetes
• High cholesterol
• High Blood pressure
• Sleep Apnea
• Social and psychological problems

**Long-term Effects:**
• More likely to be obese as adults
• Heart Disease
• Stroke
• Several types of cancer
• Osteoarthritis
Psychosocial problems in pediatric obesity

- Poor health-related quality of life
  - Impairments in daily functioning similar to those in oncology and significantly more than normal-weight controls

- Inverse relationship between BMI and self-concept, self-worth, body dissatisfaction

- Mixed results in studies regarding obesity and anxiety

- 25% of overweight boys and 41% of overweight girls in the top quartile in a measure of depressive symptoms (Project EAT, Crow et al. 2006)

Psychosocial problems in pediatric obesity

- Studies also show mixed results in rates of depression in obese children compared to normal-weight children
  - Likely due to inconsistent measurement strategies and criteria

- Social functioning of overweight youths more deficient than that of normal-weight controls
  - Higher rates of overt victimization in boys and relational victimization in girls
  - Could explain the overall poor psychosocial outcomes
I.D.E.A.L. Weight Management Clinic
Improving Diet, Energy and Activity for Life (IDEAL)

• Helps children and teens successfully achieve a healthier lifestyle and reduce the risk of complications related to obesity.
• The foundation of the clinic’s care is education for the family.
  • They are taught how small changes in behavior can have a positive impact on health
• We serve children and adolescents, ages 2 to 18, classified as obese with a Body Mass Index (BMI) at or above the 95th percentile in DC Metro area.
  • In addition to the following criteria:
    - Elevated fasting cholesterol, triglyceride (TG), insulin resistance, glucose intolerance, or hypertension
    - Unable to lose weight after dietary and activity counseling by their primary care doctor, nutritionist, and/or health educator
    - Elevated liver function tests (LFT)
    - Slipped capital femoral epiphysis (SCFE) or Blount’s disease

I.D.E.A.L. Weight Management Clinic
Improving Diet, Energy and Activity for Life (IDEAL)

• Visits include:
  • Medical management of weight-related health issues by physicians
  • Weight management nutrition counseling by dietitians and health educator
  • Possible visit with psychologist and physical therapist
• Families have access to experts from other divisions at Children’s National Health System, including:
  • Cardiology
  • Sleep Medicine
  • Endocrinology
  • Surgery
• Bariatric surgery
  • Laparoscopic sleeve gastrectomy
  • Referral guidelines
    • BMI >35 with co-morbidities, or a BMI >40 without
    • History of obesity for at least 3 years that includes at least 6 months of documented attempts at diet and medical management of obesity
  • Laboratory and diagnostic tests, as well as psychological evaluation
  • Pre-operative and post-operative eating patterns
### Role of the RD in Weight Management Recommendations

#### Staged Approach to Treatment

<table>
<thead>
<tr>
<th>Treatment Stage</th>
<th>Location</th>
<th>Patients</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prevention</strong></td>
<td>Primary Care</td>
<td>All patients</td>
<td>• Breastfeeding, family meals, physical activity, limited screen time, yearly BMI monitoring</td>
</tr>
<tr>
<td><strong>Stage 1</strong></td>
<td>Primary Care</td>
<td>BMI 85–94%ile</td>
<td>• 5+ servings of fruits and vegetables/day&lt;br&gt;• &lt; 2 hours screen time, or more of physical activity&lt;br&gt;• Reduce/eliminate sugary drinks&lt;br&gt;• Family-based change (3 meals/d, family meals, limit dining out)</td>
</tr>
<tr>
<td><strong>Stage 2</strong></td>
<td>Office-based RD/RN/MD trained in motivational interviewing / behavioral counseling</td>
<td>Stage 1 not effective, BMI 95-98%ile</td>
<td>Develop plan together with pt / family&lt;br&gt;• More structured eating schedule&lt;br&gt;• Balanced macronutrient diet&lt;br&gt;• Reduced screen time&lt;br&gt;• Increased activity&lt;br&gt;• Self-monitoring</td>
</tr>
<tr>
<td><strong>Stage 3</strong></td>
<td>Pediatric Weight Management Center (I.D.E.A.L)</td>
<td>3 - 6 months of structured weight loss effective</td>
<td>• Structured behavioral program (food monitoring, goal setting)&lt;br&gt;• Home environment improvements</td>
</tr>
<tr>
<td><strong>Stage 4</strong></td>
<td>Tertiary Care</td>
<td>BMI ≥ 99%ile, with comorbidities / lack of success with other stages</td>
<td>• Continued lifestyle counseling&lt;br&gt;• Consideration of more aggressive therapies, such as meal replacements, pharmacotherapy, and bariatric surgery</td>
</tr>
</tbody>
</table>
Nutrition Assessment: BMI

- BMI: \[
\frac{\text{weight (kg)}}{\text{height (cm)}} \times \frac{\text{height (cm)}}{10,000}
\]
- Plot BMI on CDC BMI growth chart for children > age 2
- Weight category diagnoses using BMI percentile
  - 85-94th %ile Overweight
  - ≥ 95th %ile Obesity
  - ≥ 99th %ile Severe Obesity
- Recognize limitations of BMI

Nutrition Assessment: BMI

- Use neutral terms:
  - elevated BMI, unhealthy weight, excess weight, increased risk for diabetes and heart disease
- Use visual explanation with BMI location on growth chart
- Avoid negative terms:
  - Excess fat, unhealthy BMI, obesity, unhealthy body weight, large size, weight problem, fatness, heaviness,
- Keep the focus on healthy habits rather than the numbers
**Nutrition Assessment: BMI**

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Weight Loss Targets from Expert Committee Recommendations

<table>
<thead>
<tr>
<th>Age Group</th>
<th>BMI 85-94%ile No Risks</th>
<th>BMI 85-94%ile With Risks</th>
<th>BMI 95-98%ile</th>
<th>BMI ≥ 99%ile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age 2-5 years</td>
<td>Maintain weight velocity</td>
<td>Decrease weight velocity or weight maintenance</td>
<td>Weight maintenance</td>
<td>Gradual weight loss of up to 1 pound a month if BMI is very high (&gt;23 or 22 kg/m²)</td>
</tr>
<tr>
<td>Age 6-11 years</td>
<td>Maintain weight velocity</td>
<td>Decrease weight velocity or weight maintenance</td>
<td>Weight maintenance or gradual loss (0.5 kg/mo)</td>
<td>Weight loss (0.5-1 kg/wk)*</td>
</tr>
<tr>
<td>Age 12-18 years</td>
<td>Maintain weight velocity. After linear growth complete, maintain weight</td>
<td>Decrease weight velocity or weight maintenance</td>
<td>Weight loss (0.5-1 kg/wk)*</td>
<td>Weight loss (0.5-1 kg/wk)*</td>
</tr>
</tbody>
</table>

* Excessive weight loss should be evaluated for high risk behaviors.
### Nutrition Assessment: Screening

- Parental obesity and family medical history
- Weight-related medical problems
- Laboratory assessment, blood pressure
- Disordered thoughts or behaviors around weight / eating
  - Monitor for signs throughout discussion
    - Extreme weight loss goals
    - Excessive food restriction
    - Loss of control around food
    - Black-and-white thinking about foods
    - Compensatory behaviors after eating

### Nutrition Counseling: Setting the Stage for Success

- Key messages for parents / caregivers:
  - Act, rather than talk
    - Be a good role model for healthy behaviors
    - Begin to make family-wide lifestyle changes by creating a healthier environment
      - Serve more balanced family meals and snacks.
      - Turn off the TVs, computers, tablets, etc.
      - Spend fun, active time together.
      - Make it easy for child to make healthy shifts.
  - Be a united front
    - Make sure that parents and any other important relatives are on the same page.
Family-based Treatment

- Family involvement in treatment significant predictor of short term and long term success
  - Parental modeling, caregiver food choices and eating habits, perception of health status
  - Motivation, readiness, expectations

- Several family factors important predictors
  - Parenting stress, parenting, parent-child relationship
  - Parental psychopathology
  - Socio-economic and cultural factors

- EMPOWER, Helping HAND

Nutrition Counseling: Possible Target Behaviors

- Meal pattern
- Dining out
- Sugar-sweetened beverages, juices
- Fruits and Vegetables
- Portion sizes
- Physical activity
- Screen time
Possible Target Behaviors: Meal Pattern

- Teach kids to fuel their engine
- Talk about the difference between meals and snacks
- 3 meals per day: breakfast, lunch and dinner
  - Healthy meals start with more fruits and vegetables and smaller portions of protein and grain
  - Make milk a beverage with your meal or add fat-free or low-fat dairy products
- 1-2 healthy snacks per day
  - Include at least two food groups
- 3-4 hour spacing between meals and snacks

Working with Different Age Groups

- Young Children
  - Promote the development of language, cognition, and self-help behaviors
  - crafts, pictures, games, visuals
- Middle school age
  - Technology
  - Relate to athletics and pop culture
- High school age
  - Motivational interviewing
  - Empower them; provide the tools
Motivational Interviewing

- Patient centered, non-judgmental, and empathic
- Reduce ambivalence and increase readiness to change
- Elicit adolescent-determined reasons for change
- Directly related to adherence to recommendations and participation in other forms of treatment

Nutrition Counseling: Motivational Interviewing

Elicit – Provide – Elicit

- Empathize/Elicit
  - “Your child’s height and weight may put him/her at increased risk for developing diabetes and heart disease at a very early age.”
  - “What do you make of this?”
  - “Would you be interested in talking more about ways to reduce your child’s risk?”

- Provide
  - “Some different ways to reduce your child’s risk are...”
  - “Do any of these seem like something your family could work on or do you have other ideas?”

- Elicit
  - “Where does that leave you?”
  - “What might you need to be successful?”

Source: http://www2.aap.org/obesity/pdf/COANImplementationGuide62607FINAL.pdf
Motivational Interviewing

- Sample Questions:
  - If you could change three things about yourself (inside or out), what would they be?
  - What are the things you like best about yourself?
  - Readiness to change
    - How do you feel about changing your eating or exercise habits?
  - Importance of change
    - What are the good things about eating healthier? What are some of the less good things about eating healthier?
  - Building confidence
    - How confident do you feel about these changes? What would make you feel more confident?
- Barriers
  - What might stand in your way?

Nutrition Counseling

- Assess confidence in family’s ability to achieve goals
- Discuss strategies to increase likelihood of success
- Modify goals as necessary
Behavior Modification

- Typically focus on modifying dietary intake and increasing physical activities
- Behavioral contract/reward system
  - Antecedents and consequences of behaviors
  - Identify a target behavior and set rewards for achieving it
- Includes monitoring, goal setting, positive control, and parenting strategies
- Most empirical support in short- and long-term efficacy
- May also include cognitive restructuring of maladaptive thoughts and building skills for problems-solving

Sleeve Gastrectomy: Nutrition Guidelines

<table>
<thead>
<tr>
<th>Pre-Operative Diet (before surgery)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diet</td>
<td>Time Period</td>
</tr>
<tr>
<td>Liquid Diet with Protein Supplements/Shakes</td>
<td>2 Weeks Prior to Surgery</td>
</tr>
</tbody>
</table>

Start Date: ___________
### Sleeve Gastrectomy: Nutrition Guidelines

<table>
<thead>
<tr>
<th>Stage</th>
<th>Diet</th>
<th>Start Date</th>
<th>Duration (Approximate)</th>
<th>Protein (g) Per Day</th>
<th>Fluid (fl. oz.) Per Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1:</td>
<td>Clear Liquids</td>
<td>1 day after surgery</td>
<td>N/A</td>
<td>24-48 (6-8 oz/hr)</td>
<td></td>
</tr>
<tr>
<td>Stage 2:</td>
<td>Full Liquids</td>
<td>3-4 days after surgery</td>
<td>3 weeks</td>
<td>50-60</td>
<td>32-48 first 1-2 weeks</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>64-90 thereafter</td>
</tr>
<tr>
<td>Stage 3:</td>
<td>Pureed</td>
<td>4 weeks after surgery</td>
<td>2 weeks or more (dependent on diet tolerance)</td>
<td>60</td>
<td>64-90</td>
</tr>
<tr>
<td>Stage 4:</td>
<td>Soft</td>
<td>5-6 weeks after surgery</td>
<td>2 weeks or more (dependent on diet tolerance)</td>
<td>60</td>
<td>64-90</td>
</tr>
<tr>
<td></td>
<td>Gradually Introduce</td>
<td>As tolerated</td>
<td>As tolerated</td>
<td>60</td>
<td>64-90</td>
</tr>
<tr>
<td></td>
<td>More Food Choices</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Healthy Lifestyle</td>
<td>As tolerated</td>
<td>For life</td>
<td>At least 60</td>
<td>64-90</td>
</tr>
</tbody>
</table>

### Pre-bariatric Surgery Psychological Evaluation

- Assess treatment-readiness
  - Knowledge of necessity, pre-surgery requirements, treatment procedure, post-treatment recovery and long term requirements
  - Cognitive abilities

- Assess adherence history and potential barriers to adherence

- Treatment expectations and goals

- Motivation

- Comorbid psychological disorders- screening and treatment recommendations

- Empirically validated measures
Screening and Treatment of Psychosocial problems

- Psychosocial screening and assessment
  - Behavior Assessment Scale for Children
  - Child Behavior Checklist, Youth Self Report
  - PHQ-9, SCARED, CDI, DBDRS, Vanderbilt ADHD Rating Scale
  - PedsQL
  - Cognitive abilities (WASI-II)
  - Medical Adherence Measures, AMBS/PMBS
  - Parenting Stress Index
  - Family Environment Scale

Screening and Treatment of Psychosocial problems

- Treating comorbid psychological disorders
  - Cognitive Behavioral Therapy
    - Behavioral Activation
    - Exposure-based therapies
  - Dialectical Behavior Therapy
    - Mindfulness
    - Emotion regulation
  - Acceptance and Commitment Therapy
  - Parent Management Training
  - Sleep hygiene
  - Referrals and recommendations
Thank You!

Questions?

References

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- United States Department of Agriculture. USDA ChooseMyPlate Web site. Available at: choosemyplate.gov
- Children’s National Medical Center Website. Available at: www.childrensnational.org
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- Centers for Disease Control and Preventions. CDC Clinical Growth Charts. Available at: http://www.cdc.gov/growthcharts/clinical_charts.htm