Incorporating OPTIFAST® for Teens into Your Medical Weight Management Practice

October 2nd, 12:30pm EST
Objectives

- Help existing OPTIFAST® practitioners understand the scope of treating this population
- Review the OPTIFAST® for Teens Program
- Q&A
Poll Question

- How comfortable are you with treating adolescents at this time?
  - 1. very comfortable
  - 2. somewhat comfortable
  - 3. neutral
  - 4. somewhat uncomfortable
  - 5. very uncomfortable
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- Director, Brenner FIT (Families In Training), Brenner Children's Hospital
Scope of Adolescent Obesity

- Rate of adolescent obesity has tripled over the past 30 years\(^2\)
- Percentage of obese adolescents aged 12–19 increased from 5% in 1980 to 18% in 2010\(^2,3\)
- More than one third of children and adolescents are estimated to be overweight or obese\(^2\)
- Obese teens are at increased risk for: type 2 diabetes, metabolic syndrome, hypertension, hyperlipidemia, orthopedic problems, and sleep apnea.\(^1\)
- Obese adolescents face social and psychosocial problems such as stigmatization, low self-esteem, depression, bullying, and discrimination more often than other adolescents.\(^1,4,5\)
- Adolescents who are obese are likely to be obese as adults\(^1\)

1. [www.cdc.gov/healthyyouth/obesity/facts.htm](http://www.cdc.gov/healthyyouth/obesity/facts.htm)
Current Treatment of Adolescent Obesity

- Diet and lifestyle weight management programs
- Bariatric surgery
  - Gastric bypass is considered “a safe and effective option for extremely obese adolescents”\(^1\)
  - Sleeve gastrectomy has been cited as perhaps “the optimal non-device surgical option for this select group of adolescent patients”\(^2\)
- As surgery grows in popularity for severe obesity, it makes sense to have an intensive medical weight management option as a non-surgical alternative.

Medical Considerations of the Adolescent Patient

Co-Morbidities

- Family History
- Diabetes and Insulin Resistance
- CVD/Lipids
- Hypertension
- Fatty Liver
- Sleep Apnea
- Ortho: SCFE, lower extremity pain

Endo: PCOS, Thyroid, Cushings

Genetics
Medical Considerations: Family History

- **Diabetes**
  - 3 risk factors:
    - Family history
    - Obesity
    - Low SES

- **CVD: Hyperlipidemias and Hypertension**
  - First degree-relatives:
    - stroke, early heart attack (< 50)
Medical Considerations: Diabetes

- **History/ROS**
  - Polydypsia and polyuria
  - Typically asymptomatic

- **Exam**
  - Acanthosis nigricans: neck, axilla, skin tags

- **When and who**
  - Overweight/obese, ≥ 10 years old, and any 2 of the following
    - Family history in 1st or 2nd degree relative
    - Racial/ethnic minority
    - Signs/symptoms: acanthosis, HTN, dyslipidemia, PCOS

- **Evaluation**
  - Fasting glucose and hemoglobin A1c
  - Less often: fasting insulin, OGTT
Medical Considerations: Diabetes

- **Increased risk for diabetes (pre-diabetes)**
  - Impaired Fasting Glucose (IFG)
    - Fasting glucose 100-125 (WHO 110), or...
  - Impaired Glucose Tolerance (IGT)
    - OGTT (75g), 2 hour glucose 140-199, or...
  - Hgb A1C 5.7-6.4%
    - 5.5-6%: five year incidence of 9-25%
    - 6-6.5%: five year risk of diabetes 25-50%, RR 20x
  - “Relatively high risk for the future… diabetes”

- **Diabetes**
  - Fasting glucose ≥ 126, or...
  - Hgb A1C ≥ 6.5%, or...
  - OGTT (75g), 2 hour glucose ≥ 200, or...
  - In patient with symptoms, random glucose ≥200
Medical Considerations: CVD: Lipids

- **History/ROS/Exam**
  - Typically asymptomatic
  - Family History

- **When and who**
  - ≥ 10 years old or <10 if high risk (FHx, DM, HTN, Obesity)
  - Overweight and obese children

- **Evaluation**
  - Lipid profile/panel
Medical Considerations: CVD: Hypertension

- **History/ROS**
  - Headache
  - Typically asymptomatic

- **Exam**
  - Blood pressure - use correct cuff size
  - USE TABLES - age, gender, height
  - If elevated, let rest for 10-15 mins and re-check at that visit
  - MANUAL
  - If still elevated, schedule f/u visit in 1-2 weeks and re-check
### Blood Pressure Levels by Age and Height Percentile

**BOYS**

<table>
<thead>
<tr>
<th>Age (Year)</th>
<th>50th</th>
<th>90th</th>
<th>95th</th>
<th>99th</th>
<th>5th</th>
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Medical Considerations: CVD: Hypertension Classification

- Normal: < 90th percentile for age, height, gender

- Pre-hypertension: 90th – 95th percentile

- Stage 1 HTN: 95th – 99th percentile + 5 mmHg

- Stage 2 HTN: >99th percentile + 5 mmHg
Medical Considerations: CVD: Hypertension Evaluation

- Normal: < 90th percentile for age, height, gender

- Pre-hypertension: 90th – 95th percentile
  - Weight management
  - Repeat in 3-6 months:
    if persistent, consider work-up
Medical Considerations: CVD: Hypertension Evaluation

- **Stage 1 HTN:** 95th – 99th percentile + 5 mmHg
  - If elevated, rest for 10-15 mins and re-check at that visit
  - MANUAL
  - Repeat in 1-2 weeks, average all values
  - Basic work up: CBC, renal panel, U/A, Renal/Cardiac U/S, lipids, glucose
    - Refer if positive finding
    - Monitor and weight management for 3 months and re-evaluate

- **Stage 2 HTN:** >99th percentile + 5 mmHg
  - Refer to be seen within 1 week
  - Basic work up and begin treatment
NAFLD

NAFLD
Steatosis
Benign?

NASH
Steatosis
Inflammation
Moderate

Cirrhosis
Inflammation
Fibrosis
Severe
Medical Considerations: Fatty Liver

- **History/ROS/Exam**
  - Abdominal pain, RUQ
  - Fatigue, malaise
  - Hepatomegaly

- **When and who**
  - School age and lower
  - Insulin resistance, metabolic syndrome
  - Most picked up incidentally

- **Evaluation**
  - “Moderate” liver w/u: AST, ALT, CBC, bilirubin, PT, albumin (CBC, CMP, PT)
  - Monitor: refer if elevated for more than 6 months, worsening, or other abnormality found
Medical Considerations: Abdominal Pain

- Gallstones
  - RUQ pain: typically with tenderness on exam (deep inhalation and exhalation)
  - U/S

- Constipation
  - Mixed evidence on association
  - Anecdotally… there is

- GERD
Medical Considerations: Polycystic Ovaries

- History/ROS/Exam
  - Amenorrhea or Oligomenorrhea (irregular in first year after menarche): <9 menses a year
  - Hirsutism
  - Acne

- Evaluation
  - LH, FSH
  - Free Testosterone
  - DHEA-S, 17-Hydroxyprogesterone, Pregnancy
  - Pelvic U/S

- Treatment: 4-6 months weight management
  - Metformin
  - OCPs
Medical Considerations: Other Endo: Thyroid, Cushings

- **History/ROS/Exam**
  - Short, short, short
  - Height << 50th Percentile, Weight >95th

- **Evaluation**
  - Thyroid: TSH (VERY high, >10), Free T4
  - Cushing’s: 24 hour urinary free cortisol

- **Referral**

- **Exceedingly rare**

- **Gynecomastia**
  - Difficult issue
  - Coverage and treatment vary
  - Assessment: if present for > 1 year
    - Check testicle size
    - TSH, hCG, LH, Testosterone, Estradiol
Co-morbidities: Slipped Capital Femoral Epiphysis
Co-morbidities: SCFE

- **History/ROS/Exam**
  - Abnormal gait (waddling)
  - Hip or knee tenderness

- **Evaluation**
  - Flexion of knee and hip, internally and externally rotating
  - Hip x-rays (frog-leg)

- **IMMEDIATE REFERRAL**
Co-morbidities: Sleep Apnea

- **History/ROS/Exam**
  - Snoring, witnessed apneas
  - Restless sleep, enuresis
  - AM: morning sore throat/dry mouth, headaches, difficult to wake
  - *Frequent* or *regular LONG naps*
  - Excessive Daytime Sleepiness: naps in car
  - *Younger: ADHD symptoms*

- **Evaluation**
  - Polysomnography

- **Treatment**
  - Tonsillectomy
  - CPAP
Co-morbidities: Pseudotumor cerebri

- **History/Exam/ROS**
  - Headache
  - Dizziness, nausea, vomiting, tinnitus
  - Symptoms worse with valsava or change in posture
  - Vision change
  - Papilledema

- **Evaluation**
  - LP: Elevated intracranial pressure, normal CSF
  - CT/MRI: Normal cerebral anatomy

- **Referral**
  - Dilated eye exam
  - Neurology
Co-morbidities: Pseudotumor cerebri

Papilledema

Normal
Genetic Causes of Childhood Obesity

- **Genetic Syndromes with Mental Retardation**
  - Prader-Willi Syndrome
  - Laurence-Moon-Biedl Syndrome
  - Borjeson-Forssman-Lehmann Syndrome
  - Cohen Syndrome
  - Ruvalcaba Syndrome

- **Genetic Syndromes +/- Mental Retardation**
  - Alstrom Syndrome
  - Turner's Syndrome
  - Beckwith-Wiedemann Syndrome
  - Sotos' Syndrome (cognitive delay may be present)
  - Weaver Syndrome
Genetic Causes of Childhood Obesity

- Very rare
- Usually identified at an early age
- Warning signs:
  - Thin as infant, then rapid weight gain
  - Short (ht < 50th%, wt > 95th%)
  - Developmental delay
  - Hypotonia
  - Syndromic appearance
  - Hyperphagia???
- Referral: Genetics or Behavior/Development
Poll Question

What is your primary concern about treating adolescents?

- 1. Comorbidities
- 2. Dealing with parents
- 3. Safety of weight loss
- 4. Other
- 5. I have no concerns
Protocol Highlights

- Based on 2007 Expert Committee Recommendations
- Potential need for meal replacements
- Designed to address the medical, nutritional, and behavioral needs of obese and severely obese adolescents.
  - May also be used with overweight adolescents at the discretion of the doctor
- Goal: help the adolescent safely reach and maintain a healthy weight while building healthy habits that promote adequate weight control.

Developed in conjunction with:

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Craig Johnston, PhD, Assistant Professor, Department of Pediatrics-Nutrition, Children’s Nutrition Research Center, Baylor College of Medicine
Program Components

Long-Term Weight Management

- Nutrition Education
- Behavior Change Counseling
- Medical Monitoring
- Physical Activity/Reducing Sedentary Activity
- Stimuli-Narrowing Diet including Meal Replacements
OPTIFAST® Adolescent Care Model

- Parent
- Pediatrician/Family Practitioner
- OPTIFAST Practitioner
- OPTIFAST Program

Patient
This group requires a uniquely sensitive, non-judgmental approach
- “Blame and shame”, “Fear and scare” does not work
- Carefully chosen words may help the patient feel more comfortable and supported
  - prefer terms such as “weight”, “excess weight”, “BMI”, and even “overweight” rather than “obese”, “fat”
- Important to keep the program fun
- Keep it *kid 1st and weight loss patient 2nd*
- Utilize tools that teens use to support frequent communication
  - Greater frequency of contact helps to increase the chance of success
Medical Guidelines

<table>
<thead>
<tr>
<th>Category</th>
<th>BMI Percentile</th>
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<tbody>
<tr>
<td>Obese</td>
<td>BMI at or more than the 95th percentile for age and sex</td>
</tr>
<tr>
<td>Severely obese</td>
<td>BMI more than the 99th percentile for age and sex</td>
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</tbody>
</table>

The weight loss goal should be individualized, since for some patients weight maintenance during the Program is an improvement in weight status and should be considered successful, especially if the adolescent is still growing.

The ultimate weight goal is a BMI less than the 85th percentile. However, in order to keep expectations realistic, the weight goal should be reassessed after the patient has lost 10% of his or her initial weight, as the new goal may be weight maintenance or continued weight loss.

Weight should be lost gradually at approximately 1-2 lbs per week. Weight maintenance is a victory for some teens.

BMI should be used along with other clinical information to determine the treatment plan and weight management goals.
Medical Guidelines

The Program may also be used with individuals in the 85<sup>th</sup> to 94<sup>th</sup> percentile as the likelihood of health risks increases in this category:

<table>
<thead>
<tr>
<th>BMI Percentile</th>
<th>Weight Management Goal</th>
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<tbody>
<tr>
<td>Overweight</td>
<td>BMI between the 85&lt;sup&gt;th&lt;/sup&gt; and the 94&lt;sup&gt;th&lt;/sup&gt; percentiles for age and sex</td>
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<tr>
<td></td>
<td>Depending on determination of health risk: Achieve BMI &lt;85&lt;sup&gt;th&lt;/sup&gt;% via weight maintenance with linear growth or weight loss</td>
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</table>
The OPTIFAST practitioner may ask the patient’s PCP to complete a referral form to ensure that it is safe for the patient to pursue further weight loss evaluation.

- A relationship between the OPTIFAST practitioner and PCP is established early.
- The OPTIFAST practitioner is reassured about the patient’s medical history and ability to safely participate in the Program.
- The PCP continues to provide the patient’s primary medical care and is reassured that the patient is enrolled in a credible, medically supervised weight management program.
- Behaviorally-based, medically-supervised programs may be protective against development of disordered eating.
- The release serves as a tool to build the referral relationship with pediatric offices.
Medical Assessment Recommended Guidelines

The Program Physician should conduct the following:

- Medical History, including review of prior growth charts
- Family History to include parents and grandparents, especially as it pertains to obesity-related familial medical conditions:
  - Obesity
  - Type 2 Diabetes Mellitus
  - Cardiovascular Disease, particularly with early MI (less than 50 years of age)
  - Cardiovascular Disease risk factors (hyperlipidemia and hypertension)
- Review of symptoms for weight-related problems
Accurately measure height and weight, and plot on growth charts.


Plot BMI on the appropriate CDC BMI for age and sex growth chart and determine BMI category.

- Because the 97th percentile is the highest curve on the CDC growth charts, a table may be utilized to determine the 99th percentile BMI cutoff point according to age and gender

Plot height for age on the appropriate Stature for Age chart.

- With medically supervised weight loss of 1-2 lbs a week, there is low risk of disruption to normal growth patterns
Medical Guidelines Continued

- Vitals, Clinical Data, and Laboratory Assessment
- Developmental (pubertal) Assessment
- Medication Assessment
- Substance abuse and pregnancy
Recommended Medical Monitoring Guidelines

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Schedule</th>
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<tbody>
<tr>
<td>H&amp;P/Screening w/EKG</td>
<td>1st visit</td>
</tr>
<tr>
<td>Informed Consent</td>
<td>1st visit</td>
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<tr>
<td>Height</td>
<td>1st visit, then q 4 weeks thereafter</td>
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<tr>
<td>Weight</td>
<td>Every visit</td>
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<tr>
<td>Blood Pressure</td>
<td>Every visit</td>
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<tr>
<td>Full Chemistry</td>
<td>q 12 weeks</td>
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<tr>
<td>Electrolytes</td>
<td>q 12 weeks</td>
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<tr>
<td>Medical Monitoring</td>
<td>Every 2 weeks for the first month, then q 2-4 weeks thereafter</td>
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<tr>
<td>Behavioral Sessions</td>
<td>Weekly</td>
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</table>
Poll Question

Have you used or would you consider using a full meal replacement protocol with an adolescent patient?

1. Yes
2. No
3. Not sure
The program dietitian should review the following:

- Diet history or recall
- Food Frequency Questionnaire to include usual portion sizes
- Patterns of foods and/or triggers
- Food preferences/aversions
- Food allergies
- Previous weight loss efforts attempted
- Use of dietary or weight loss supplements/appetite suppressants
- Frequency of eating food prepared outside the home/eating out
- Frequency and amount of caloric beverages consumed (includes milk and fruit juice)
- Frequency of breakfast consumption
  - Obese children are more likely to skip breakfast than leaner children
- Look for any signs of disordered eating (anorexia, bulimia, binge eating disorder)
Active Weight Loss Meal Plans

- Partial MR: 1200 and 1500 kcal (stimuli narrowing)
- Full MR: minimum age of 16, severely obese
- Transition

![Meal Plan Diagram](image-url)
Behavioral Assessment Guidelines

- **Motivation and Emotional Readiness**
  - determine whether treatment is appropriate
  - help create a behavioral treatment plan
  - Food records

- **Environmental Assessment**
  - Home: Grocery shopping, cooking, saboteurs, family commitment
  - School: School breakfast and lunch menus, daily school schedule

- **Physical/Sedentary Activity Assessment**
  - determine the patient’s attitude towards physical activity and how easy or difficult it will be to incorporate
One-on-one behavioral and educational sessions are recommended for personalized support and parental involvement.

- Think “patient-centered”: positive interaction with the teen helps build motivation
- Be a source of support
- Encourage parent to be source of support as well

Group sessions with this population can be difficult to manage

Groups should be considered based on the circumstances of the individual clinic and its patient population.
Goal Setting

- Long-Term Goals
- Short-Term Goals
  - Precise behavior changes that the patient can focus on every day.
  - Have the patient commit to 1-2 short term goals per session
  - At least one focusing on diet (energy in) and one focusing on physical activity (energy out)
  - SMART Goals
Suggested Behavioral Session Flow

1. **Weight and Blood Pressure Check**

2. **Meet with parent to review patient’s adherence to Program and parental role & support**
   - "Last time we met you had set the goal to turn off your computer at 9 pm each night in order to get more sleep and not eat while online. How did that go?"

3. **Meet with patient to review food & activity record, adherence to diet & short-term goals**

4. **Discussion with patient and parent together, review of Lifestyle Education Series™ Module topic**

5. **Set 1–2 short-term goals for the next week**
   - Patient goals may be based on record review, discussion & problem solving with the patient, and/or the LES Module topic.
   - Parent goals are likely to be based on discussion and how they can work to best support their child’s efforts.
   - Goals should be specific, measurable, and achievable and recorded on the LES Module.
LES Modules Are…

- Topics to aid in behavior change discussion, nutrition education, and goal setting.
- Reinforcement tools

LES Modules Are Not…

- Replacements for discussion
- Handouts for patients to read later
Expert Committee recommends the following for treatment of adolescent overweight and obesity

- Be physically active 1 hour or more daily
- Involve the whole family in lifestyle changes
- Less than two hours of screen time (watching television, using a computer or handheld device)
Long-Term Weight Management

- Expert Committee recommendations for treatment and long-term management of adolescent overweight and obesity.
  - Limit screen time to 2 hours/day or fewer
  - Eat a healthy breakfast daily
  - Avoid sugar-sweetened beverages
  - Consume at least 5 servings of fruits and vegetables daily
  - Be physically active 1 hour or more daily.
  - Prepare more meals at home as a family (the goal is 5-6 times a week)
  - Limit meals outside the home

- Family Commitment
- Ongoing contact with the OPTIFAST Program
- Use of meal replacements