

How do I know if my patients are sick with obesity?

Using the AAP algorithm to guide assessment and management of patients with overweight and obesity.

MAAP 2017 Spring Conference
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www.lets-go.org

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Disclosure Statement

Victoria W. Rogers, MD, FAAP

- I have no relevant financial relationships with the manufacturers(s) of any commercial products(s) and/or provider of commercial services discussed in this CME activity.
- I do not intend to discuss an unapproved/investigative use of a commercial product/device in my presentation.

3

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Why a new Algorithm?

- ❑ Children with overweight and obesity may be sick
- ❑ PCPs need to screen for comorbidities
- ❑ To the extent possible, patients should be cared for in their medical home
- ❑ Providers have asked for guidance

4



How did we develop the algorithm?

- ❑ Engaged a small group of experts
- ❑ Relied on existing guidelines
- ❑ Utilized new research and new consensus statements

5

Take Home Messages

- ❑ Assessment is a critical piece of the puzzle
- ❑ This assessment is doable in the primary care setting
- ❑ Children who have a BMI \geq 85% may be sick and may need:
 - Special consideration to determine if they are ill
 - Laboratory tests
 - Additional work-up for comorbidities as determined by positive signs and symptoms and family history

6

Healthy Habits Questionnaire

- Gets conversation started between parent and child
- Keeps conversation going throughout appointment
- Can be used as a HEDIS measure

9

Provide prevention counseling

Provide Prevention Counseling
5 (fruits & vegetables) 2 (hours or less of screen time) 1 (hour or more of physical activity) 0 (sugary drinks) every day!

Risk Factor	Present	Absent
Family History	Family history of type 2 diabetes, hypertension, hyperlipidemia, or cardiovascular disease	Family history of type 1 diabetes, hypertension, hyperlipidemia, or cardiovascular disease
Review of Systems	Signs and symptoms of type 2 diabetes, hypertension, hyperlipidemia, or cardiovascular disease	Signs and symptoms of type 1 diabetes, hypertension, hyperlipidemia, or cardiovascular disease
Physical Exam	Signs and symptoms of type 2 diabetes, hypertension, hyperlipidemia, or cardiovascular disease	Signs and symptoms of type 1 diabetes, hypertension, hyperlipidemia, or cardiovascular disease

10

A Simple Framework

Every Day!

For more information about 5-2-1-0 visit www.lets-go.org

11


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20

Expectations in Primary Care: Growth


- ❑ Accurately measure and chart growth
 - Birth to 23 months – weight-for-length
 - 2 years and older – weight, height, BMI, BMI% and weight classification
- ❑ Identify and note concerns



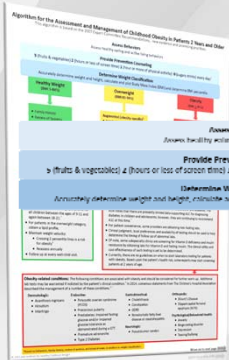
Words

What words do you use when referring to the patient's BMI?

- Be sensitive and direct
- Share why you, as the provider, care
- Avoid colloquialisms
- Use the "O" word carefully



You Are Here



Determine Weight Classification
 Accurately determine weight and height, calculate and plot Body Mass Index (BMI) and determine BMI percentile.

Healthy Weight (BMI 5-84%)

- Family History
- Review of Systems
- Physical Exam

Routine Care

- Provide ongoing positive reinforcement for healthy behaviors.
- For patients in the healthy weight category, screen for genetic dyslipidemia by obtaining a non-fasting lipid profile for all children between the ages of 9-11 and again between 18-21.²
- For patients in the overweight category, obtain a lipid profile.
- Maintain weight velocity:
 - Crossing 2 percentile lines is a risk for obesity*
 - Reassess annually
- Follow up at every well-child visit.

31

34

Pausing for a Moment

- These kids could be sick
- Children at greater than 85th percentile are at a higher risk for comorbidities
- We are going to look at 3 ways to fine-tune/augment your assessment:
 - Family History
 - Review of Systems
 - Physical Exam

Childhood Obesity in Primary Care 18

Augmented Obesity-specific Family History

- Obesity
- Type 2 Diabetes
- Hypertension
- Lipid level abnormalities
- Heart disease

Barlow S, Expert Committee. Expert committee recommendations regarding prevention, assessment, and treatment of child and adolescent overweight and obesity: Summary report. Pediatrics. 2007;120(4):S164-S192.

19

Augmented Obesity-specific Review of Systems

Symptoms	Probable causes
Snoring/sleep disturbances	Obstructive sleep apnea
Abdominal pain	GERD, constipation, gall bladder disease, NAFLD
Menstrual irregularities	Polycystic ovary syndrome/Prader-Willi syndrome
Hip, Knee, Leg pain	SCFE
Foot Pain	Musculoskeletal stress from weight
Polyuria/Polydipsia	Type 2 DM
Anxiety, school avoidance, social isolation	Depression
Severe recurrent headaches	Pseudotumor cerebri
Shortness of breath	Asthma

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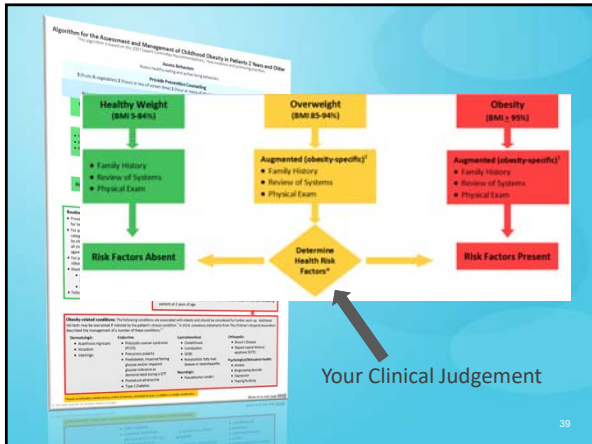
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Augmented Obesity-specific Physical Exam

Findings	Possible Explanations
Elevated Blood Pressure (correct cuff)	Hypertension on 3 or more occasions
Short Stature	Underlying endocrine conditions
Acanthosis nigricans	Increased risk of insulin resistance
Acne, Hirsutism	Polycystic ovary syndrome
Skin irritation, inflammation	Intertrigo
Papilledema, cranial nerve VI paralysis	Pseudotumor cerebri
Tonsillar hypertrophy	Obstructive sleep apnea
Goiter	Hypothyroidism
Wheezing	Asthma
Tender Abdomen	GERD, gallbladder disease, NAFLD
Abnormal gait, limited hip range	SCFE
Bowing of tibia	Blount disease
Small hands and feet, polydactyly	Some genetic syndromes
Reproductive (Tanner stage, apparent micropenis, undescended testes)	Premature puberty, may be normal penis buried in fat, Prader-Willi syndrome

Barlow S, Expert Committee. Expert committee recommendations regarding prevention, assessment, and treatment of child and adolescent overweight and obesity: Summary report. Pediatrics. 2007;120(4):S164-S192.

21



Health Risk Factors: Overweight

- Healthy eating and active living behaviors
- Family history
- Review of systems
- Physical exam

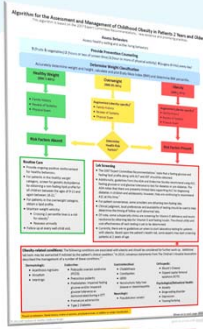
Overweight: Absent risk factors

Overweight (BMI 85-94%)

Routine Care

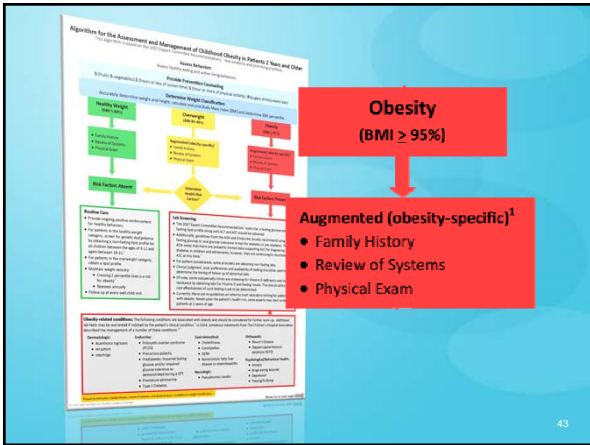
- Provide ongoing positive reinforcement for healthy behaviors.
- For patients in the healthy weight category, screen for genetic dyslipidemia by obtaining a non-fasting lipid profile for all children between the ages of 9-11 and again between 18-21.
- For patients in the overweight category, obtain a lipid profile.
 - Maintain weight velocity:
 - Crossing 2 percentile lines is a risk for obesity?
 - Reassess annually
 - Follow up at every well-child visit.

Overweight: Risk factors present



These children have increased risk for obesity related conditions and need to move to the right side of the algorithm

25

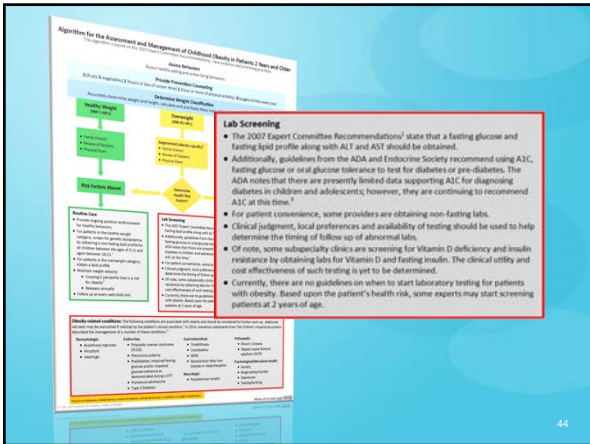


Obesity (BMI > 95%)

Augmented (obesity-specific)¹

- Family History
- Review of Systems
- Physical Exam

43



Lab Screening

- The 2007 Expert Committee Recommendations¹ state that a fasting glucose and fasting lipid profile along with ALT and AST should be obtained.
- Additionally, guidelines from the ADA and Endocrine Society recommend using A1C, fasting glucose or oral glucose tolerance to test for diabetes or pre-diabetes. The ADA notes that there are presently limited data supporting A1C for diagnosing diabetes in children and adolescents; however, they are continuing to recommend A1C at this time.²
- For patient convenience, some providers are obtaining non-fasting labs.
- Clinical judgment, local preferences and availability of testing should be used to help determine the timing of follow up of abnormal labs.
- Of note, some subspecialty clinics are screening for Vitamin D deficiency and insulin resistance by obtaining labs for Vitamin D and fasting insulin. The clinical utility and cost effectiveness of such testing is yet to be determined.
- Currently, there are no guidelines on when to start laboratory testing for patients with obesity. Based upon the patient's health risk, some reports may start screening patients at 2 years of age.

44

Laboratory Summary Slide

The recommended tests:

- Fasting Glucose
- Fasting Lipid Panel
- ALT
- AST

Additional laboratory test should be obtained as indicated

28

Obesity-related Conditions

Obesity-related conditions: The following conditions are associated with obesity and should be considered for further work-up. Additional lab tests may be warranted if indicated by the patient's clinical condition.³ In 2014, consensus statements from The Children's Hospital Association described the management of a number of these conditions.^{6,7}

Endocrine:

- Polycystic ovarian syndrome (PCOS)
- Precocious puberty
- Prediabetes: Impaired fasting glucose and/or impaired glucose tolerance as demonstrated during a GTT
- Premature adrenarche
- Type 2 Diabetes

46

Gastrointestinal:

- Cholelithiasis
- Constipation
- GERD
- Nonalcoholic fatty liver disease or steatohepatitis

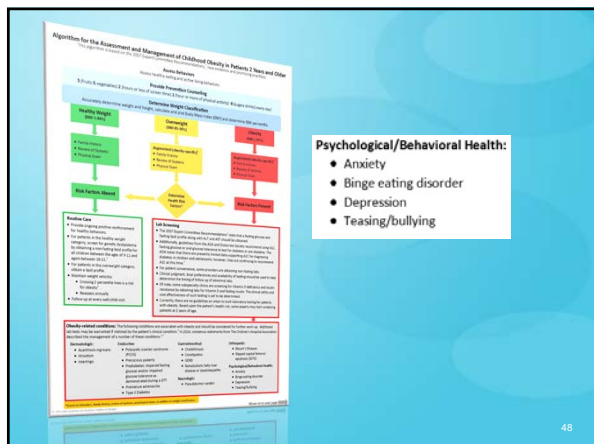
Neurological:

- Pseudotumor cerebri

Orthopedic

- Blount's Disease
- Slipped capital femoral epiphysis (SCFE)

47



The consensus statements presented in this article may help keep the management of these children in their medical home and provide guidance to those sites that may not have subspecialists available.

Estroff E, Eriq L, Hampf S, et al. Children's Hospital Association consensus statements for comorbidities of childhood obesity.

Management and Treatment

Key Points:

- Not every patient is ready
- Fear tactics don't work
- There are no quick fixes
- Frequent visits over time work
- Small behavior changes can have profound effects
- Motivational Interviewing works
- The stages are a guide
- The *Next Steps* guide and approach can be useful

Algorithm for the Assessment and Management of Childhood Obesity

Management and Treatment Stages for Patients with Overweight or Obesity

- Patients should start at the least intensive stage and advance through the stages based upon the response to treatment, age, BMI, health risks and motivation.
- An empathetic and empowering counseling style, such as motivational interviewing, should be employed to support patient and family behavior change.^{8,9}
- Children age 2 - 5 who have obesity should not lose more than 1 pound/month, older children and adolescents with obesity should not lose more than an average of 2 pounds/week.

Stage 1 Prevention Plus

Where/By Whom: Primary Care Office/Primary Care Provider

What: Planned follow-up themed visits (15-20 min) focusing on behaviors that resonate with the patient, family and provider. Consider partnering with dietitian, social worker, athletic trainer or physical therapist for added support and counseling.

Goals: Positive behavior change regardless of change in BMI. Weight maintenance or a decrease in BMI velocity.⁸

Follow-up: Tailor to the patient and family motivation. Many experts recommend at least monthly follow-up visits. After 3 - 6 months, if the BMI/weight status has not improved consider advancing to Stage 2.

51

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Stage 2 Structured Weight Management

Where/By Whom: Primary Care Office/Primary Care Provider with appropriate training

What: Care intervention on Stage 1 with additional weight reduction support and structure to address healthy behavior change.

Goals: Positive behavior change. Weight maintenance or a decrease in BMI velocity.

Follow-up: Every 2 - 4 weeks as determined by the patient, family and physician. After 2 - 6 months, if the BMI/weight status has not improved consider advancing to Stage 3.

Stage 3 Comprehensive Multi-Disciplinary Intervention

Where/By Whom: Pediatric Weight Management Clinic/Multi-Disciplinary Team

What: Increased intensity of behavior change, frequency of visits, and additional involved structured behavioral modification program, including food and activity monitoring, and development of their own diet and physical activity goals.

Goals: Positive behavior change. Weight maintenance or a decrease in BMI velocity.

Follow-up: Weekly or at least every 2 - 4 weeks as determined by the patient, family, and physician. After 3 - 6 months, if the BMI/weight status has not improved consider advancing to Stage 4.

Stage 4 Tertiary Care Intervention

Where/By Whom: Pediatric Weight Management Center/Provider with expertise in treating childhood obesity.

What: Recommended for children with BMI ≥ 35 and significant comorbidities. If unsuccessful with Stage 3, then recommended for children ≥ 10 who have severe or refractory obesity. 3, 9 involves diet and activity counseling with consideration of the use of medications and surgery.

Goals: Positive behavior change. Decrease in BMI.

Follow-up: Determined based upon patient's motivation and medical status.

52

Management and Treatment Stages for Patients with Overweight or Obesity

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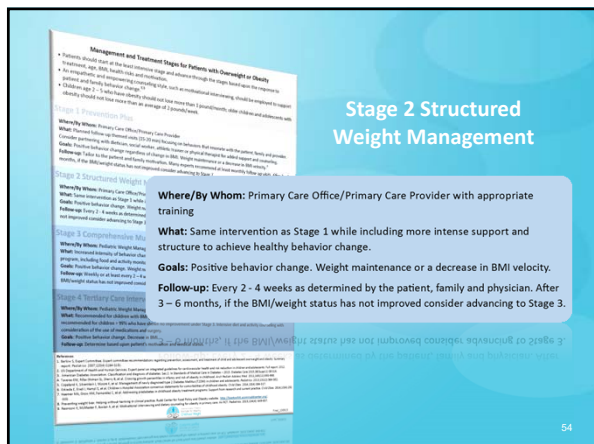
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Goals: Positive behavior change regardless of change in BMI. Weight maintenance or a decrease in BMI velocity.⁸

Follow-up: Tailor to the patient and family motivation. Many experts recommend at least monthly follow-up visits. After 3 - 6 months, if the BMI/weight status has not improved consider advancing to Stage 2.

53



Management and Treatment Steps for Patients with Overweight or Obesity

- Patients should start at the least intensive stage and advance through the stages based on the following:
 - Treatment goals, BMI, health risks, and comorbidities
 - An individualized and monitoring frequency (with such modifications as needed), should be employed to monitor obesity-related risk factors that are more than 2 standard deviations above children and adolescents with the following:
 - Child care and family behavioral change
 - Child care and family behavioral change
 - Child care and family behavioral change

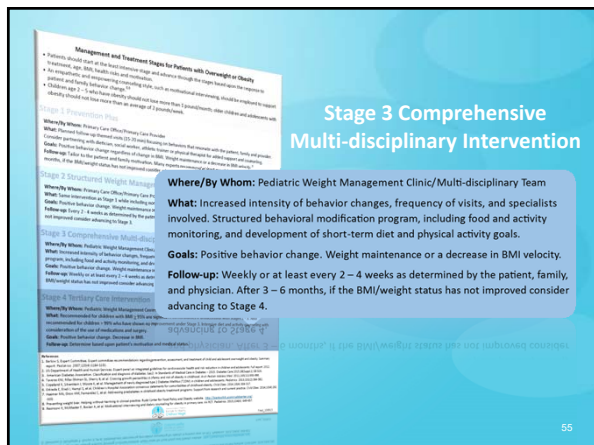
Stage 2 Structured Weight Management

Where/By Whom: Primary Care Office/Primary Care Provider with appropriate training

What: Same intervention as Stage 1 while including more intense support and structure to achieve healthy behavior change.

Goals: Positive behavior change. Weight maintenance or a decrease in BMI velocity.

Follow-up: Every 2 - 4 weeks as determined by the patient, family and physician. After 3 - 6 months, if the BMI/weight status has not improved consider advancing to Stage 3.



Management and Treatment Steps for Patients with Overweight or Obesity

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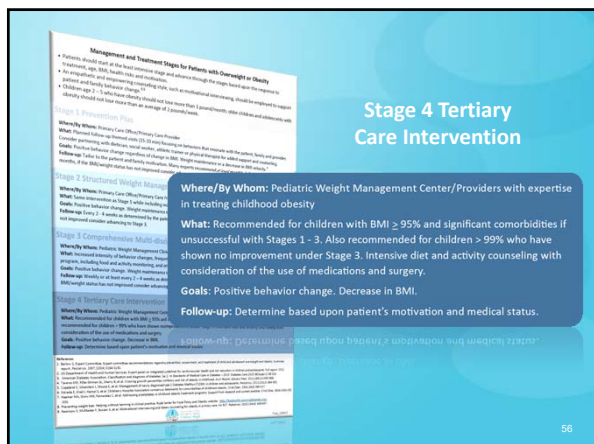
Stage 3 Comprehensive Multi-disciplinary Intervention

Where/By Whom: Pediatric Weight Management Clinic/Multi-disciplinary Team

What: Increased intensity of behavior changes, frequency of visits, and specialists involved. Structured behavioral modification program, including food and activity monitoring, and development of short-term diet and physical activity goals.

Goals: Positive behavior change. Weight maintenance or a decrease in BMI velocity.

Follow-up: Weekly or at least every 2 - 4 weeks as determined by the patient, family, and physician. After 3 - 6 months, if the BMI/weight status has not improved consider advancing to Stage 4.



Management and Treatment Steps for Patients with Overweight or Obesity

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 - Child care and family behavioral change

Stage 4 Tertiary Care Intervention

Where/By Whom: Pediatric Weight Management Center/Providers with expertise in treating childhood obesity

What: Recommended for children with BMI \geq 95% and significant comorbidities if unsuccessful with Stages 1 - 3. Also recommended for children $>$ 95% who have shown no improvement under Stage 3. Intensive diet and activity counseling with consideration of the use of medications and surgery.

Goals: Positive behavior change. Decrease in BMI.

Follow-up: Determine based upon patient's motivation and medical status.

What can be done in a well-child visit?

- ❑ Assessment: Is the patient at risk for complications due to his/her weight status?
- ❑ Begin the conversation (tailored to family and risk)
- ❑ Set the stage
- ❑ Gauge patient and family interest in continuing the conversation
- ❑ Arrange for follow-up:
 - Are labs necessary?
 - Is a referral necessary?
 - Does the patient and family want to keep talking about what to do to get healthy?

40

Take Home Messages


- ❑ Assessment is a critical piece of the puzzle
- ❑ This assessment is doable in the primary care setting
- ❑ Children who have a BMI $\geq 85\%$ may be sick and may need:
 - Special consideration to determine if they are ill
 - Laboratory tests
 - Additional work-up for comorbidities as determined by positive signs and symptoms and family history



41

Management and Treatment Steps for Patients with Overweight or Obesity

- Patients should start at the first clinical step and work through the steps based on response.
- Assessment and counseling should be ongoing.
- Children with $\geq 85\%$ overweight or obesity should not lose more than 5% of their excess weight. Additional weight loss should be based on the severity of comorbidities.



**American Academy of Pediatrics
Institute for Healthy
Childhood Weight**

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60
