Evaluation and Treatment of Children and Adolescents with Obesity

An AAP Clinical Practice Guideline
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Conflict of Interest Disclosure

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• I do not intend to discuss any unapproved/investigative use of a commercial product/device in my presentation.

• The views presented in this didactic do not necessarily represent the views and opinions of the AAP.
Dr. Amy Christison is the Eliza J and Pedro A de Alarcon Professorship in Pediatrics, an associate professor of the Department of Pediatrics at University of Illinois College of Medicine at Peoria. She is the assistant program director of the pediatric residency at Children’s Hospital of Illinois (CHOI) and healthcare systems curricular theme lead for all 3 UICOM regional campuses.

Her clinical and research interests focus on pediatric obesity care. She is ABOM certified and Medical Director of Healthy Kids U obesity care program at the CHOI. She is the Co-chair of the AAP SOOb Coaches network and the Co-chair of the research committee for POWER, a national registry of pediatric weight management programs.

Dr. Christison earned her medical degree from the Feinberg School of Medicine, Northwestern University and completed her residency training at Comer Children's Hospital, University of Chicago.
Thank you

Website: https://ihcw.aap.org
www.aap.org/obesitycpg
Learning Objectives

• Appreciate childhood obesity as a complex chronic disease as highlighted in the new clinical practice guidelines (CPG)
• Recognize how weight stigma and bias can increase barriers to treating childhood obesity
• Apply a holistic approach to assessment and to deliver contextualized obesity care to the whole child
• Apply multiple additive treatment options to obesity care and management of related co-morbidities
CPG in a nutshell

• 13 Key Action Statements
• 11 Consensus Recommendations
• Key Topics:
  ✓ Assessment & evaluation
  ✓ Comorbidities
  ✓ Multiple evidence-based treatment options
What are clinic-based, effective treatments for obesity?

➢ We understand more fully the implications of obesity as a chronic disease

➢ We understand the physiological impacts of social determinants of health on obesity more completely

➢ We know more fully that weight bias and stigma is pervasive and harmful and can be a barrier to treatment
New from previous recommendations

➢ Offer treatment early and immediately – there is no benefit to watchful waiting
➢ Treat obesity and comorbid conditions concurrently
➢ There are multiple evidence-based strategies that can be used collectively to deliver intensive & tailored obesity treatment
➢ Structured, supervised weight management interventions decrease current & future eating disorder symptoms
### Key Takeaways

<table>
<thead>
<tr>
<th>Obesity is a complex chronic disease</th>
<th>There are effective evidence-based strategies for treatment</th>
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<tbody>
<tr>
<td>Comprehensive whole child evaluations are important</td>
<td>Treating obesity also means treating comorbidities</td>
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<tr>
<td>Obesity treatment is safe and effective</td>
<td>Children with overweight or obesity should be offered treatment upon diagnosis</td>
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</table>
AK is a 14 year old who is reluctant to come to our clinic. Her mother speaks for her since she is not comfortable with sharing what is on her mind.

“She has always been hungry since she was a baby. I have been told all her life to ‘watch what she is eating’.”

“I have tried everything they have told me but both of us struggle. I’m worried she will end up with diabetes and hypertension like me.”
German Shepherds and Chihuahuas
Obesity is a complex chronic disease

• Obesity is often an indicator of structural inequities like unjust food systems, health inequities and environmental & community factors

• Genetics, obesity-promoting environments, life experiences combined with inequities and structural barriers to healthy living all contribute to overweight and obesity
Treatment Experience of Obesity as a Chronic Disease

Longitudinal Non-Stigmatizing Care Coordinated Patient-Centered Treatment Across Lifespan

- Shared decision making with patient & family
- Culturally competent care
- Treatment coordinated in the medical home
- Transition planning

Patient & Family & PCP/PHCP Partnership

Treatment intensity & support vary to address relapsing & remitting nature of obesity as a chronic disease

Structural and Contextual Factors

- Access to Care
- Weight Bias and Stigma
- Obesogenic Environments

That Impede & Influence Health & Treatment

- Adverse Child Experiences
- Racism
- Health Inequities
Our typical patient....

Joann is a 15 year old female patient who is present for her yearly well-child visit. You have cared for her since birth. Mom had gestational diabetes. There is a family history of obesity on both sides, Type 2 DM in mom and maternal GM; Dyslipidemia and hypertension in Father and Paternal GPs.

She has had excessive weight gain since age 6 years when her family moved. Since then, her family life has been complicated with been job changes and school changes as well.
<table>
<thead>
<tr>
<th>Assessment &amp; Evaluation KAS Topics</th>
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<tbody>
<tr>
<td><strong>BMI Measurement</strong></td>
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<tr>
<td><strong>Comprehensive Evaluation</strong></td>
</tr>
<tr>
<td>(PE, ROS, Hx, etc)</td>
</tr>
<tr>
<td><strong>Risk Assessment</strong></td>
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<tr>
<td>(Whole child)</td>
</tr>
<tr>
<td><strong>Comorbidity Evaluation</strong></td>
</tr>
<tr>
<td>(labs, tests)</td>
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</table>
What might you do differently?

Eat less, exercise more. I’ll see you next year

Joann’s Growth chart

GM feeds Joann

Job Loss, FI, Stress, Disrupted Sleep

School Difficulty, Abilify
Is it ok if I show you how you have been growing?

This is a chart that shows growth which is healthier and growth which increases risk for health problems like diabetes.

What do you make of this?
Sharing Weight Status

- Avoid stigmatizing and labeling terms – “She is gaining unhealthy weight.” Not “She is obese.”
- Parents prefer unhealthy weight or weight problem rather than obese, fat or extremely obese.¹
- Ask permission to share. If not ready, “Is it ok if I ask permission to discuss this again at another time when you are ready?”
- Tell or share information in simple terms.
- Asking what this means to her/mom.

What might you do differently?

Eat less, exercise more. I’ll see you next year.

Joann’s Growth chart

- GM feeds Joann
- School Difficulty, Abilify
- Job Loss, FI, Stress, Disrupted Sleep
Evaluation Sets the Stage for Treatment

Socioecological Model

Child
Family
Community
Society

Iceberg Model
Examination

- BP pre-hypertensive range
- Moderate acanthosis
- Intertrigo in between folds of pannus
- Liver span 14 cm

Is it ok if share some of your physical exam findings?

The dark circle on your neck is a red flag before people develop Diabetes

Your liver is enlarged. It stores extra fat and for some this can cause the liver to be inflamed.
Pediatricians and other PHCPs should evaluate children 2 to 18 y of age with overweight (BMI ≥85th percentile to <95th percentile) and obesity (BMI ≥95th percentile) for obesity-related comorbidities by using a comprehensive patient history, mental and behavioral health screening, SDoH evaluation, physical examination, and diagnostic studies.
Comorbidities Addressed Include

- Hypertension
- T2DM & Prediabetes
- NAFLD
- Dyslipidemia
Comorbidities Addressed Include

- Depression
- Obstructive Sleep Apnea
- PCOS
- SCFE
- Blount disease

Idiopathic Intracranial Hypertension
Obstructive Sleep Apnea
PCOS
Blount disease
SCFE
KAS 3. In children 10 y and older, pediatricians and other PHCPs should evaluate for lipid abnormalities, abnormal glucose metabolism, and abnormal liver function in children and adolescents with obesity (BMI ≥95th percentile) and for lipid abnormalities in children and adolescents with overweight (BMI ≥85th percentile to <95th percentile).
Follow-up is hard!!!

- TIE the reason to something else – asthma, lab recheck.
- LOAD the plan for early program successes.
- CONSIDER having patient and family define the frequency of follow up.
- SHARED decision making with a SMART plan.
- CREATE an atmosphere of FUN in the office.
Follow-up visit

Pre visit fasting labs: LFT’s, fasting or non-fasting lipid panel, fasting glucose or Hgb A1C

30 minute visit

family history and ROS

Complete physical exam

MI based counseling initiated

Plan should be tailored

Billing at 99215 based on comprehensive history, physical and decision making; sometimes ‘time’ too!
Ask-Tell-Ask

- Ask permission
- Tell
- Ask

Is it ok if we review your lab tests together?

Share results in the context of consequences of unhealthy weight

What do you make of this?
Joann’s labs and examination

- Acanthosis
- Enlarged liver
- Triglycerides 170
- HDL 27
- Fasting Blood Sugar 102
- Hgb A1C 5.6
- SGPT 60
KAS 4: Pediatricians and other PHCPs should treat children and adolescents for overweight (BMI ≥ 85th percentile to < 95th percentile) or obesity (BMI ≥ 95th percentile) and comorbidities concurrently.
KAS 9. Pediatricians and other PHCPs should treat overweight (BMI ≥85th percentile to <95th percentile) and obesity (BMI ≥95th percentile) in children and adolescents, following the principles of the medical home and the chronic care model, using a family-centered and nonstigmatizing approach that acknowledges obesity’s biologic, social, and structural drivers.
Provide or ensure ongoing medical evaluation & monitoring
What is happening with this patient and family physically, emotionally, and socially?

Develop & implement an individualized comprehensive treatment plan, using evidence-based strategies
What can help the patients & family develop & reach treatment goals and treat comorbidities?

Tailor treatment as needed
What else is needed to support the patient & family’s immediate needs & longitudinal treatment progress?

Serve as medical home
What care coordination and/or advocacy does this patient/family need?

PCP & PHCP Evidence-Based Toolbox
Motivational Interviewing
Intensive Health Behavior & Lifestyle Treatment
Pharmacotherapy
Surgery
KAS 10. Pediatricians and other PHCPs should use motivational interviewing (MI) to engage patients and families in treating overweight (BMI ≥85th percentile to <95th percentile) and obesity (BMI ≥95th percentile).
What is Motivational Interviewing (MI)?

Motivational interviewing is a collaborative conversation style to strengthen a person’s own motivation and commitment to change.

— Miller and Rollnick

Motivational Interviewing: Helping People Change
3 ed, 2013
Spirit of MI: CAPE

Compassion

Evocation

Acceptance

Partnership
“Is there anything you would like to do for your health in the next week or two?”

Behavioral Menu

SMART Behavioral Plan → Elicit a Commitment Statement

“How confident or sure do you feel about carrying out your plan (on a scale from 0 to 10)?”

If Confidence <7, Problem Solve Barriers

“Would it be helpful to set up a check on how things are going with your plan?”

Check on progress
Review Health Habits as it relates to the CM risk

Is there something she would like to work on?

Set a SMART goal

I/WE WILL WORK ON THE FOLLOWING CHANGES UNTIL WE MEET:

<table>
<thead>
<tr>
<th>READINESS FOR CHANGE</th>
<th>None</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
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<tbody>
<tr>
<td>I’m sure I can get this done:</td>
<td></td>
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<tr>
<td>Barriers/Problem solving:</td>
<td>***</td>
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Patient Goals can be documented in the patient instructions or a goal section
Let’s watch BAP in action!
KAS 11. Pediatricians and other PHCPs should provide or refer children 6 y and older (Grade B) and may provide or refer children 2 through 5 y of age (Grade C) with overweight (BMI ≥85th percentile to <95th percentile) and obesity (BMI ≥95th percentile) to intensive health behavior and lifestyle treatment. Health behavior and lifestyle treatment is more effective with greater contact hours; the most effective treatment includes 26 or more hours of face-to-face, family-based, multicomponent treatment over a 3- to 12-mo period.
More about I HBLT

WHO:
- Patient & family
- Multidisciplinary treatment team

WHAT:
- Health education
- Skill building
- Behavior modification & counseling

WHEN:
- Upon diagnosis

WHERE:
- Healthcare setting
- Community-based setting with linkage to medical home

DOSAGE:
- Longitudinal (3-12 months long)
- At least 26 contact hours

FORMAT:
- Group
- Individual, or
- Both

CHANNEL:
- Face-to-face or
- Virtual
Behavioral Strategies

- Reduction of sugar-sweetened beverages
- 60-minute of daily physical activity
- Balance meals and portion sizes MyPlate
- Appropriate sleep
- Reduction of Screen time
- Exergaming & screen-based physical activity
- Stoplight diet
Subsequent visits

- Verify readiness to engage
- Checking on their progress on behaviors
- Ongoing, tailored MI based problem solving and planning

- Six months of meeting regularly
- Visits q1-4 weeks
- Usually 99214 with the occasional 99213
KAS 12. Pediatrists and other PHCPs should offer adolescents 12 y and older with obesity (BMI ≥95th percentile) weight loss pharmacotherapy, according to medication indications, risks, and benefits, as an adjunct to health behavior and lifestyle treatment.
"No current evidence supports weight loss medication use as a monotherapy; thus, pediatricians and other PHCPs who prescribe weight loss medication to children should provide or refer to intensive behavioral interventions for patients and families as an adjunct to medication therapy."

CPG
<table>
<thead>
<tr>
<th>Drug: FDA approved Age</th>
<th>Outcome</th>
<th>Time Frame</th>
<th>Major Contraindications/ Side Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phentermine 15 mg &gt;16 years</td>
<td>-4.1% BMI</td>
<td>24 weeks</td>
<td>Uncontrolled HTN/CV dz, Pregnancy, hypothyroidism, severe anxiety disorder</td>
</tr>
<tr>
<td>Phentermine/Topamax 12 years</td>
<td>Top dose 15 mg/96 mg: -10.4% BMI  Mid-dose 7.5 mg/46 mg : -8.1%BMI</td>
<td>56 weeks</td>
<td>Glaucoma, kidney stones, cognitive dysfunction, metabolic acidosis, BP, insomnia, anxiety/mood, glaucoma</td>
</tr>
<tr>
<td>Liraglutide 3mg qD 12 years</td>
<td>-4.6% (-7.14, -2.14)  -5% BMI 43.3% vs. 18.7%  -10% BMI 26% vs. 8.1%</td>
<td>56 weeks</td>
<td>FHx or PMHx MEN2 /Thyroid Ca, Glutamate excitotoxicity</td>
</tr>
<tr>
<td>Semaglutide 2.4 mg qwk 12 years</td>
<td>-16.1% BMI (-20.3, -13.2) Reduction &gt;5% (76%), &gt;10% (63%), &gt;15% (57%), &gt;20% (40%)</td>
<td>54 weeks</td>
<td></td>
</tr>
<tr>
<td>Setmelanotide 1-3 mg qD 6 years</td>
<td>POMC -25% kg (CI 28.8, -22)  LEPR -12.5% kg (CI -16.1, -8.8)  Bardet Biedel -16.3% (CI -19.9, -12.8)</td>
<td>52 weeks</td>
<td>Darkening of skin nevi</td>
</tr>
</tbody>
</table>
The Illinois DHS Drugs and Therapeutics Advisory Board approved “Anti-Obesity Medications” be added to the PDL (preferred drug list) starting in 2024 for IL Medicaid.

They will start with adding 2 medications, liraglutide and semaglutide and then do a call specific review to add more medications in 2024. The review was to be focused specifically on GLP-1s for weight loss but with our feedback, changes to class specific indication for anti-obesity medications. They will now be creating a formulary.
KAS 13: Pediatricians and other PHCPs should offer referral for adolescents 13 y and older with severe obesity (BMI ≥120% of the 95th percentile for age and sex) for evaluation for metabolic and bariatric surgery to local or regional comprehensive multidisciplinary pediatric metabolic and bariatric surgery centers.
TABLE 20
Criteria for Pediatric Metabolic and Bariatric Surgery

<table>
<thead>
<tr>
<th>Weight Criteria</th>
<th>Criteria for Comorbid Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 2 obesity, BMI $\geq 35$ kg/m$^2$ or 120% of the 95th percentile for age and sex, whichever is lower</td>
<td>Clinically significant disease; examples include but are not limited to T2DM, IIH, NASH, Blount disease, SCFE, GERD, obstructive sleep apnea (AHI $\geq 5$), cardiovascular disease risks (HTN, hyperlipidemia, insulin resistance), depressed health-related quality of life.</td>
</tr>
<tr>
<td>Class 3 obesity, BMI $\geq 40$ kg/m$^2$ or 140% of the 95th percentile for age and sex, whichever is lower</td>
<td>Not required but commonly present.</td>
</tr>
</tbody>
</table>

AHI, apnea-hypopnea index.
CPG Algorithm

Algorithm for Screening, Diagnosis, Evaluation, and Treatment of Pediatric Overweight and Obesity

SCREENING
- P&HPCPs should measure height & weight, calculate BMI, and assess BMI percentile using age- and sex-specific CDC growth charts or severe obesity growth charts for all children 2-18 years (KAS 1)

DIAGNOSIS
- Overweight BMI ≥5th percentile
- Obesity BMI ≥95th percentile
- Severe Obesity BMI ≥120% of the 95th percentile

EVALUATION
- Components of Comprehensive Evaluation
  - Comprehensive history, MIH screening, SSOH evaluation, physical examination, & diagnostic studies (KAS 2)
  - Blood pressure (KAS 3)
  - Fasting lipid panel (KAS 3, 3.1.5)
  - FPG, OGTT, or HbA1c (KAS 3, 3.1.6)
  - ALT (KAS 3, 3.1.7)

TREATMENT
- Components of Comprehensive Treatment
  - Motivational Interviewing (KAS 10)
  - Intensive Health Behavior and Lifestyle Treatment (KAS 11)
  - Weight Loss Pharmacotherapy (KAS 12)
  - Offer referral to Comprehensive Pediatric Metabolic & Bariatric Surgery programs (KAS 13)

Elevated BP
- Refer to AAP High BP CPG
- Revisit every visit

Abnormal lab:
- May repeat testing in 2 years or sooner if changes in exam-risk
## The Continuum of Obesity Care and the Role of PCP/PHCP

<table>
<thead>
<tr>
<th>FOCUS</th>
<th>ROLE OF THE PEDIATRICIAN/PHCP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosis and Measurement</td>
<td>✓ Measure height and weight&lt;br&gt;✓ Calculate BMI and assess BMI Percentile&lt;br&gt;✓ Communicate BMI and weight status to patient and family</td>
</tr>
<tr>
<td>Risk Factors</td>
<td>✓ Assess individual, structural and contextual risk factors</td>
</tr>
<tr>
<td>Evaluation</td>
<td>✓ Perform comprehensive patient history&lt;br&gt;✓ Conduct physical exam&lt;br&gt;✓ Evaluate for comorbidities&lt;br&gt;✓ Order relevant diagnostic studies and labs&lt;br&gt;✓ Assess readiness to change</td>
</tr>
<tr>
<td>Treat Comorbidities</td>
<td>✓ Treat obesity and comorbidities concurrently</td>
</tr>
<tr>
<td>Treat Obesity</td>
<td>✓ Manage children with overweight &amp; obesity following principles of chronic care model &amp; medical home&lt;br&gt;✓ Deliver non-stigmatizing care&lt;br&gt;✓ Use MI to engage patient and families in addressing overweight and obesity, set goals and promote participation or utilization of local resources or programs&lt;br&gt;✓ Promptly engage and refer children to intensive HBLT treatment, if available. If intensive HBLT treatment is not available in your area, deliver highest intensity HBLT treatment possible.&lt;br&gt;✓ Foster self-management strategies&lt;br&gt;✓ Refer to subspecialists if needed&lt;br&gt;✓ Serve as medical home, coordinate care, advocate for family, &amp; support transition to adult care.&lt;br&gt;✓ Offer weight loss pharmacotherapy, to eligible patients, according to medication indications, risks, and benefits, as an adjunct to HBLT.&lt;br&gt;✓ For eligible patients with severe obesity, offer referral to a local or regional comprehensive multidisciplinary pediatric metabolic and bariatric surgery center for surgical evaluation</td>
</tr>
</tbody>
</table>
Longitudinal comprehensive patient-centered obesity treatment coordinated in the medical home

Adjunct tools to leverage where appropriate and in conjunction with foundational elements

Pharmacotherapy

Use of MI for shared decision making & ongoing behavioral counseling

Surgery

Provision or referral to intensive Health Behavior and Lifestyle (HB&L) treatment (>=26 contact hours over 3-12 months)

Ongoing assessment of individual, social and contextual risk factors and evaluation for comorbidities & comorbidity treatment

Layer in multidisciplinary care & community resources as available and tailored to patient/family strengths and needs.
Thank You

Email: obesity@aap.org
Website: https://ihcw.aap.org
www.aap.org/obesitycpg
Twitter: @AAPHealthyWT
Implementation Supports

More detailed slides on specific examples of implementation resources that you can integrate into your presentation as desired. Share these during your presentation or use them to follow-up with your learners post session.
Algorithm: Supports clinical decisions for screening, diagnosing, evaluating and treating pediatric obesity at the point of care. (What)
Clinical Flow: Assessment and Evaluation
Screening, Diagnosis, and Evaluation (How – Part 1)
Clinical Flow: Treatment and Approach in Primary Care Office (How – Part 2)

- Suggested treatment approaches
- Strategies to intensify treatment
- Pediatric’an's' toolbox of treatment options
- Medication considerations
- Support on interpreting lab results
Coding Quick Reference Card: maps billing codes to the CPG algorithm for easier integration