AAP Clinical Practice Guideline (CPG)

Evaluation and Treatment of Children and Adolescents with Obesity

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Pediatric Health Network
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American Academy of Pediatrics
Institute for Healthy Childhood Weight

CPG
Evaluation & Treatment of Pediatric Obesity

A few notes about today's Grand Rounds

- All lines are muted throughout the presentation.
- Please use the Q&A to ask questions or make comments.
- We will be recording the session.
- Today's recording and materials will be posted to the PHN website 3 business days following the presentation:

https://pediatrichealthnetwork.org/

Objectives

- Understand the reasoning behind the new Clinical Practice Guidelines (CPG)
- Review the new CPG Key Action Statements (KAS)
- Review the management of pediatric obesity including evaluation, Intensive Health Behavior Treatment (IHBT), pharmacotherapy, and bariatric surgery as outlined in the CPG

What the CPG does not include:

- The CPG does not cover the **prevention of obesity** – which will be addressed in a forthcoming AAP policy statement
- The CPG does not include guidance for evaluation and treatment of overweight and obesity in **children younger than 2 years**

Looking Back: the Last Published Guidelines…

PEDIATRICS®
OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS
Pediatrics 2007;120;Supplement 163-288

Expert Committee Recommendations Regarding the Prevention, Assessment, and Treatment of Child and Adolescent Overweight and Obesity: Summary Report
Sarah E. Barlow and and the Expert Committee

Assessment of Child and Adolescent Overweight and Obesity
Nancy F. Krebs, John H. Himes, Dawn Jacobson, Theresa A. Nicklas, Patricia Guilday and Dennis Styne

Recommendations for Prevention of Childhood Obesity
Matthew M. Davis, Bonnie Gance-Cleveland, Sandra Hassink, Rachel Johnson, Gilles Paradis and Kenneth Resnicow

Recommendations for Treatment of Child and Adolescent Overweight and Obesity
Bonnie A. Spear, Sarah E. Barlow, Chris Ervin, David S. Ludwig, Brian E. Saelens, Karen E. Schetzina and Elsie M. Taveras

Writing Groups Appointed:

1. Assessment
2. Prevention
3. Treatment

Each group was tasked with:

- literature review (not a systematic review)
- recommendation development and writing

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Where Are We Today?

14.1 Million children and adolescents in the United States are affected by obesity

4.5 Million Children and Adolescents with Severe Obesity

Obesity affects the immediate and long-term health of children

CPG Development

Comprehensive Process

Pediatric Health Network

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CPG By the Numbers

15
Years Since Last Comprehensive Guidance

16K Abstracts Reviewed

1642
Full Text Articles

382
Studies Included

13
CPG Key Action Statements

11
CPG Consensus Recommendations

2
Technical Reports

Methodology – Scope of the Review

Key Question 1

What are clinic-based, effective treatments for obesity?

Key Question 2

What is the risk of comorbidities among children with obesity?

Original search period ended April 6, 2018. An additional search was conducted covering the time period April 7, 2018 - February 15, 2020.

- 15 988 Articles screened
- 1642 Full text articles reviewed
- 382 Studies included

Key Q1 (treatment) Inclusion Criteria

215 Studies Included

- **Primary aim: prevention or treatment intervention**
  - Obesity prevention: targeting children of any weight status
  - Treatment intervention: targeting children with overweight or obesity

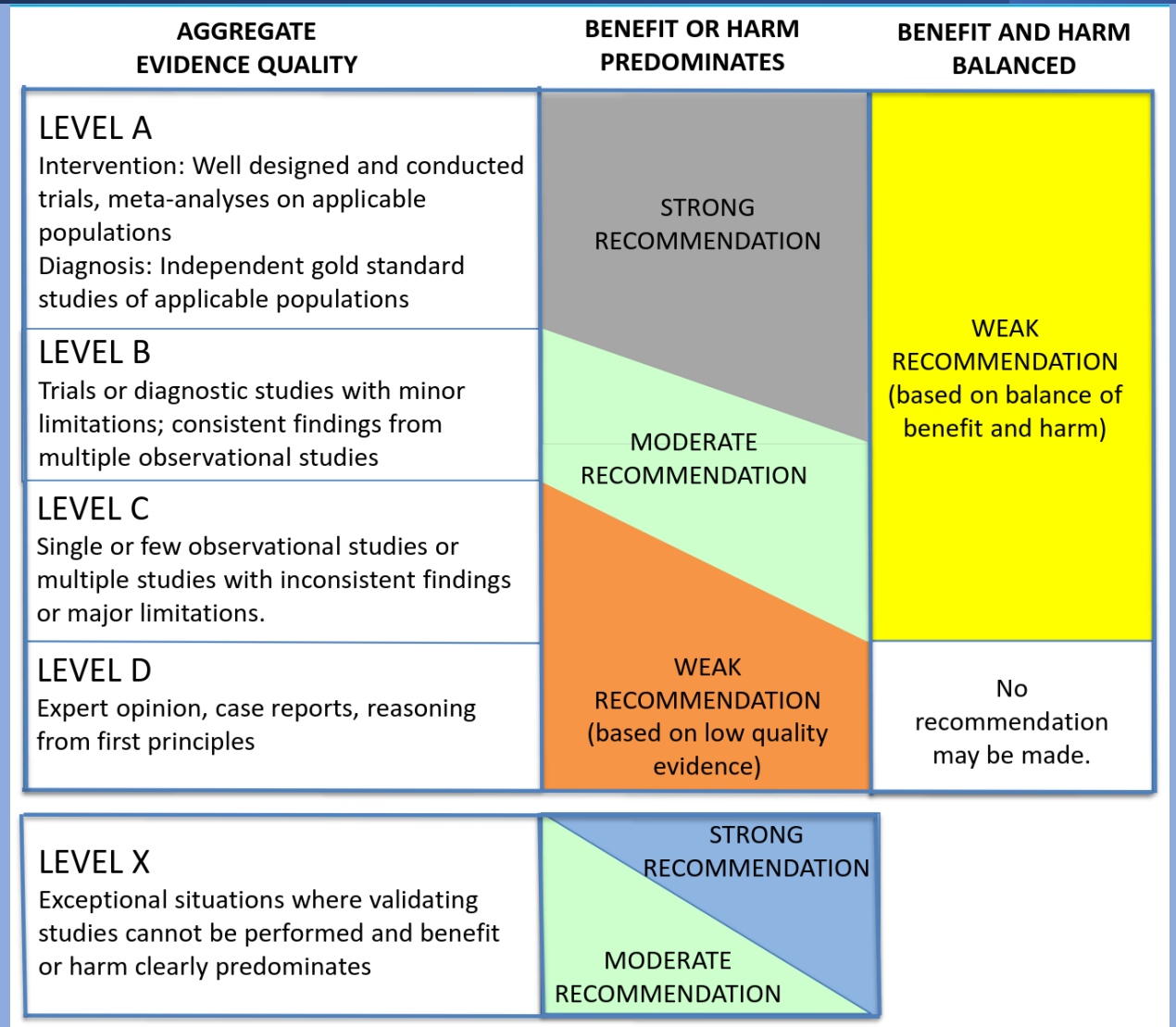
- Primary intended outcome: Obesity
- Interventions: any approach
- Evidence review committee did not limit based on study design
- Experimental and non-experimental studies reported separately
- All studies had to have relevant comparison group

Key Q2 (comorbidities) Inclusion Criteria

167 Studies Included

- **Primary aim: comparing comorbidities among those with and without obesity or by obesity severity**
- Obesity and comorbidity measured contemporaneously to reflect the practice of clinical screening
- Obesity categorized using a BMI-based measure into accepted categories (i.e., healthy weight, overweight, class I obesity, class II obesity, class III obesity)
- Comorbidities included one or more of: lipids, blood pressure, liver function, glucose metabolism abnormalities, obstructive sleep apnea, asthma, depression

Evidence Grading for Key Action Statements (KAS) Development



New From Previous Recommendations

NEW

- We understand more fully the implications of obesity as a **chronic disease**
- We understand the physiological impacts of **social determinants of health (SDoH)** on obesity more completely
- We know more fully that **weight bias and stigma are pervasive** and harmful and can be a barrier to treatment

New from Previous Recommendations Continued

NEW

- 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**

Whole Child Approach

Underlying **genetic, biological, environmental,** and **social determinants** that are risks for obesity are the foundation of evaluation and treatment

-AAP Clinical practice Guidelines

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
- Other risk factors…

Evaluation Recommendations

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Evaluation & Treatment of Pediatric Obesity

The primary care clinician is well-positioned to:

- ✓ evaluate for weight-related comorbidities
- ✓ appropriately initiate treatment
- ✓ coordinate care with subspecialties
- ✓ and provide concurrent obesity &comorbidity treatment

--CPG

KAS 1: BMI Measurement (Grade B)

PHCPs **should measure height and weight, calculate BMI and assess BMI %tile using age- and sex-specific CDC growth charts** or growth charts for children with severe obesity at least annually **for all children 2 to 18 y of age** to screen for:

- overweight (BMI≥85th %tile to <95th %tile)
- obesity (BMI ≥95th %tile)
- severe obesity (BMI ≥120% of the 95th %tile for age and sex)

Assess Risk

Consensus Recommendation: Perform Initial and Longitudinal Assessment of:

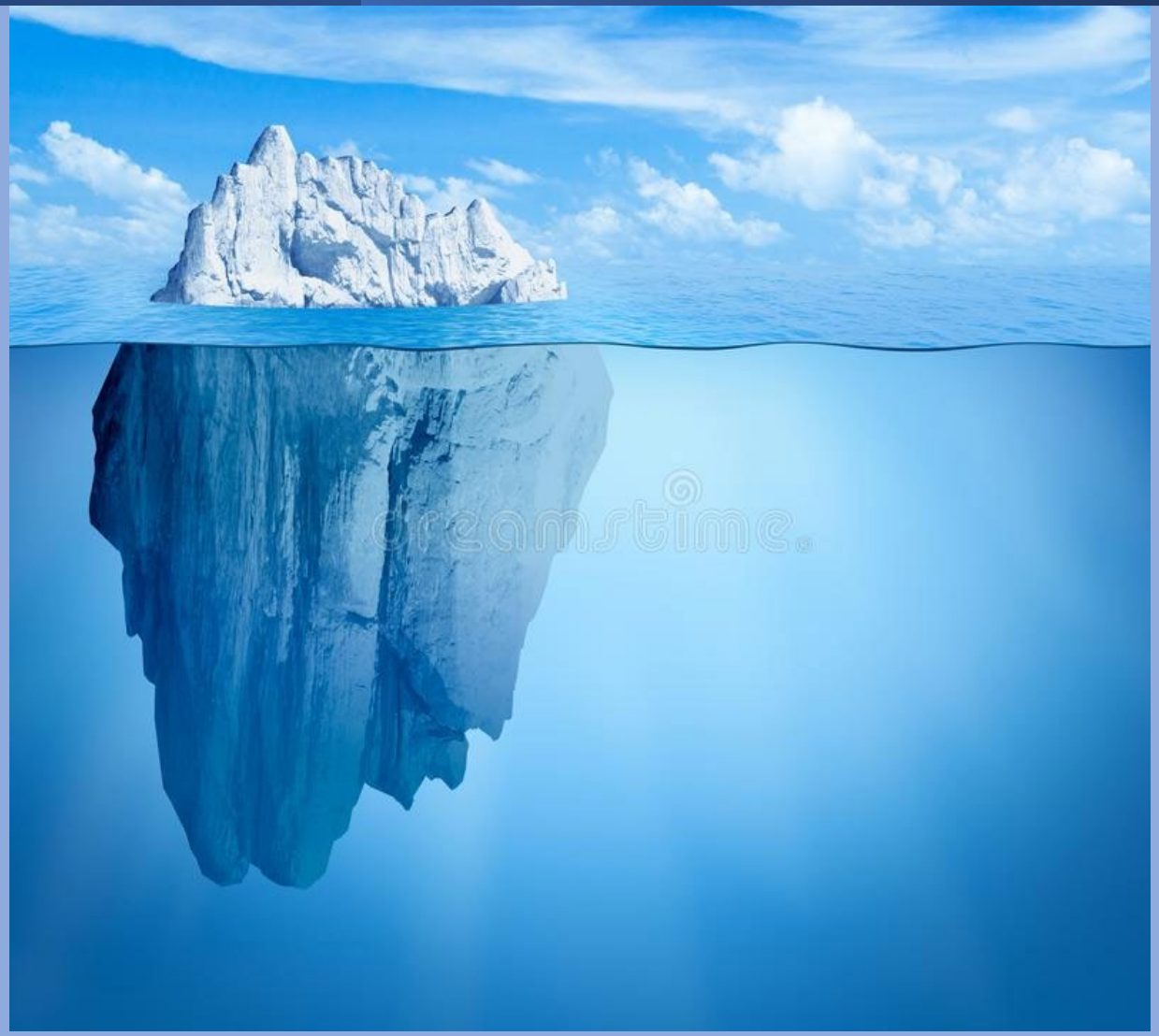
- Individual
- Structural
- Contextual Risk Factors

} to provide individualized and tailored treatment of the child/adolescent with overweight/obesity

Evaluation Sets the Stage for Treatment

Socioecological Model

- Child
- Family
- Community
- Society



Comorbidities

"There is compelling evidence that obesity increases the risk for comorbidities, and that weight loss interventions can improve comorbidities.

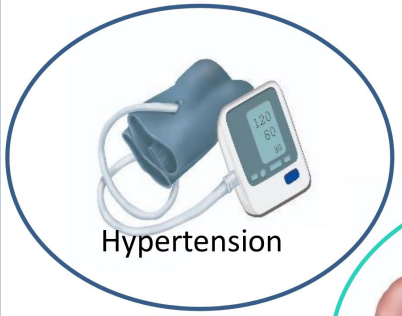
– CPG"

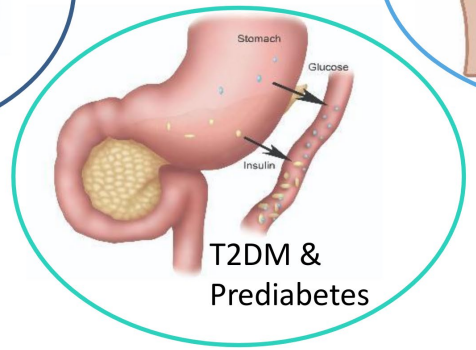
KAS 2: Evaluate for Comorbid Conditions (Grade B)

PHCPs should evaluate children 2 to 18 y of age with overweight (BMI ≥85th %tile to <95th %tile) and obesity (BMI ≥95th %tile) for obesity-related comorbidities by using:

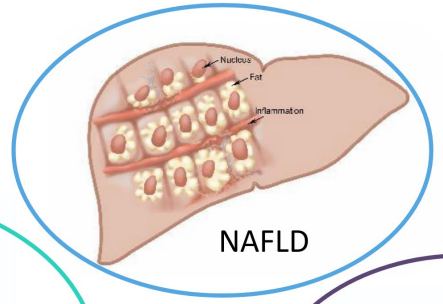
- a comprehensive patient history
- mental & behavioral health screening
- SDoH evaluation
- physical examination
- & diagnostic studies

Comorbidities Addressed Include

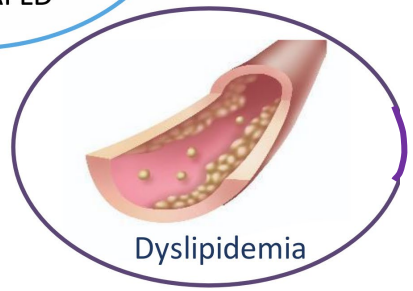

Hypertension

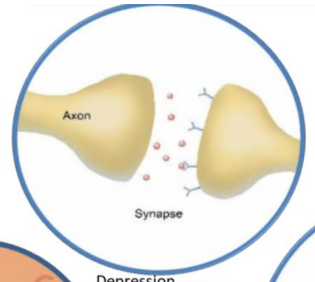


T2DM & Prediabetes

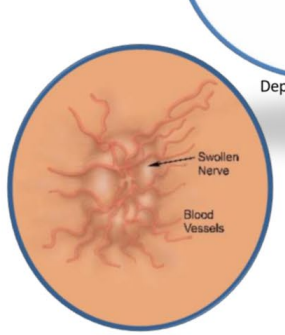


NAFLD


Dyslipidemia

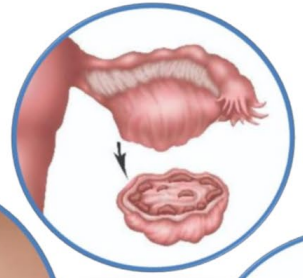


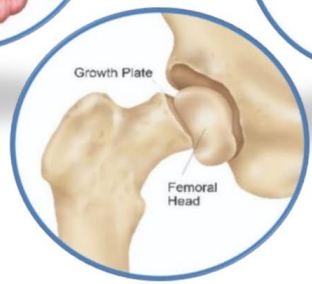
Depression



Obstructive Sleep Apnea

Idiopathic Intracranial Hypertension


PCOS



SCFE


Blount disease

KAS 3: Lab Evaluation (Grade B)

In children **10 y and older,** PHCPs should evaluate for:

- lipid abnormalities
- abnormal glucose metabolism
- abnormal liver function

} in children & adolescents with **obesity** (BMI ≥95th %tile)

- for lipid abnormalities

} in children & adolescents with **overweight** (BMI ≥85th to <95th %tile)

KAS 3.1: Lab Evaluation (Grade C)

In children **10 y and older with overweight** (BMI ≥85th to <95th %tile) PHCPs **may evaluate** for:

- abnormal glucose metabolism
- abnormal liver function

} in the presence of risk factors for T2DM or NAFLD

In children **2 to 9 y of age with obesity** (BMI ≥95th %tile) PHCPs **may evaluate** for:

- lipid abnormalities

KAS 5: Labs and Diagnostic Screening Dyslipidemia (Grades B & C)

PHCPs **should evaluate** for **dyslipidemia** by:

- Obtaining a **fasting lipid panel** in children **10 y and older with overweight and obesity (Grade B)**
- And **may evaluate** for dyslipidemia **in children 2 through 9 y of age with obesity (Grade C)**

KAS 6: Labs and Diagnostic Screening
Prediabetes and Diabetes Mellitus (Grade B)

PHCPs **should evaluate** for **prediabetes and/or diabetes mellitus** with:

- Fasting plasma glucose
- 2-h plasma glucose after 75-g oral glucose tolerance test (OGTT)
- Or glycosylated hemoglobin (HgA1c)

KAS 7: Labs and Diagnostic Screening
NAFLD (Grade A)

PHCPs **should evaluate for NAFLD** by obtaining an:

- Alanine transaminase test (ALT)

KAS 8: Labs and Diagnostic Screening Hypertension (Grade C)

PHCPs **should evaluate** for **hypertension** by:

- **measuring blood pressure at every visit starting at 3 y of age** in children and adolescent **with overweight** and **obesity**

Consensus Recommendations for Other Comorbid Conditions

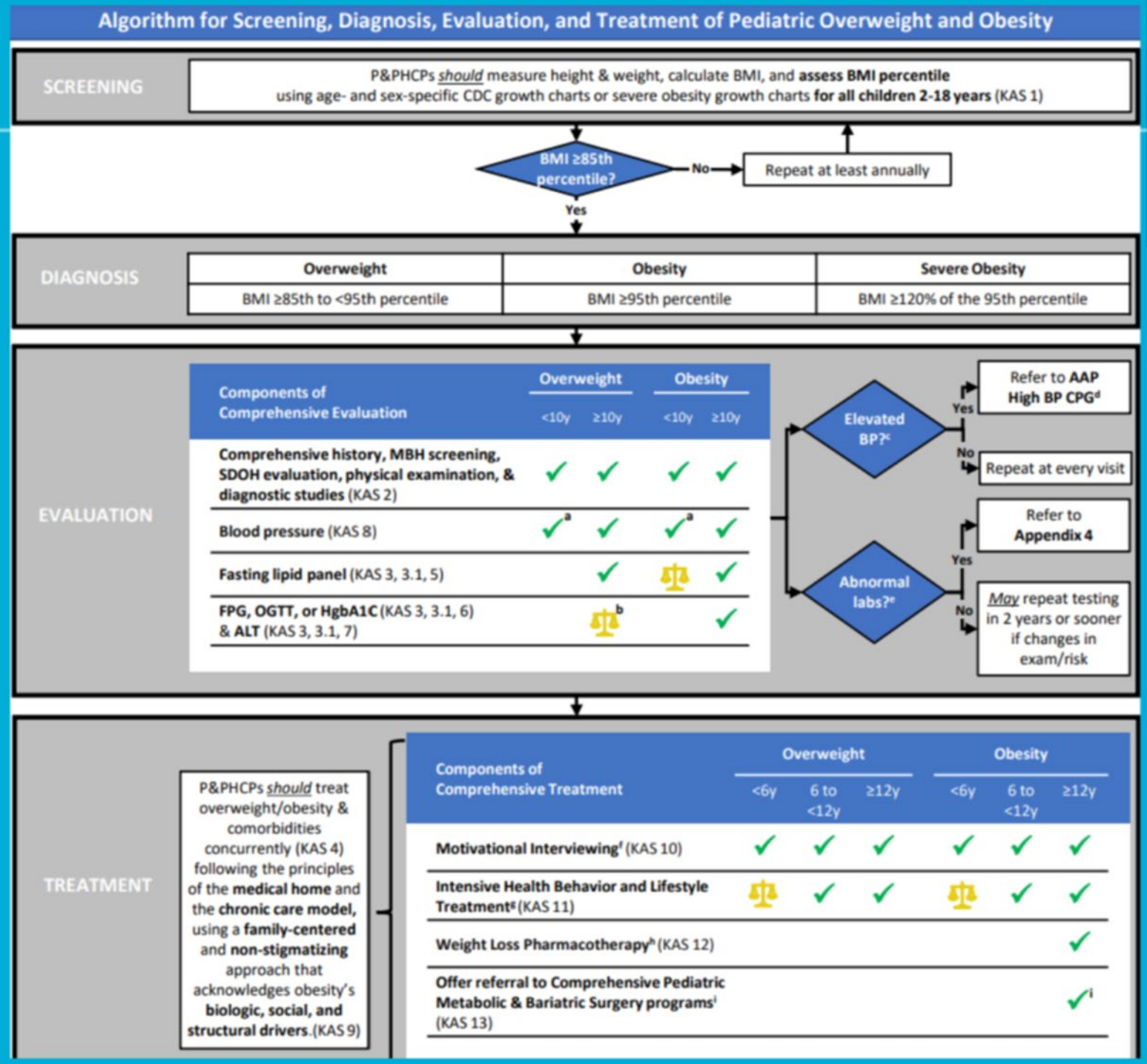
Comorbid Condition	Consensus Recommendation
OSA	• Obtain a sleep history, including symptoms of snoring, daytime somnolence, nocturnal enuresis, morning headaches, and inattention, among children and adolescents with obesity to evaluate for OSA. • Obtain a polysomnogram for children and adolescents with obesity and at least one symptom of disordered breathing.
PCOS	• Evaluate for menstrual irregularities and signs of hyperandrogenism (ie, hirsutism, acne) among female adolescents with obesity to assess risk for PCOS.
Depression	• Monitor for symptoms of depression in children and adolescents with obesity and conduct annual evaluation for depression for adolescents 12 years and older with a formal self-report tool.
Blount	• Perform a musculoskeletal review of systems and physical examination (eg, internal hip rotation in growing child, gait) as part of their evaluation for obesity.
SCFE	• Recommend immediate and complete activity restriction, non–weight-bearing with use of crutches, and refer to an orthopaedic surgeon for emergent evaluation, if SCFE is suspected. PHCPs may consider sending the child to an emergency department if an orthopaedic surgeon is not available.
IIH	• Maintain a high index of suspicion for IIH with new-onset or progressive headaches in the context of significant weight gain, especially for females.

KAS 4: Concurrent Treatment (Grade A)

PHCPs should treat children and adolescents for overweight (BMI ≥85th to <95th %tile) or obesity (BMI≥95th %tile) and **<u>comorbidities concurrently</u>**

Evaluation & Labs: Summarized in Algorithm

- Weight category and age associated with each applicable KAS
- Action to take is based on the result
- Connection to other CPGs



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KAS 9: Treatment Recommendations
Comprehensive Obesity Treatment (Grade B)

PHCPs **should treat overweight and obesity** in children & adolescents following the principles of:

- The **medical home**
- The **chronic care model**
- Using a **family-centered & non-stigmatizing** approach that acknowledges obesity's **biologic, social, and structural drivers**

KAS 10: Motivational Interviewing (Grade B)

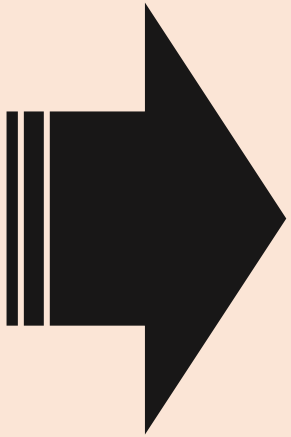
PHCPs **should use motivational interviewing** (MI):

- To engage patients & families in treating overweight and obesity

KAS 11: Intensive Health Behavior and Lifestyle Treatment (Grades B and C)

PHCPs:

- **should provide or refer** children **6 y and older** with overweight and obesity **(Grade B)**
- **may provide or refer children 2 to 5 y of age** with overweight and obesity **(Grade C)**



Intensive health behavior & lifestyle treatment (IHBLT)

Health behavior & 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 3- to 12-mo period**

More about IHBLT

WHO:
- Patient & family
- Multidisciplinary treatment team

WHEN
- Upon diagnosis

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

FORMAT
- Group
- Individual, or
- Both

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

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

CHANNEL
- Face-to-face or
- Virtual

When IHBLT is not Available

Deliver the best available intensive treatment to all children with overweight & obesity

Build collaborations with other specialists and programs in the community

KAS 12: Pharmacotherapy (Grade B)

PHCPs **should offer adolescents 12 y and older with obesity**:

- **Pharmacotherapy** according to medication indications, risks, and benefits, as **an adjunct to health behavior & lifestyle treatment**

Pharmacotherapy

Consensus Recommendation: PHCPs may offer children:

- ages **8 y through 11 y of age** with obesity weight loss pharmacotherapy, according to medication indications, risks, and benefits, as an adjunct to health behavior & lifestyle treatment

Pharmacotherapy

"No current evidence supports weight loss medication use as monotherapy; thus, PHCPs who prescribe weight loss medication to children should provide or refer to intensive behavioral interventions for patients & families as an adjunct to medication therapy."

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Prescriber Qualifications

PHCPs who prescribe weight loss medications should have knowledge of:

- Patient selection criteria
- Medication efficacy
- Adverse effects, and
- Follow-up monitoring guidelines

- Injectable medications may require additional teaching

Pharmacotherapy: Metformin

- Antidiabetic agent which increases insulin sensitivity and decreases blood glucose
- **Off label use**: prediabetes, PCOS, prevention of weight gain with an **atypical antipsychotic**
- Common adverse effects: bloating, nausea, flatulence, diarrhea
- Minimal weight loss in adult and pediatric populations
- Consider as an adjunct to IHBLT when other indications present

Pharmacotherapy: Orlistat

- Intestinal lipase inhibitor
- FDA approved for ≥ 12 years of age
- Adverse effects: steatorrhea, fecal urgency, flatulence
- Minimal BMI reduction

Pharmacotherapy: Phentermine

- Norepinephrine, serotonin, and dopamine reuptake inhibitor with appetite suppression
- FDA approved for ≥ 16 years of age for short-course treatment (3 months)
- Adverse effects include elevated blood pressure and headaches
- Efficacy wanes with the development of tolerance

Pharmacotherapy: Topiramate

- Unclear mechanism of appetite suppression
- FDA approved for ≥2 years of age for epilepsy and ≥12 years of age for headaches
- Off label use for appetite suppression/weight loss
- Adverse effects: cognitive blunting, potential teratogen

Pharmacotherapy: Phentermine and Topiramate

Synergistic effect

- FDA approved in 2022 for ≥ 12 years of age
- Study demonstrated 8-10% decrease in BMI in patients compared with placebo
- Improved TG and HDL in treated patients

Pharmacotherapy: Glucagon-like Peptide-1 Receptor Agonists

Liraglutide and Semaglutide:

- Decrease hunger by slowing gastric emptying and targeting satiety in brain
- FDA approved in children ≥12 years of age with obesity
- Adverse effects: nausea & vomiting

Liraglutide

- Study demonstrated 4.5 kg body weight loss or 5% BMI reduction at 1 year

Semaglutide

- Study demonstrated 16.1 % decrease in BMI at 68 weeks
- Cardiometabolic parameters improved: waist circumference, HbA1c, lipids

Pharmacotherapy: Lisdexamfetamine

- Stimulant
- FDA approved for ≥ 6 years of age with ADHD and for binge eating in patients ≥18 years of age
- **Off label use** for children and adolescents who exhibit a loss of control with food
- No evidence available for efficacy in treatment of obesity

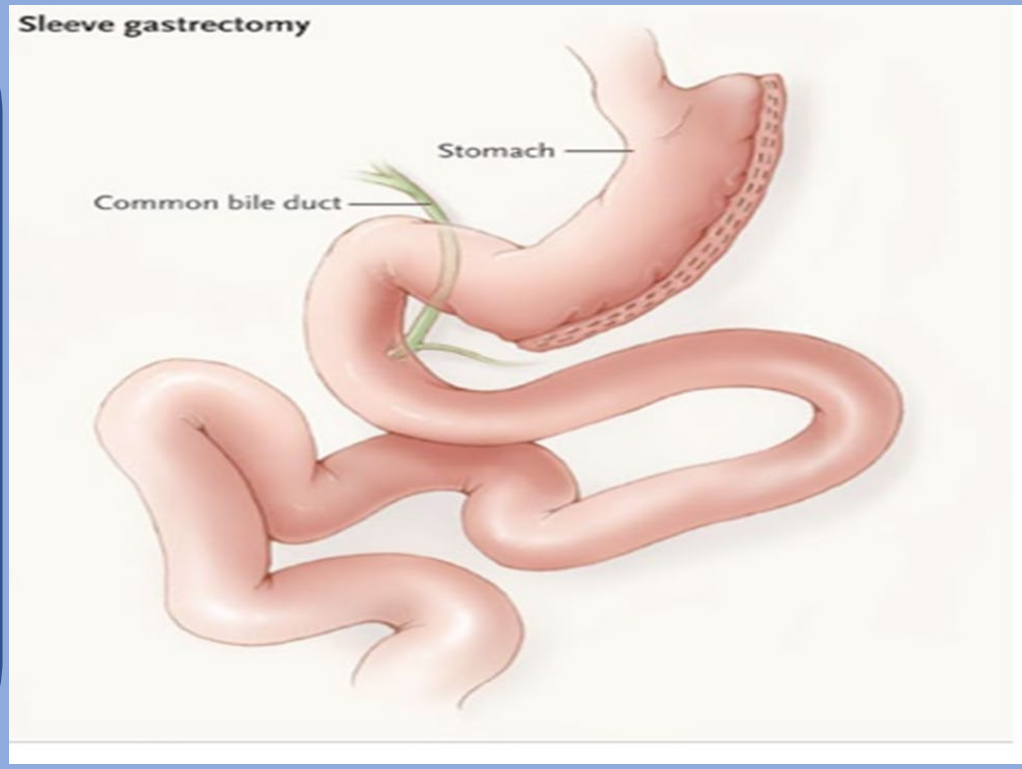
Pharmacotherapy: Summary

	FDA approval	Formulation	Contraindication	Barrier to use	Side Effects
Liraglutide	≥ 12 years	Daily injection	MTC, MEN	Insurance	N/V/D, abdominal pain
Semaglutide	≥ 12 years	Weekly injection	MTC, MEN	Insurance	N/V/D, abdominal pain
Phentermine & Topiramate	≥ 12 years	Daily oral medication	Glaucoma, hyperthyroidism	Insurance	Dizziness, paresthesia, blood pressure
Metformin	Off label	BID oral medication	Kidney disease	Side effects	Bloating, nausea, diarrhea, flatulence
Orlistat	≥ 12 years	TID with meals	Severe malabsorption, severe renal disease	Side effects, frequency of use	Steatorrhea, flatulence, fecal urgency

KAS 13: Metabolic and Bariatric Surgery (Grade C)

PHCPs **should offer referral for adolescents ≥13 y with severe obesity (BMI ≥120% of the 95th %tile for age and sex)** for:

- Evaluation for metabolic & bariatric surgery to local or regional comprehensive multidisciplinary pediatric metabolic & bariatric surgery centers



Criteria for Pediatric Metabolic and Bariatric Surgery

Weight Criteria	Criteria for Comorbid Conditions
Class 2 obesity (BMI≥35 kg/m^2 or 120% of the 95% for age and sex, whichever is lower)	Examples include but not limited to T2DM, IIH, NASH/NAFLD, OSA (AHI >5), Blount disease, SCFE, GERD, CVD risks (HTN, hyperlipidemia, insulin resistance), depressed health-related quality of life
Class 3 obesity (BMI ≥40 kg/m^2 or 140% of the 95% for age and sex, whichever is lower)	Not required but commonly present

AHI, Apnea-Hypopnea Index;

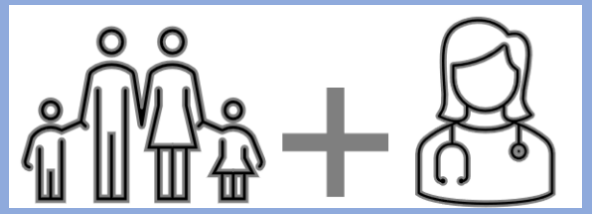
Benefits of Metabolic and Bariatric Surgery

- Durable reduction in BMI
- Improvement or amelioration of obesity-related comorbidities including HTN, T2DM, dyslipidemia, cardiovascular risk factors, weight related quality of life
- Data suggests more likelihood of remission of T2DM or HTN in adolescents compared with adults undergoing bariatric surgery

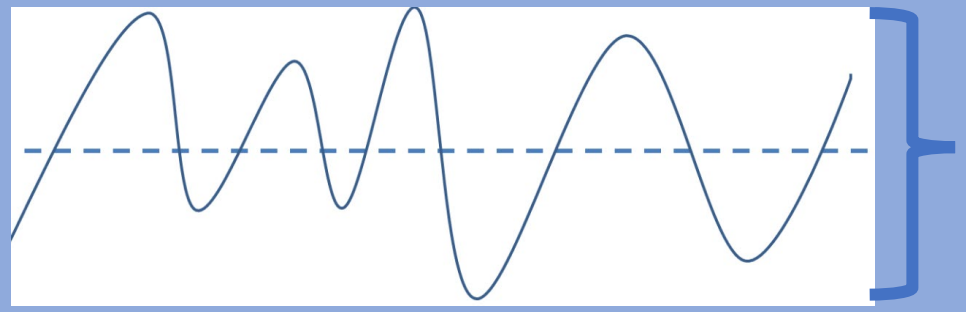
Treatment of Obesity as a Chronic Disease

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/PCHP Partnership



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

Structural & Contextual Factors That Impede & Influence Health & Treatment

- Access to Care
- Weight Bias & Stigma
- Obesogenic Environments
- Adverse Child Experiences
- Racism
- Health Inequities

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Treatment Take-Aways: “As soon as possible, as intensive as available”

PCP PHCP Evidence-Based Toolbox

Motivational Interviewing

Intensive Health Behavior & Lifestyle Treatment

Pharmacotherapy

Bariatric & Metabolic Surgery

AAP Implementation Support Websites

Self-Paced CME Modules

Quality Improvement Opportunities

Clinical Decision Support Tools

Coding Reference Card

FHIR Resource

Multimedia Assets

Family Resources

Website: https://ihcw.aap.org ; www.aap.org/obesitycpg

Regional Pediatric Weight Management Programs

District of Columbia	• I.D.E.A.L Pediatric Weight Management Clinic: Children's National Hospital • Healthy Habits: Hospital for Sick Children • FLiP Program: Children's National Hospital
Maryland Programs	• Weight Management Program at Kennedy Krieger Institute (Lifestyle Group: Fit and Healthy Kids) • Weight Smart: Mount Washington Pediatric Hospital • ReNEW Clinic at Johns Hopkins University: treating pediatric hypertension
Virginia	• NOVA Physician Wellness Center • Children's Fitness Clinic: UVA • INOVA Childhood Obesity Prevention: Healthy Plate Club, Teen Cuisine • Healthy Lifestyles Center: Children's Hospital of Richmond at VCU
Delaware	• Weight Management: Nemour's Children's Health (DE, NJ, PA)
Pennsylvania	• Healthy Weight Program: CHOP • Healthy Weight Program for Children and Teens: Penn State Health Children's Hospital • Pediatric And Adolescent Weight Loss: Weight Loss Surgery and Wellness Center: Reading and Healthy Kids and Teens Weight Program at St. Christopher's Hospital for Children • Weight Management and Wellness Center: Children's Hospital of Pittsburgh

	Regional Pediatric Bariatric Surgery Program
District of Columbia	• Children's National Hospital
Maryland Programs	• John's Hopkins Bariatric Surgery Program
Virginia	• Children's Hospital of Richmond at VCU
Delaware	• Nemour's Children's Health (DE, NJ, PA)
Pennsylvania	• Penn Medicine, Philadelphia • University of Pittsburgh Medical Center

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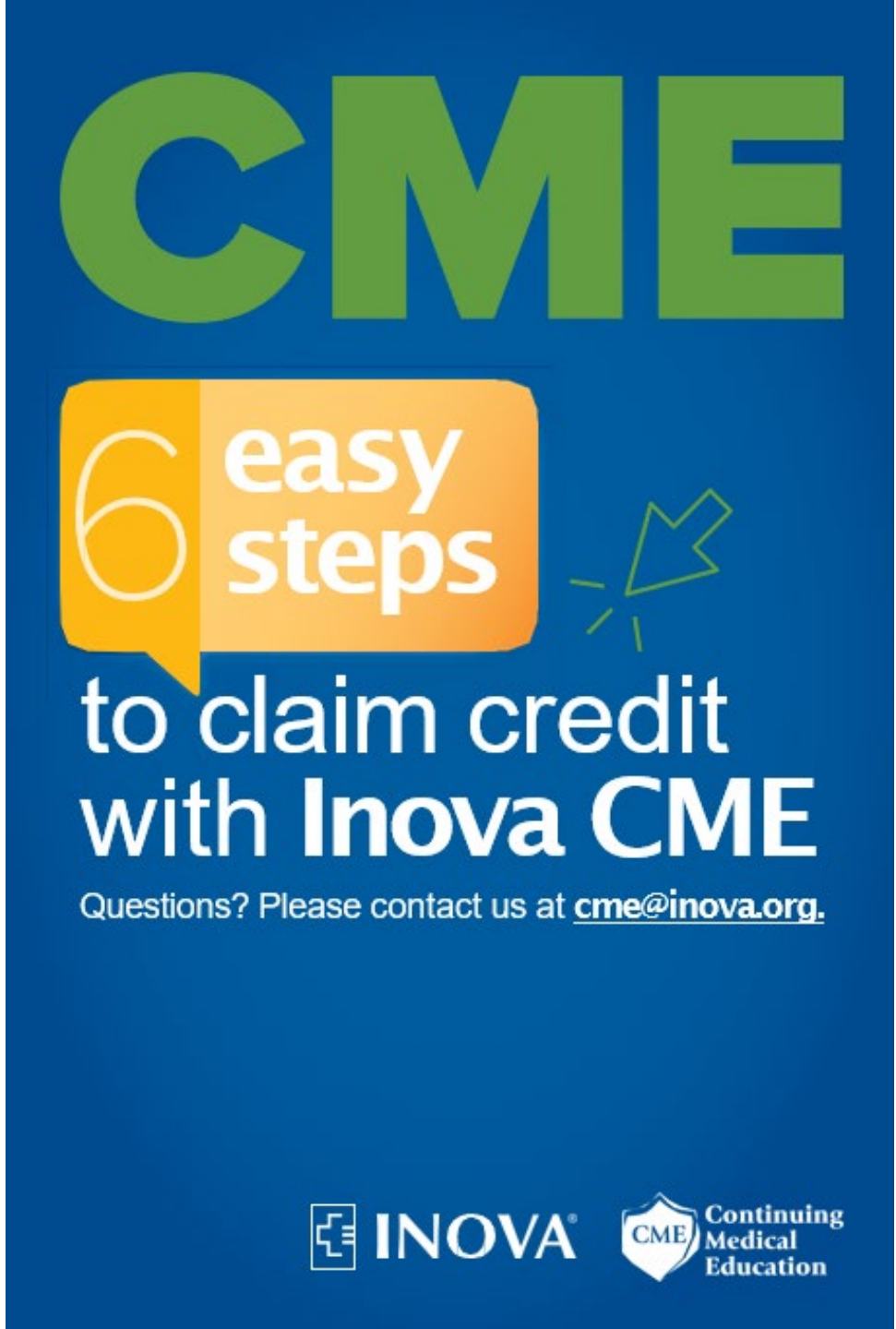
1. Navigate here: https://icmes.inova.org/
2. Log in
3. Under Credits, click "Claim CME Activity Credits"
4. Search for and select "2023 Pediatric Health Network Adolescent Quality Improvement Initiative"
5. Click the "Claim" hyperlink next to the presentation title ("Pediatric Health Network Grand Rounds: New AAP Obesity Guidelines")
6. Complete the evaluation (if available) and click "Submit"

CME must be claimed within 90 days of event!



Thank you!

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