

Pediatric Obesity Clinical Decision Support Chart



5210

- 5** Eat fruits and vegetables at least 5 or more times on most days.
- 2** Limit screen time unrelated to school to 2 hours *or less* daily.
- 1** Get 1 hour *or more* of moderate to vigorous physical activity every day and 20 minutes of vigorous activity at least 3 times a week.
- 0** Drink less sugar. Try water and low-fat milk instead of sugar-sweetened drinks.

Introduction

The *Pediatric Obesity Clinical Decision Support Chart* provides clinicians with practical, point-of-care guidance on the prevention and treatment of obesity. Adapted from the *keep ME healthy* flip chart developed by the Maine Center for Public Health and the Maine Chapter of the American Academy of Pediatrics, the chart also contains the latest information from “Expert Committee Recommendations on the Prevention, Assessment, and Treatment of Child and Adolescent Overweight and Obesity” by Sarah E. Barlow, MD, MPH, and the Expert Committee.

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The recommendations in this publication do not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate.

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Adapted from the *keep ME healthy* chart developed by the Maine Center for Public Health and the Maine Chapter of the American Academy of Pediatrics (copyright 2006 Maine Center for Public Health).

New obesity terminology, assessment, and treatment content from Barlow S, Expert Committee. Expert committee recommendations on the prevention, assessment, and treatment of child and adolescent overweight and obesity: summary report. *Pediatrics*. 2007;120:S164–S192.

➡➡➡➡➡➡ Treatment Interventions for the Overweight Child

BMI Calculation and Classification of BMI Percentage Begins the Process of Evaluation

1. Tailor interventions

- Age appropriate
- Meet patient's and family's readiness to change

2. Key steps

- Start early
- Aim for long-term behavioral/lifestyle change
- Use small steps and gradual change
- Family support/praise
- Measurable goals ("if you can't count it, you can't change it")

3. Techniques

- Focus on successes not failures.
- Realize this is really hard work.
- Adherence from patients will vary; support return to the plan in a nonjudgmental way.
- Expect periods of relapse and be ready to troubleshoot with the patient and family.
- Identify potentially high-risk nutrition and activity behaviors.

4. Mental health

- Evaluate family stressors and comorbidities (eg, depression, anxiety, post-traumatic stress disorder).
- Assess need for mental health intervention (eg, family or individual counseling, medications).
- Consider mental health consult (eg, child psychology).

5. Healthy eating and nutrition education

- Assess patient and family's eating habits.
- Breastfeeding
 - Promote and support breastfeeding.
- Portions
 - Provide age-appropriate information on portion size.
- Structure
 - Encourage daily breakfast.
 - Family dinners with no TV at meals.
 - Limit fast food.

• Balance

- Advise diet with balanced food group emphasis.
- Limit refined sugars, substitute low-fat for whole milk, encourage healthy fats and proteins.
- Limit 100% fruit juice to 4 to 6 oz/d for 1- to 6-year-olds and 8 to 12 oz/d for 7- to 18-year-olds.
- "Parent provides, child decides."

- Aim for reasonable daily target for calorie reduction (eg, 200–300 kcal/d less).

6. Promote increased physical activity

- Assess patient's and family's physical activity habits.
- Advise physical activity of 60 minutes or more daily (including walking) and 20 minutes of vigorous aerobic activity at least 3 days a week. Emphasize outdoor physical activity.
- Encourage a decrease in physical inactivity: Advise family to limit total screen time to 2 hours or less per day (TV, computer, video games, etc).
- Advise no TV or computer in bedroom (and/or remove TV from bedroom).
- Refer to specific community physical activity program (eg, local YMCA/YWCA; Boys/Girls Club; before-/after-school physical activity program).
- Encourage development of family physical activity plan (eg, "move and improve").
- Provide resources on how to find low-cost or free pedometers with age-appropriate goal of daily steps for BOTH patient and parent.

7. Subspecialist referral for comorbidities

- Immediate referrals for orthopedics with hip/knee pain; neurology with headaches/pseudotumor cerebri.
- Pediatric endocrinology with persisting metabolic syndrome/type 2 diabetes; pediatric gastroenterology with progressive alanine transaminase elevation; pulmonology, polysomnography with persistent sleep disorder/daytime fatigue; psychology with persistent depression, anxiety, low self-esteem.

Feeding Guide for Children

Feeding Guide for Children^a

| Food | Age, y | | | | | | Comments |
|--|-------------------------------------|--------------------------|---------------------------------|--------------------------|-------------------------------|--------------------------|--|
| | 2 to 3 | | 4 to 6 | | 7 to 12 | | |
| | Portion Size | Servings | Portion Size | Servings | Portion Size | Servings | |
| Milk and dairy | 1/2 c (4 oz) | 4–5 16–20 oz total | 1/2–3/4 c (4–6 oz) | 3–4 24–32 oz total | 1/2–1 c (4–8 oz) | 3–4 24–32 oz total | The following may be substituted for 1/2 c fluid milk: 1/2–3/4 oz cheese, 1/2 cup yogurt, 2 1/2 tbsp nonfat dry milk |
| Meat, fish, poultry, or equivalent | 1–2 oz | 2 2–4 oz total | 1–2 oz | 2 2–4 oz total | 2 oz | 3–4 6–8 oz total | The following may be substituted for 1 oz meat, fish, or poultry: 1 egg, 2 tbsp peanut butter, 4–5 tbsp cooked legumes |
| Vegetables and fruit | | 4–5 | | 4–5 | | 3–4 | Include one green leafy or yellow vegetable for vitamin A, such as carrots, spinach, broccoli, winter squash, or greens |
| <i>Vegetables</i> Cooked Raw ^b | 2–3 tbsp Few pieces | | 3–4 tbsp Few Pieces | | 1/4–1/2 c Several pieces | | |
| <i>Fruit</i> Raw Canned Juice | 1/2–1 small 2–4 tbsp 3–4 oz | | 1/2–1 small 4–6 tbsp 4 oz | | 1 medium 1/4–1/2 c 4 oz | | Include one vitamin C-rich fruit, vegetable, or juice, such as citrus juices, orange, grapefruit, strawberries, melon, tomato, or broccoli |
| Grain products Whole grain or enriched bread Cooked cereal Dry cereal | 1/2–1 slice 1/4–1/2 c 1/2–1 c | 3–4 | 1 slice 1/2 c 1 c | 3–4 | 1 slice 1/2–1 c 1 c | 4–5 | |

^aAdapted from Lowenberg ME. Development of food patterns in young children. In: Pipes PL, Trahms CM, eds. *Nutrition: Infancy and Childhood*. 5th ed. St Louis, MO: Mosby-Year Book; 1993:168–169. With permission of Elsevier.

^bDo not give to young children until they can chew well.

Tips for Busy Clinicians

Treatment Interventions

Communication

- Deliver a set of consistent key messages—5210.
- Keep a list of good Web sites to give your patients. Have appropriate books and magazines available in your waiting room. Provide books, puzzles, and activity sheets—especially for children—that help promote healthy eating and active living.
- Display educational posters and create a bulletin board for community partners to update.
- Frame your discussions to expand the patient/family perception of what healthy lifestyle changes they can make. Keep goals small, simple, and concrete. Allow for personal choices. Selections a child enjoys will be more easily sustained.
- Have patients set specific behavioral goals and action plans and be sure to ask about these during the next visit or follow-up contact.
- Be aware of the cultural norms of the patient, significance of meals/eating for the family/community, beliefs about special foods, and feelings about body size.

Team Approach

- Be a good role model—be physically active every day and work to make healthy food choices.
- Involve the clinical team in planning and implementing treatment intervention.
- Know your community resources and refer patients to them. These will help support families once they leave your office.
- Behavior change is a long-term process and involving other qualified staff will help ensure success.
- Encourage involvement and change for the whole family and all caregivers.

ABCs of Counseling and Motivating Overweight Children and Families

Ask Open-Ended Questions

- How do you feel about us talking about your physical activity, TV watching, and eating today?
- How concerned are you about your child's weight? Why?
- What are some of the things you might like to change?

Body Language

- Put patient at ease.
- Use eye contact without barriers.
- Convey respect.
- Counsel in a private setting.

Care and Empathy

- Do not criticize.
- Acknowledge patient's feelings.
- Answer questions without sign of judgment.
- Use language that is nonjudgmental
 - “Healthier” food vs “bad” food
 - “Healthier” weight vs “ideal” weight

Resources

Website Resources

BMI Calculators and Information

2000 CDC Growth Charts

www.cdc.gov/growthcharts/

CDC Z Score Data Files

www.cdc.gov/nchs/about/major/nhanes/growthcharts/zscore/zscore.htm

Children's BMI Risk Category Dependent on Age

www.cdc.gov/nccdphp/dnpa/bmi/bmi-for-age.htm

Children's BMI Calculator including plot to graph (for parents)

www.kidsnutrition.org/bodycomp/bmiz2.html

Medscape: Using the BMI-for-Age Growth Charts

www.medscape.com/viewprogram/2640

BMI Adults National Heart, Lung, & Blood Institute

www.nhlbisupport.com/bmi

Free Download for Palm OS Handhelds

www.statcoder.com/growthcharts.htm

National Resources

American Academy of Pediatrics

www.aap.org/obesity

Bright Futures

www.brightfutures.aap.org/web/

Call to Action: Health School Nutrition Environments

www.fns.usda.gov/tn/healthy/calltoaction.html

Harvard Prevention Research Center

www.hsph.harvard.edu/prc/

National Initiative for Children's Healthcare Quality-

Childhood Obesity Action Network

www.nichq.org/NICHQ/Programs/ConferencesAndTraining/ChildhoodObesityActionNetwork.htm

Resources for Parents and Kids

Healthy eating and activities for kids & parents

www.kidnetic.com

KidsHealth

www.kidshealth.org

My Pyramid

www.mypyramid.gov

Overview of the VERB campaign

www.cdc.gov/youthcampaign/

VERB Tween interactive website

www.verbnow.com

Maine Resources

Action for Healthy Kids is about creating health-promoting schools that support sound nutrition and physical activity as part of a total learning environment.

www.healthymainekids.org

Health Policy Partners of Maine

www.mcd.org/HPP

Healthy Maine Partnerships Info & Contacts by Town

www.healthymainepartners.org

Healthy Maine Walks & Sites

www.healthymainewalks.org

Let's Go!

Maine information for kids, teens, parents, childcare, health care providers, schools, and workplaces.

www.letsgo.org

Maine Census Data

www.state.me.us/newsletter/may2001/maine_census_data.htm

Maine Center for Public Health

www.mcph.org

Maine Chapter of the American Academy of Pediatrics

www.maineaap.org

Maine Childrens Alliance/Maine Kids Count Data Book

www.mekids.org

Maine Department of Education

www.maine.gov/education

Maine Governor's Council on Physical Activity

www.mainephysicalactivity.org

Maine Harvard Prevention Research Center - Keep ME Healthy

www.mcph.org/Major_Activities/keepmehealthy.htm

MaineHealth Learning Resource Centers

www.mainehealth.org/lrc

Maine Nutrition Network

www.maine-nutrition.org

Maine Physical Activity & Nutrition [PAN] Program

www.maine.gov/dhhs/boh/hmp/pan/

Maine WIC Program

www.maine.gov/dhhs/wic/

➤➤➤ Obesity Assessment: Findings on Review of Systems and Possible Etiologies ◀◀◀

| Symptom | Possible Etiologies |
|---|---|
| Anxiety, school avoidance, social isolation | Depression |
| Severe recurrent headaches | Pseudotumor cerebri |
| Shortness of breath, exercise intolerance | Asthma, lack of physical conditioning |
| Snoring, apnea, daytime sleepiness | Obstructive sleep apnea, obesity hypoventilation syndrome |
| Sleepiness or wakefulness | Depression |
| Abdominal pain | Gastroesophageal reflux disease, constipation, gall bladder disease, nonalcoholic fatty liver disease ^a |
| Hip pain, knee pain, walking pain | Slipped capital femoral epiphysis, Blount disease, musculoskeletal stress from weight (may be barrier to physical activity) |
| Foot pain | Musculoskeletal stress from weight (may be barrier to physical activity) |
| Irregular menses (<9 per year) | Polycystic ovary syndrome; may be normal if recent menarche |
| Primary amenorrhea | Polycystic ovary syndrome, Prader-Willi syndrome |
| Polyuria, polydipsia | Type 2 diabetes mellitus ^a |
| Unexpected weight loss | Type 2 diabetes mellitus ^a |
| Nocturnal enuresis | Obstructive sleep apnea |
| Tobacco use | Increased cardiovascular risk; may be as form of weight control |

^aThese conditions are often asymptomatic.

Obesity Assessment

➤➤➤ Obesity Assessment: Physical Examination Findings and Possible Etiologies ◀◀◀

| System | Findings | Possible Explanations |
|---------------|--|--|
| Anthropometry | <ul style="list-style-type: none"> • High body mass index percentile • Short stature | <ul style="list-style-type: none"> • Overweight or obesity • Underlying endocrine or genetic condition |
| Vital signs | <ul style="list-style-type: none"> • Elevated blood pressure | <ul style="list-style-type: none"> • Hypertension if systolic or diastolic blood pressure >95th percentile for age, gender, and height on ≥3 occasions |
| Skin | <ul style="list-style-type: none"> • Acanthosis nigricans • Hirsutism, acne • Irritation, inflammation • Violaceous striae | <ul style="list-style-type: none"> • Common in obese children, especially when skin is dark; increased risk of insulin resistance • Polycystic ovary syndrome • Consequence of severe obesity • Cushing syndrome |
| Eyes | <ul style="list-style-type: none"> • Papilledema, cranial nerve VI paralysis | <ul style="list-style-type: none"> • Pseudotumor cerebri |
| Throat | <ul style="list-style-type: none"> • Tonsillar hypertrophy | <ul style="list-style-type: none"> • Obstructive sleep apnea |
| Neck | <ul style="list-style-type: none"> • Goiter | <ul style="list-style-type: none"> • Hypothyroidism |
| Chest | <ul style="list-style-type: none"> • Wheezing | <ul style="list-style-type: none"> • Asthma (may explain or contribute to exercise intolerance) |
| Abdomen | <ul style="list-style-type: none"> • Tenderness • Hepatomegaly | <ul style="list-style-type: none"> • Gastroesophageal reflux disorder, gall bladder disease, nonalcoholic fatty liver disease (NAFLD)^a • NAFLD^a |
| Reproductive | <ul style="list-style-type: none"> • Tanner stage • Apparent micropenis • Undescended testis/micropenis | <ul style="list-style-type: none"> • Premature puberty age <7 years in white girls, age <6 years in black girls, and age <9 years in boys • May be normal penis that is buried in fat • Prader-Willi syndrome |
| Extremities | <ul style="list-style-type: none"> • Abnormal gait, limited hip range of motion • Bowing of tibia • Small hands and feet, polydactyly | <ul style="list-style-type: none"> • Slipped capital femoral epiphysis • Blount disease • Prader-Willi syndrome, Bardet-Biedl syndrome |

^aThese conditions are usually without signs.

Medical Screening by BMI Category^a

| BMI Percentile | Medication Use | Review of Symptoms | Family History (1st and 2nd degree relatives) | Physical Examination | Laboratory Tests |
|---|--|--|--|---|---|
| 5 th –84 th (healthy weight) | Medications that may affect weight gain (eg, neuropsychiatric) | | Obesity, type 2 diabetes, hypertension, lipid, heart disease | BP (correct cuff) | |
| 85 th –94 th (overweight) | Medications that may affect weight gain (eg, neuropsychiatric) | Snoring/sleep; abdominal pain; menstrual irregularities; hip, knee, or leg pain; polyuria; thirst; depression | Obesity, type 2 diabetes, hypertension, lipid, heart disease | BP (correct cuff), acanthosis nigricans, tonsils, goiter, tender abdomen, liver, bowing of legs, limited hip range of motion, optic discs if headaches, acne and hirsutism | <ul style="list-style-type: none"> • Fasting lipid profile • If other risk factors,^b fasting glucose, ALT, AST every 2 years |
| 95 th –<99 th (obese) | Medications that may affect weight gain (eg, neuropsychiatric) | Snoring/sleep; abdominal pain, menstrual irregularities; hip, knee, or leg pain; urination; thirst; depression | Obesity, type 2 diabetes, hypertension, lipid, heart disease | BP (correct cuff), acanthosis nigricans, tonsils, goiter, tender abdomen, liver, bowing of legs, limited hip range of motion, optic discs if headaches, acne and hirsutism | <ul style="list-style-type: none"> • Fasting lipid profile • Fasting glucose, ALT, AST every 2 years |
| ≥99 th | Medications that may affect weight gain (eg, neuropsychiatric) | Snoring/sleep; abdominal pain, menstrual irregularities; hip, knee, or leg pain; urination; thirst; depression | Obesity, type 2 diabetes, hypertension, lipid, heart disease | BP (correct cuff); acanthosis nigricans; tonsils; goiter; tender abdomen; liver; bowing of legs; limp, limited hip range of motion; optic discs if headaches; acne and hirsutism; skin inflammation | <ul style="list-style-type: none"> • Fasting lipid profile • Fasting glucose, ALT, AST every 2 years |

Abbreviations: BMI, body mass index; BP, blood pressure; ALT, alanine transaminase; AST, aspartate transaminase; BUN, blood urea nitrogen.

^aBMI is a screening measure. The higher the BMI, the more likely it is to be correlated with excess fat.

^bRisk factors include family history of obesity-related diseases, including hypertension, early cardiovascular deaths, and strokes, elevated blood pressure (in the patient), hyperlipidemia, and tobacco use.

Reference Values



Reference Values

Plasma Glucose Criteria for the Diagnosis of Impaired Glucose Tolerance in Diabetes^a

| Plasma Glucose | Normal, mg/dL | Impaired, mg/dL | Diabetes, mg/dL |
|-------------------------------------|---------------|-----------------|------------------------------|
| Fasting | <100 | 100–125 (IFG) | ≥126 |
| Oral glucose-tolerance test, 2 h PG | <140 | 140–199 (IGT) | ≥200 |
| Random | | | ≥200 + symptoms ^b |

Abbreviations: IFG, impaired fasting glucose; 2 h PG, plasma glucose at 2 hours postingestion of glucose; IGT, impaired glucose.

^aFrom Hannon TS, Rao G, Arslanian SA. Childhood obesity and type 2 diabetes mellitus. *Pediatrics*. 2005;116:475.

^bPolyuria, polydipsia, weight loss.

Cholesterol^a

| Category | Total Cholesterol, mg/dL | Low-Density Lipoprotein, mg/dL | High-Density Lipoprotein, mg/dL |
|------------|--------------------------|--------------------------------|---------------------------------|
| Acceptable | <170 | <110 | >40 |
| Borderline | 170–199 | 110–129 | |
| Abnormal | ≥200 | ≥130 | <40 is low |

^aAdapted from American Academy of Pediatrics Committee on Nutrition. Cholesterol in children. *Pediatrics*. 1998;101:145.

Triglycerides^a

| Age, y | Normal, mg/dL | |
|--------|---------------|--------|
| | Male | Female |
| 8–9 | 25–90 | 30–115 |
| 10–11 | 30–105 | 35–130 |
| 12–15 | 35–130 | 40–125 |
| 16–19 | 40–145 | 40–125 |

^aFrom the *Third National Health and Nutrition Examination Survey (NHANES III)*, 1988–1994.

Note: Alanine transaminase, aspartate transaminase, blood urea nitrogen, and creatinine reference values vary by laboratory. Consult local laboratory values.

▶▶▶▶ 15-Minute Obesity Prevention Protocol ◀◀◀◀

| Steps | Sample Language | | | | | | | | | |
|---|--|---|----------|---|---|---|------|---|---|----|
| STEP 1. ASSESSMENT | | | | | | | | | | |
| Weight and height, convert to BMI. Provide BMI information. | We checked your child’s body mass index (BMI), which is a way of looking at weight and taking into consideration how tall someone is. Your child’s BMI is in the range where we start to be concerned about extra weight causing health problems. | | | | | | | | | |
| Elicit parent’s concern. | <p>–What concerns, if any, do you have about your child’s weight?</p> <p>– <i>He did jump two sizes this year. Do you think he might get diabetes someday?</i></p> | | | | | | | | | |
| Reflect/probe. | So you’ve noticed a big change in his size and you are concerned about diabetes down the road. What makes you concerned about diabetes in particular? <i>Etc.</i> | | | | | | | | | |
| Sweetened beverages, fruits and vegetables, TV viewing and other sedentary behavior, frequency of fast-food or restaurant eating, consumption of breakfast, and others | <p>(Use verbal questions or brief questionnaires to assess key behaviors.)</p> <p>Example: About how many times a day does your child drink soda, sports drinks, or powdered drinks like Kool-Aid?</p> | | | | | | | | | |
| Provide positive feedback for behavior(s) in optimal range. Elicit response. | <p>You are doing well with sugared drinks.</p> <p><i>I know it’s not healthy. He used to drink a lot of soda, but now I try to give him water whenever possible. I think we are down to just a few soda’s a week.</i></p> | | | | | | | | | |
| Reflect/probe. | So you have been able to make a change without too much stress. | | | | | | | | | |
| Provide neutral feedback for behavior(s) NOT in optimal range. Elicit response. | <p>Your child watches 4 hours of TV on school days. What do you think about that?</p> <p><i>I know it’s a lot, but he gets bored otherwise and starts picking an argument with his little sister.</i></p> | | | | | | | | | |
| Reflect/probe | So watching TV keeps the household calm. | | | | | | | | | |
| STEP 2. AGENDA SETTING | | | | | | | | | | |
| Query which, if any, of the target behaviors parent/child/adolescent may be interested in changing or might be easiest to change. | <p>We’ve talked about eating too often at fast-food restaurants, and how TV viewing is more hours than you’d like. Which of these, if either of them, do you think you and your child could change?</p> <p><i>Well, I think fast food is somewhere we could do better. I don’t know what he would do if he couldn’t watch TV. Maybe we could cut back on fast food to once a week.</i></p> | | | | | | | | | |
| Agree on possible target behavior. | That sounds like a good plan. | | | | | | | | | |
| STEP 3. ASSESS MOTIVATION AND CONFIDENCE | | | | | | | | | | |
| <p>3a: Willingness/Importance</p> <p>On a scale of 0 to 10, with 10 being very important, how important is it for you to reduce the amount of fast food he eats?</p> | | | | | | | | | | |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Not at all | | | Somewhat | | | | Very | | | |

continued

15-Minute Obesity Prevention Protocol

15-Minute Obesity Prevention Protocol, continued

STEP 3. ASSESS MOTIVATION AND CONFIDENCE, continued

3b: Confidence

On a scale of 0 to 10, with 10 being very confident, assuming you decided to change the amount of fast food he eats, how confident are you that you could succeed?

| | | | | | | | | | | |
|------------|---|---|---|---|----------|---|------|---|---|----|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Not at all | | | | | Somewhat | | Very | | | |

3c: Explore IMPORTANCE and CONFIDENCE ratings with the following probes:

Benefits

Barriers

Solutions

You chose 6. Why did you not choose a lower number?

I know all that grease is bad for him.

You chose 6. Why did you not choose a higher number?

It's quick, cheap, and he loves it...especially the toys and fries.

REFLECTION: So there are benefits for both you and him.

What would it take you to move to an 8?

Well, I really want him to avoid diabetes. My mother died of diabetes, and it wasn't pretty...maybe if he started showing signs of it...maybe if I could get into cooking a bit.

STEP 4. SUMMARIZE AND PROBE POSSIBLE CHANGES

Query possible next steps.

So where does that leave you?

OR

From what you mentioned it sounds like eating less fast food may be a good first step.

OR

How are you feeling about making a change?

Probe plan of attack.

What might be a good first step for you and your child?

Or

What might you do in the next week or even day to help move things along?

Or

What ideas do you have for making this happen?

If patient does not have any ideas...

If it's OK with you, I'd like to suggest a few things that have worked for some of my patients.

Summarize change plan, provide positive feedback.

Involving child in cooking or meal preparation

Ordering healthier at fast-food restaurants

Trying some new recipes at home

STEP 5. SCHEDULE FOLLOW-UP

Agree to follow up within X weeks/months.

Let's schedule a visit in the next few weeks/months to see how things went.

If no plan is made

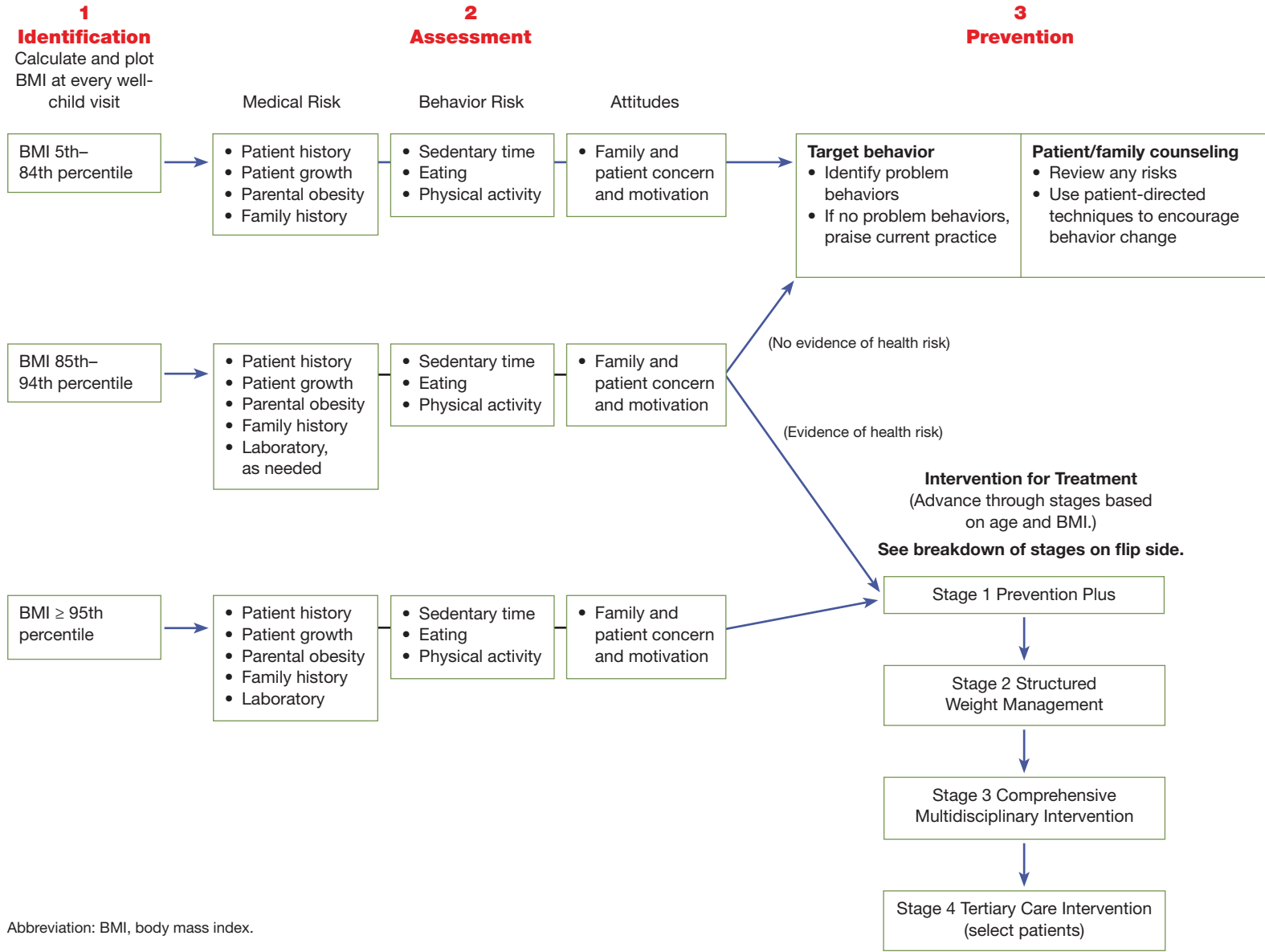
Sounds like you aren't quite ready to commit to making any changes now. How about we follow up with this at your child's next visit?

OR

Although you don't sound ready to make any changes, between now and our next visit you might want to think about your child's weight gain and lowering his diabetes risk.



Universal Assessment of Obesity Risk: Steps to Prevention and Treatment






Abbreviation: BMI, body mass index.

Universal Assessment of Obesity Risk

Universal Assessment of Obesity Risk: Steps to Prevention and Treatment, continued

Intervention for Treatment

(Advance through stages based on age and BMI.)

| | |
|--|---|
| Stage 1 Prevention Plus  | Primary Care Provider Dietary habits and physical activity <ul style="list-style-type: none">5 Eat fruits and vegetables at least 5 or more times on most days.2 Limit screen time unrelated to school to 2 hours or less daily.1 Get 1 hour or more of moderate to vigorous physical activity every day and 20 minutes of vigorous activity at least 3 times a week.0 Drink less sugar. Try water and low-fat milk instead of sugar-sweetened drinks. Behavioral Counseling <ul style="list-style-type: none">• Eating a daily breakfast• Limiting meals outside the home• Family meals 5–6 times/week• Allow child to self-regulate at meals without overly restrictive behavior Goal <ul style="list-style-type: none">• Weight maintenance with growth resulting in decreased BMI Monthly follow-up assessment. After 3–6 months, if no improvement in BMI/weight status, advance to Stage 2. |
| Stage 2 Structured Weight Management  | Primary Care Provider with appropriate training Dietary habits and physical activity <ul style="list-style-type: none">• Develop plan for utilization of balanced macronutrient diet emphasizing low amounts of energy-dense foods• Increased structured daily meals and snacks• Supervised active play of at least 60 minutes/day• Screen time of 1 hour or less/day• Increased monitoring (eg, screen time, physical activity, dietary intake, restaurant logs) by provider, patient, and /or family Goal <ul style="list-style-type: none">• Weight maintenance resulting in a decreasing BMI with age and increasing height. Weight loss not to exceed 1lb/month in children 2–11 years or an average of 2 lb/week in older overweight/obese children and adolescents Monthly follow-up assessment. If no improvement in BMI/weight after 3–6 months, patient should be advanced to Stage 3. |
| Stage 3 Comprehensive Multidisciplinary Intervention  | Weight Management Clinic with multidisciplinary team Eating and Activity <ul style="list-style-type: none">• Same as Stage 2 Behavioral counseling <ul style="list-style-type: none">• Structured behavioral modification program, including food and activity monitoring and development of short-term diet and physical activity goals• Involvement of primary caregivers/families for behavioral modification in children younger than 12 years and training of primary caregivers/families for all children Goals <ul style="list-style-type: none">• Weight maintenance or gradual weight loss until BMI <85% not to exceed 1lb/month in children aged 2–5 years or 2 lbs/week in older obese children and adolescents |
| Stage 4 Tertiary Care Intervention (select patients) | Hospital Setting with expertise in childhood obesity Recommended for children with BMI >95% with significant comorbidities unsuccessful with Stages 1–3 and children with BMI >99% who have shown no improvement under Stage 3 <ul style="list-style-type: none">• Multidisciplinary team with expertise in childhood obesity operating under a designated protocol• Continued diet and activity counseling and consideration of such additions as meal replacement, very low calorie diet, medication, and surgery |

▶▶▶ Definition of Hypertension^a ◀◀◀

- Hypertension is defined as average SBP and/or DBP that is ≥ 95 th percentile for gender, age, and height on ≥ 3 occasions.
- Prehypertension in children is defined as average SBP or DBP levels that are ≥ 90 th percentile but < 95 th percentile.
- As with adults, adolescents with BP levels 120/80 mm Hg should be considered prehypertensive.
- A patient with BP levels > 95 th percentile in a physician's office or clinic, who is normotensive outside a clinical setting, has "white-coat hypertension." ABPM is usually required to make this diagnosis.

Clinical Evaluation of Confirmed Hypertension

| Study or Procedure | Purpose | Target Population |
|---|--|--|
| Evaluation for identifiable causes | | |
| History, including sleep history, family history, risk factors, diet, and habits such as smoking and drinking alcohol; physical examination | History and physical examination help focus subsequent evaluation | All children with persistent BP ≥ 95 th percentile |
| BUN, creatinine, electrolytes, urinalysis, and urine culture | R/O renal disease and chronic pyelonephritis | All children with persistent BP ≥ 95 th percentile |
| CBC | R/O anemia, consistent with chronic renal disease | All children with persistent BP ≥ 95 th percentile |
| Renal U/S | R/O renal scar, congenital anomaly, or disparate renal size | All children with persistent BP ≥ 95 th percentile |
| Evaluation for comorbidity | | |
| Fasting lipid panel, fasting glucose | Identify hyperlipidemia, identify metabolic abnormalities | Overweight patients with BP at 90th–94th percentile; all patients with BP ≥ 95 th percentile; family history of hypertension or CVD; child with chronic renal disease |
| Drug screen | Identify substances that might cause hypertension | History suggestive of possible contribution by substances or drugs |
| Polysomnography | Identify sleep disorder in association with hypertension | History of loud, frequent snoring |
| Evaluation for target-organ damage | | |
| Echocardiogram | Identify LVH and other indications of cardiac involvement | Patients with comorbid risk factors ^b and BP 90th–94th percentile; all patients with BP ≥ 95 th percentile |
| Retinal exam | Identify retinal vascular changes | Patients with comorbid risk factors and BP 90th–94th percentile; all patients with BP ≥ 95 th percentile |
| Additional evaluation as indicated | | |
| ABPM | Identify white-coat hypertension, abnormal diurnal BP pattern, BP load | Patients in whom white-coat hypertension is suspected, and when other information on BP pattern is needed |
| Plasma renin determination | Identify low renin, suggesting mineralocorticoid-related disease | Young children with stage 1 hypertension and any child or adolescent with stage 2 hypertension |
| Renovascular imaging | Identify renovascular disease | Positive family history of severe hypertension Young children with stage 1 hypertension and any child or adolescent with stage 2 hypertension |
| Isotopic scintigraphy (renal scan) | | |
| MRA | | |
| Duplex Doppler flow studies | | |
| 3-Dimensional CT | | |
| Arteriography: DSA or classic | | |
| Plasma and urine steroid levels | Identify steroid-mediated hypertension | Young children with stage 1 hypertension and any child or adolescent with stage 2 hypertension |
| Plasma and urine catecholamines | Identify catecholamine-mediated hypertension | Young children with stage 1 hypertension and any child or adolescent with stage 2 hypertension |

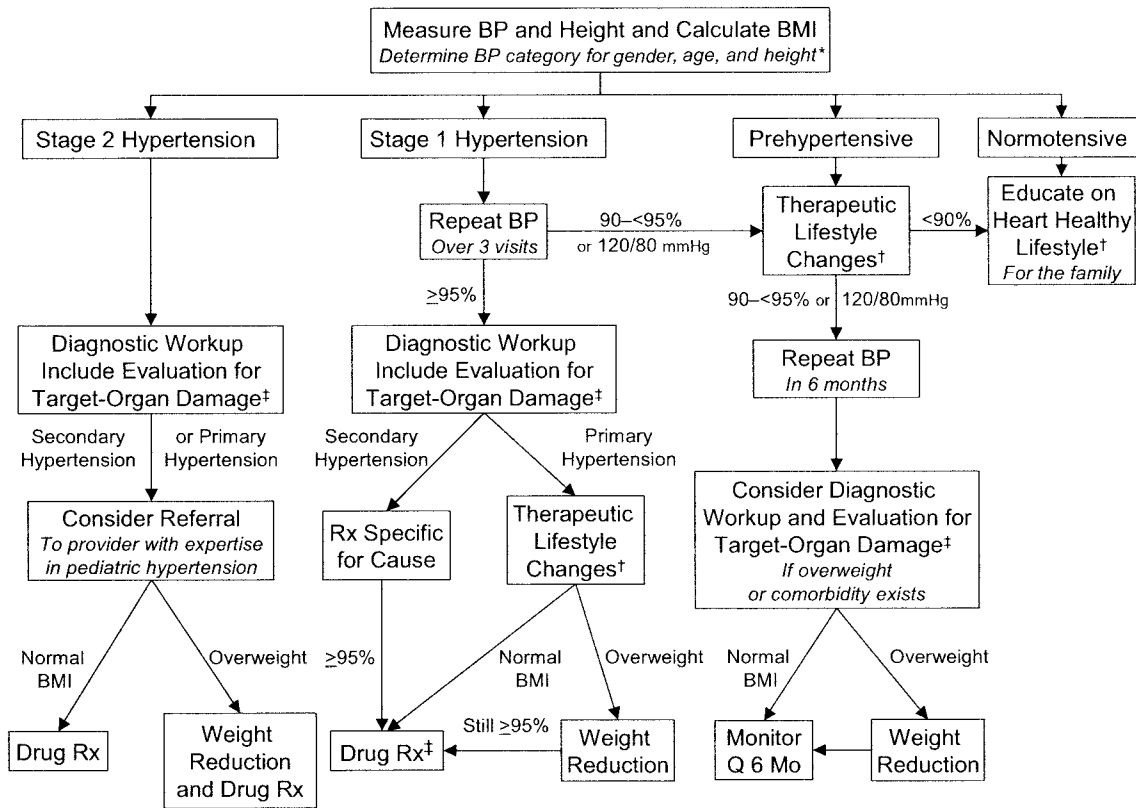
Abbreviations: SBP, systolic blood pressure; DBP, diastolic blood pressure; BP, blood pressure; ABPM, ambulatory blood pressure monitoring; BUN, blood urea nitrogen; R/O, rule out; CBC, complete blood count; U/S, ultrasound; CVD, cardiovascular disease; LVH, left ventricular hypertrophy; MRA, magnetic resonance angiography; CT, computed tomography; DSA, digital-subtraction angiography.

^aSelected excerpts from The fourth report on the diagnosis, evaluation, and treatment of high blood pressure in children and adolescents. *Pediatrics*. 2004;114:555–576.

^bComorbid risk factors also include diabetes mellitus and kidney disease.

Hypertension Management Algorithm

Hypertension Management Algorithm



Abbreviations and symbols: Rx, prescription; Q, every; †, diet modification and physical activity; ‡, especially if younger, very high blood pressure, little or no family history, diabetic, or other risk factors.

Therapeutic Lifestyle Changes

- Weight reduction is the primary therapy for obesity-related hypertension. Prevention of excess or abnormal weight gain will limit future increases in blood pressure.
- Regular physical activity and restriction of sedentary activity will improve efforts at weight management and may prevent an excess increase in blood pressure over time.
- Dietary modification should be strongly encouraged in children and adolescents who have blood pressure levels in the prehypertensive range as well as those with hypertension.
- Family-based intervention improves success.

Indications for Antihypertensive Drug Therapy in Children

Symptomatic hypertension
 Secondary hypertension
 Hypertensive target-organ damage
 Diabetes (types 1 and 2)
 Persistent hypertension despite nonpharmacologic measures

BLOOD PRESSURE LEVELS FOR THE 90TH AND 95TH PERCENTILES OF BLOOD PRESSURE FOR BOYS AGE 1 TO 17 YEARS BY PERCENTILES OF HEIGHT

| Age | Height Percentiles* BP† | Systolic BP (mm Hg) | | | | | | | Diastolic BP (mm Hg) | | | | | | |
|-----|----------------------------|---------------------|-----|-----|-----|-----|-----|-----|----------------------|-----|-----|-----|-----|-----|-----|
| | | →5% | 10% | 25% | 50% | 75% | 90% | 95% | 5% | 10% | 25% | 50% | 75% | 90% | 95% |
| 1 | 90th | 94 | 95 | 97 | 98 | 100 | 102 | 102 | 50 | 51 | 52 | 53 | 54 | 54 | 55 |
| | 95th | 98 | 99 | 101 | 102 | 104 | 106 | 106 | 55 | 55 | 56 | 57 | 58 | 59 | 59 |
| 2 | 90th | 98 | 99 | 100 | 102 | 104 | 105 | 106 | 55 | 55 | 56 | 57 | 58 | 59 | 59 |
| | 95th | 101 | 102 | 104 | 106 | 108 | 109 | 110 | 59 | 59 | 60 | 61 | 62 | 63 | 63 |
| 3 | 90th | 100 | 101 | 103 | 105 | 107 | 108 | 109 | 59 | 59 | 60 | 61 | 62 | 63 | 63 |
| | 95th | 104 | 105 | 107 | 109 | 111 | 112 | 113 | 63 | 63 | 64 | 65 | 66 | 67 | 67 |
| 4 | 90th | 102 | 103 | 105 | 107 | 109 | 110 | 111 | 62 | 62 | 63 | 64 | 65 | 66 | 66 |
| | 95th | 106 | 107 | 109 | 111 | 113 | 114 | 115 | 66 | 67 | 67 | 68 | 69 | 70 | 71 |
| 5 | 90th | 104 | 105 | 106 | 108 | 110 | 112 | 112 | 65 | 65 | 66 | 67 | 68 | 69 | 69 |
| | 95th | 108 | 109 | 110 | 112 | 114 | 115 | 116 | 69 | 70 | 70 | 71 | 72 | 73 | 74 |
| 6 | 90th | 105 | 106 | 108 | 110 | 111 | 113 | 114 | 67 | 68 | 69 | 70 | 70 | 71 | 72 |
| | 95th | 109 | 110 | 112 | 114 | 115 | 117 | 117 | 72 | 72 | 73 | 74 | 75 | 76 | 76 |
| 7 | 90th | 106 | 107 | 109 | 111 | 113 | 114 | 115 | 69 | 70 | 71 | 72 | 72 | 73 | 74 |
| | 95th | 110 | 111 | 113 | 115 | 116 | 118 | 119 | 74 | 74 | 75 | 76 | 77 | 78 | 78 |
| 8 | 90th | 107 | 108 | 110 | 112 | 114 | 115 | 116 | 71 | 71 | 72 | 73 | 74 | 75 | 75 |
| | 95th | 111 | 112 | 114 | 116 | 118 | 119 | 120 | 75 | 76 | 76 | 77 | 78 | 79 | 80 |
| 9 | 90th | 109 | 110 | 112 | 113 | 115 | 117 | 117 | 72 | 73 | 73 | 74 | 75 | 76 | 77 |
| | 95th | 113 | 114 | 116 | 117 | 119 | 121 | 121 | 76 | 77 | 78 | 79 | 80 | 80 | 81 |
| 10 | 90th | 110 | 112 | 113 | 115 | 117 | 118 | 119 | 73 | 74 | 74 | 75 | 76 | 77 | 78 |
| | 95th | 114 | 115 | 117 | 119 | 121 | 122 | 123 | 77 | 78 | 79 | 80 | 80 | 81 | 82 |
| 11 | 90th | 112 | 113 | 115 | 117 | 119 | 120 | 121 | 74 | 74 | 75 | 76 | 77 | 78 | 78 |
| | 95th | 116 | 117 | 119 | 121 | 123 | 124 | 125 | 78 | 79 | 79 | 80 | 81 | 82 | 83 |
| 12 | 90th | 115 | 116 | 117 | 119 | 121 | 123 | 123 | 75 | 75 | 76 | 77 | 78 | 78 | 79 |
| | 95th | 119 | 120 | 121 | 123 | 125 | 126 | 127 | 79 | 79 | 80 | 81 | 82 | 83 | 83 |
| 13 | 90th | 117 | 118 | 120 | 122 | 124 | 125 | 126 | 75 | 76 | 76 | 77 | 78 | 79 | 80 |
| | 95th | 121 | 122 | 124 | 126 | 128 | 129 | 130 | 79 | 80 | 81 | 82 | 83 | 83 | 84 |
| 14 | 90th | 120 | 121 | 123 | 125 | 126 | 128 | 128 | 76 | 76 | 77 | 78 | 79 | 80 | 80 |
| | 95th | 124 | 125 | 127 | 128 | 130 | 132 | 132 | 80 | 81 | 81 | 82 | 83 | 84 | 85 |
| 15 | 90th | 123 | 124 | 125 | 127 | 129 | 131 | 131 | 77 | 77 | 78 | 79 | 80 | 81 | 81 |
| | 95th | 127 | 128 | 129 | 131 | 133 | 134 | 135 | 81 | 82 | 83 | 83 | 84 | 85 | 86 |
| 16 | 90th | 125 | 126 | 128 | 130 | 132 | 133 | 134 | 79 | 79 | 80 | 81 | 82 | 82 | 83 |
| | 95th | 129 | 130 | 132 | 134 | 136 | 137 | 138 | 83 | 83 | 84 | 85 | 86 | 87 | 87 |
| 17 | 90th | 128 | 129 | 131 | 133 | 134 | 136 | 136 | 81 | 81 | 82 | 83 | 84 | 85 | 85 |
| | 95th | 132 | 133 | 135 | 136 | 138 | 140 | 140 | 85 | 85 | 86 | 87 | 88 | 89 | 89 |

*Height percentile determined by standard growth curves.

†Blood pressure percentile determined by a single measurement.

Blood Pressure Levels—Girls

BLOOD PRESSURE LEVELS FOR THE 90TH AND 95TH PERCENTILES OF BLOOD PRESSURE FOR GIRLS AGE 1 TO 17 YEARS BY PERCENTILES OF HEIGHT

| Age | Height Percentiles* BP† | Systolic BP (mm Hg) | | | | | | | Diastolic BP (mm Hg) | | | | | | |
|-----|----------------------------|---------------------|-----|-----|-----|-----|-----|-----|----------------------|-----|-----|-----|-----|-----|-----|
| | | →5% | 10% | 25% | 50% | 75% | 90% | 95% | 5% | 10% | 25% | 50% | 75% | 90% | 95% |
| 1 | 90th | 97 | 98 | 99 | 100 | 102 | 103 | 104 | 53 | 53 | 53 | 54 | 55 | 56 | 56 |
| | 95th | 101 | 102 | 103 | 104 | 105 | 107 | 107 | 57 | 57 | 57 | 58 | 59 | 60 | 60 |
| 2 | 90th | 99 | 99 | 100 | 102 | 103 | 104 | 105 | 57 | 57 | 58 | 58 | 59 | 60 | 61 |
| | 95th | 102 | 103 | 104 | 105 | 107 | 108 | 109 | 61 | 61 | 62 | 62 | 63 | 64 | 65 |
| 3 | 90th | 100 | 100 | 102 | 103 | 104 | 105 | 106 | 61 | 61 | 61 | 62 | 63 | 63 | 64 |
| | 95th | 104 | 104 | 105 | 107 | 108 | 109 | 110 | 65 | 65 | 65 | 66 | 67 | 67 | 68 |
| 4 | 90th | 101 | 102 | 103 | 104 | 106 | 107 | 108 | 63 | 63 | 64 | 65 | 65 | 66 | 67 |
| | 95th | 105 | 106 | 107 | 108 | 109 | 111 | 111 | 67 | 67 | 68 | 69 | 69 | 70 | 71 |
| 5 | 90th | 103 | 103 | 104 | 106 | 107 | 108 | 109 | 65 | 66 | 66 | 67 | 68 | 68 | 69 |
| | 95th | 107 | 107 | 108 | 110 | 111 | 112 | 113 | 69 | 70 | 70 | 71 | 72 | 72 | 73 |
| 6 | 90th | 104 | 105 | 106 | 107 | 109 | 110 | 111 | 67 | 67 | 68 | 69 | 69 | 70 | 71 |
| | 95th | 108 | 109 | 110 | 111 | 112 | 114 | 114 | 71 | 71 | 72 | 73 | 73 | 74 | 75 |
| 7 | 90th | 106 | 107 | 108 | 109 | 110 | 112 | 112 | 69 | 69 | 69 | 70 | 71 | 72 | 72 |
| | 95th | 110 | 110 | 112 | 113 | 114 | 115 | 116 | 73 | 73 | 73 | 74 | 75 | 76 | 76 |
| 8 | 90th | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 70 | 70 | 71 | 71 | 72 | 73 | 74 |
| | 95th | 112 | 112 | 113 | 115 | 116 | 117 | 118 | 74 | 74 | 75 | 75 | 76 | 77 | 78 |
| 9 | 90th | 110 | 110 | 112 | 113 | 114 | 115 | 116 | 71 | 72 | 72 | 73 | 74 | 74 | 75 |
| | 95th | 114 | 114 | 115 | 117 | 118 | 119 | 120 | 75 | 76 | 76 | 77 | 78 | 78 | 79 |
| 10 | 90th | 112 | 112 | 114 | 115 | 116 | 117 | 118 | 73 | 73 | 73 | 74 | 75 | 76 | 76 |
| | 95th | 116 | 116 | 117 | 119 | 120 | 121 | 122 | 77 | 77 | 77 | 78 | 79 | 80 | 80 |
| 11 | 90th | 114 | 114 | 116 | 117 | 118 | 119 | 120 | 74 | 74 | 75 | 75 | 76 | 77 | 77 |
| | 95th | 118 | 118 | 119 | 121 | 122 | 123 | 124 | 78 | 78 | 79 | 79 | 80 | 81 | 81 |
| 12 | 90th | 116 | 116 | 118 | 119 | 120 | 121 | 122 | 75 | 75 | 76 | 76 | 77 | 78 | 78 |
| | 95th | 120 | 120 | 121 | 123 | 124 | 125 | 126 | 79 | 79 | 80 | 80 | 81 | 82 | 82 |
| 13 | 90th | 118 | 118 | 119 | 121 | 122 | 123 | 124 | 76 | 76 | 77 | 78 | 78 | 79 | 80 |
| | 95th | 121 | 122 | 123 | 125 | 126 | 127 | 128 | 80 | 80 | 81 | 82 | 82 | 83 | 84 |
| 14 | 90th | 119 | 120 | 121 | 122 | 124 | 125 | 126 | 77 | 77 | 78 | 79 | 79 | 80 | 81 |
| | 95th | 123 | 124 | 125 | 126 | 128 | 129 | 130 | 81 | 81 | 82 | 83 | 83 | 84 | 85 |
| 15 | 90th | 121 | 121 | 122 | 124 | 125 | 126 | 127 | 78 | 78 | 79 | 79 | 80 | 81 | 82 |
| | 95th | 124 | 125 | 126 | 128 | 129 | 130 | 131 | 82 | 82 | 83 | 83 | 84 | 85 | 86 |
| 16 | 90th | 122 | 122 | 123 | 125 | 126 | 127 | 128 | 79 | 79 | 79 | 80 | 81 | 82 | 82 |
| | 95th | 125 | 126 | 127 | 128 | 130 | 131 | 132 | 83 | 83 | 83 | 84 | 85 | 86 | 86 |
| 17 | 90th | 122 | 123 | 124 | 125 | 126 | 128 | 128 | 79 | 79 | 79 | 80 | 81 | 82 | 82 |
| | 95th | 126 | 126 | 127 | 129 | 130 | 131 | 132 | 83 | 83 | 83 | 84 | 85 | 86 | 86 |

*Height percentile determined by standard growth curves.

†Blood pressure percentile determined by a single measurement.

➤➤➤ Coding for Obesity and Related Comorbidities ◀◀◀

While coding for the care of children with obesity and related comorbidities is relatively straightforward, ensuring that appropriate reimbursement is received for such services is a more complicated matter. Many insurance carriers will deny claims submitted with “obesity” codes (eg, **278.00**), essentially carving out obesity-related care from the scope of benefits. Therefore, coding for obesity services is fundamentally a two-tiered system, in which the first tier requires health care professionals to submit claims using appropriate codes and the second tier involves the practice-level issues of denial management and contract negotiation.

The following is a guide to coding for obesity-related health care services taken from “Obesity and Related Comorbidities Coding Fact Sheet for Primary Care Pediatricians.” For strategies for pediatric practices to handle carrier denials and contractual issues, see “Obesity and Related Comorbidities Coding Fact Sheet for Primary Care Pediatricians” (www.aap.org/obesity/Obesity%20CodingFactSheetAugust07.pdf).

Procedure Codes (Current Procedural Terminology [CPT®] Codes)

Body Fat Composition Testing

There is no separate *Current Procedural Terminology (CPT®)* code for body fat composition testing. This service would be included in the examination component of the evaluation and management (E/M) code reported.

Calorimetry

94690 Oxygen uptake, expired gas analysis; rest, indirect (separate procedure)

or

94799 Unlisted pulmonary service or procedure

[Note: Special report required.]

Glucose Monitoring

95250 Glucose monitoring for up to 72 hours by continuous recording and storage of glucose values from interstitial tissue fluid via a subcutaneous sensor (includes hookup, calibration, patient initiation and training, recording, disconnection, downloading with printout of data)

Routine Venipuncture

36415 Collection of venous blood by venipuncture

36416 Collection of capillary blood specimen (eg, finger, heel, ear stick)

Venipuncture Necessitating Physician’s Skill

36406 Venipuncture, younger than 3 years, necessitating physician’s skill, not to be used for routine venipuncture; other vein

36410 Venipuncture, 3 years or older, necessitating physician’s skill (separate procedure), for diagnostic or therapeutic purposes (not to be used for routine venipuncture)

Digestive System Surgery Codes

43644 Laparoscopy, surgical, gastric restrictive procedure; with gastric bypass and Roux-en-Y gastroenterostomy (Roux limb 150 cm or less)

43645 Laparoscopy, surgical, gastric restrictive procedure; with gastric bypass and small intestine reconstruction to limit absorption

43770 Laparoscopy, surgical, gastric restrictive procedure; placement of adjustable gastric band (gastric band and subcutaneous port components)

43771 Laparoscopy, surgical, gastric restrictive procedure; revision of adjustable gastric band component only

43772 Laparoscopy, surgical, gastric restrictive procedure; removal of adjustable gastric band component only

43773 Laparoscopy, surgical, gastric restrictive procedure; removal and replacement of adjustable gastric band component only

43774 Laparoscopy, surgical, gastric restrictive procedure; removal of adjustable gastric band and subcutaneous port components

43842 Gastric restrictive procedure, without gastric bypass, for morbid obesity; vertical-banded gastroplasty

43843 Gastric restrictive procedure, without gastric bypass, for morbid obesity; other than vertical-banded gastroplasty

43845 Gastric restrictive procedure with partial gastrectomy, pylorus-preserving duodenoileostomy and ileoileostomy (50 to 100 cm common channel) to limit absorption (biliopancreatic diversion with duodenal switch)

43846 Gastric restrictive procedure, with gastric bypass for morbid obesity; with short limb (150 cm or less) Roux-en-Y gastroenterostomy

43847 Gastric restrictive procedure, with gastric bypass for morbid obesity; with small intestine reconstruction to limit absorption

43848 Revision of gastric restrictive procedure for morbid obesity; other than adjustable gastric band (separate procedure)

Healthcare Common Procedure Coding System (HCPCS) Level II Procedure and Supply Codes

CPT codes are also known as Healthcare Common Procedure Coding System (HCPCS) Level I codes. HCPCS also contains Level II codes.

Level II codes (commonly referred to as HCPCS [“hick-picks”] codes) are national codes that are included as part of the Health Insurance Portability and Accountability Act of 1996 (HIPAA) standard procedural transaction coding set along with *CPT* codes.

HCPCS Level II codes were developed to fill gaps in the *CPT* nomenclature. While they are reported in the same way as *CPT* codes, they consist of 1 alphabetic character (A–V) followed by 4 digits. In the past, insurance carriers did not uniformly recognize HCPCS Level II codes. However, with the implementation of HIPAA, carrier software systems must now be able to recognize all HCPCS Level I (*CPT*) and Level II codes.

HCPCS Education and Counseling Codes

S9445 Patient education, not otherwise classified, nonphysician provider, individual, per session

S9446 Patient education, not otherwise classified, nonphysician provider, group, per session

S9449 Weight management classes, nonphysician provider, per session

S9451 Exercise class, nonphysician provider, per session

S9452 Nutrition class, nonphysician provider, per session

S9454 Stress management class, nonphysician provider, per session

S9455 Diabetic management program, group session

S9460 Diabetic management program, nurse visit

S9465 Diabetic management program, dietitian visit

S9470 Nutritional counseling, dietitian visit

Diagnosis Codes (International Classification of Diseases, Ninth Revision, Clinical Modification [ICD-9-CM] Codes)

Circulatory System

401.9 Essential hypertension; unspecified

429.3 Cardiomegaly

Congenital Anomalies

758.0 Down syndrome

759.81 Prader-Willi syndrome

759.83 Fragile X syndrome

759.89 Other specified anomalies (Laurence-Moon syndrome)

Coding for Obesity and Related Comorbidities

Diagnosis Codes (*International Classification of Diseases, Ninth Revision, Clinical Modification [ICD-9-CM] Codes*), continued

Digestive System

- 530.81 Esophageal reflux
 - 564.00 Constipation, unspecified
 - 571.8 Other chronic nonalcoholic liver disease
- Endocrine, Nutritional, Metabolic
- 244.8 Other specified acquired hypothyroidism
 - 244.9 Unspecified hypothyroidism
 - 250.00 Diabetes mellitus without mention of complication, type 2 or unspecified type, not stated as uncontrolled
 - 250.02 Diabetes mellitus without mention of complication, type 2 or unspecified type, uncontrolled
 - 253.8 Other disorders of the pituitary and other syndromes of diencephalohypophysial origin
 - 255.8 Other specified disorders of adrenal glands
 - 256.4 Polycystic ovaries
 - 259.1 Precocious sexual development and puberty, not elsewhere specified
 - 259.9 Unspecified endocrine disorder
 - 272.0 Pure hypercholesterolemia
 - 272.1 Pure hyperglyceridemia
 - 272.2 Mixed hyperlipidemia
 - 272.4 Other and unspecified hyperlipidemia
 - 272.9 Unspecified disorder of lipid metabolism
 - 277.7 Dysmetabolic syndrome X/metabolic syndrome
 - 278.00 Obesity, unspecified
 - 278.01 Morbid obesity
 - 278.02 Overweight
 - 278.1 Localized adiposity
 - 278.8 Other hyperalimentation

Genitourinary System

- 611.1 Hypertrophy of the breast

Mental Disorders

- 300.00 Anxiety state, unspecified
- 300.02 Generalized anxiety disorder
- 300.4 Dysthymic disorder
- 307.50 Eating disorder, unspecified
- 307.51 Bulimia nervosa
- 307.59 Other and unspecified disorders of eating
- 308.3 Other acute reactions to stress
- 308.9 Unspecified acute reaction to stress
- 311 Depressive disorder, not elsewhere classified
- 313.1 Misery and unhappiness disorder
- 313.81 Oppositional defiant disorder

Musculoskeletal System and Connective Tissue

- 732.4 Juvenile osteochondrosis of lower extremity, excluding foot

Nervous System and Sense Organs

- 327.23 Obstructive sleep apnea (adult) (pediatric)
- 327.26 Sleep-related hypoventilation/hypoxemia in conditions classifiable elsewhere
- 327.29 Other organic sleep apnea
- 348.2 Benign intracranial hypertension

Skin and Subcutaneous Tissue

- 701.2 Acquired acanthosis nigricans

Symptoms, Signs, and Ill-Defined Conditions

- 780.51 Insomnia with sleep apnea, unspecified
- 780.52 Insomnia, unspecified
- 780.53 Hypersomnia with sleep apnea, unspecified
- 780.54 Hypersomnia, unspecified
- 780.57 Unspecified sleep apnea
- 780.71 Chronic fatigue syndrome
- 780.79 Other malaise and fatigue
- 783.1 Abnormal weight gain
- 783.3 Feeding difficulties and mismanagement
- 783.40 Lack of normal physiological development, unspecified
- 783.43 Short stature
- 783.5 Polydipsia
- 783.6 Polyphagia
- 783.9 Other symptoms concerning nutrition, metabolism, and development
- 786.05 Shortness of breath
- 789.1 Hepatomegaly
- 790.22 Impaired glucose tolerance test (oral)
- 790.29 Other abnormal glucose; prediabetes not otherwise specified
- 790.4 Nonspecific elevation of levels of transaminase or lactate dehydrogenase (LDH)
- 790.6 Other abnormal blood chemistry (hyperglycemia)

Other

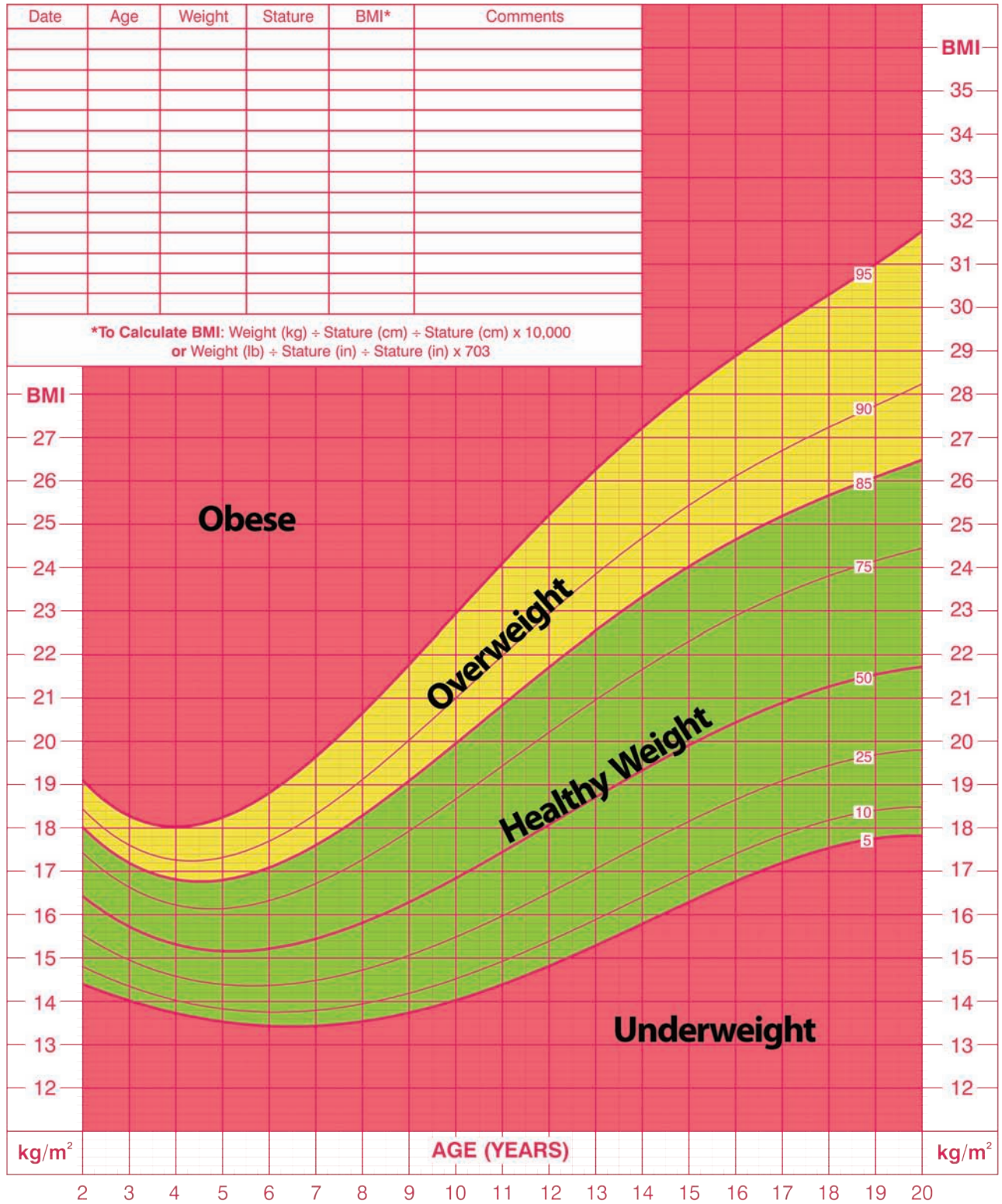
NOTE: The *ICD-9-CM* codes that follow are used to deal with occasions in which circumstances other than a disease or injury are recorded as diagnoses or problems. Some carriers may request supporting documentation for the reporting of V codes.

- V18.0 Family history of diabetes mellitus
- V18.1 Family history of endocrine and metabolic diseases
- V49.89 Other specified conditions influencing health status
- V58.67 Long-term (current) use of insulin
- V58.69 Long-term (current) use of other medications
- V61.0 Family disruption
- V61.20 Counseling for parent-child problem, unspecified
- V61.29 Parent-child problems; other
- V61.49 Health problems with family; other
- V61.8 Health problems within family; other specified family circumstances
- V61.9 Health problems within family; unspecified family circumstances
- V62.81 Interpersonal problems, not elsewhere classified
- V62.89 Other psychological or physical stress not elsewhere classified; other
- V62.9 Unspecified psychosocial circumstance
- V65.19 Other person consulting on behalf of another person
- V65.3 Dietary surveillance and counseling
- V65.41 Exercise counseling
- V65.49 Other specified counseling
- V69.0 Lack of physical exercise
- V69.1 Inappropriate diet and eating habits
- V69.8 Other problems relating to lifestyle; self-damaging behavior
- V69.9 Problem related to lifestyle, unspecified
- V85.51 Body mass index, pediatric, less than 5th percentile for age
- V85.52 Body mass index, pediatric, 5th percentile to less than 85th percentile for age
- V85.53 Body mass index, pediatric, 85th percentile to less than 95th percentile for age
- V85.54 Body mass index, pediatric, greater than or equal to 95th percentile for age

2 to 20 years: Girls
Body mass index-for-age percentiles

NAME _____

RECORD # _____



Published May 30, 2000 (modified 10/16/00).
 SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).
<http://www.cdc.gov/growthcharts>



Body Mass Index (BMI) – Boys

2 to 20 years: Boys

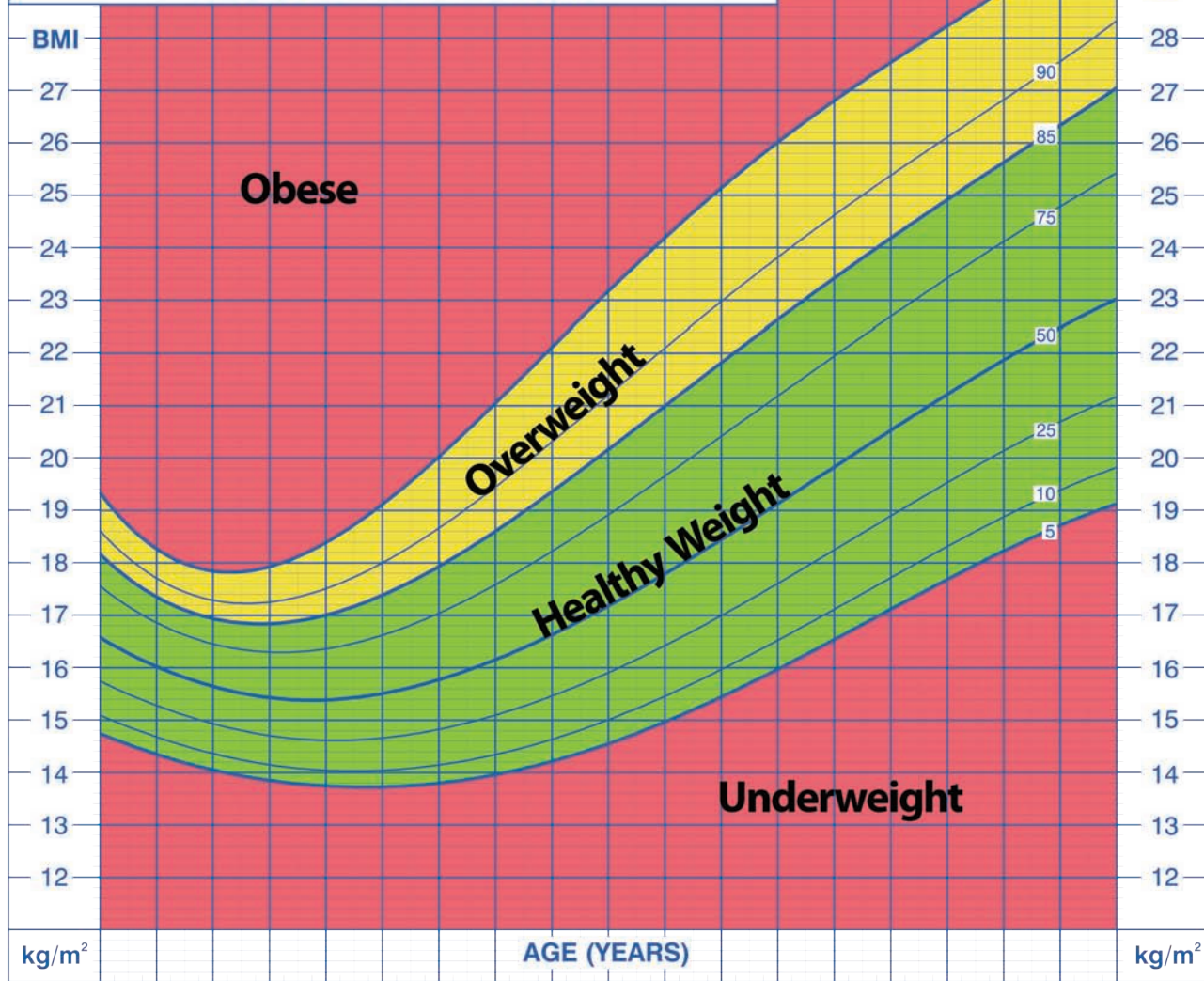
NAME _____

Body mass index-for-age percentiles

RECORD # _____

| Date | Age | Weight | Stature | BMI* | Comments |
|------|-----|--------|---------|------|----------|
| | | | | | |
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*To Calculate BMI: $\text{Weight (kg)} \div \text{Stature (cm)} \div \text{Stature (cm)} \times 10,000$
 or $\text{Weight (lb)} \div \text{Stature (in)} \div \text{Stature (in)} \times 703$



Published May 30, 2000 (modified 10/16/00).

SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).
<http://www.cdc.gov/growthcharts>





Body Mass Index 99th Percentile Cut-Points (kg/m²)



| Age, y | Boys | Girls |
|--------|------|-------|
| 5 | 20.1 | 21.5 |
| 6 | 21.6 | 23.0 |
| 7 | 23.6 | 24.6 |
| 8 | 25.6 | 26.4 |
| 9 | 27.6 | 28.2 |
| 10 | 29.3 | 29.9 |
| 11 | 30.7 | 31.5 |
| 12 | 31.8 | 33.1 |
| 13 | 32.6 | 34.6 |
| 14 | 33.2 | 36.0 |
| 15 | 33.6 | 37.5 |
| 16 | 33.9 | 39.1 |
| 17 | 34.4 | 40.8 |



Weight Loss Targets



| Age, y | BMI 85th–94th Percentile No Risks | BMI 85th–94th Percentile With Risks | BMI 95–98th Percentile | BMI ≥99th Percentile |
|--------|---|--|--|---|
| 2–5 | Maintain weight velocity | Decrease weight velocity or weight maintenance | Weight maintenance | Gradual weight loss of up to 1 lb/mo if BMI is very high (>21 or 22 kg/m ²) |
| 6–11 | Maintain weight velocity | Decrease weight velocity or weight maintenance | Weight maintenance or gradual loss (1 lb/mo) | Weight loss not to exceed an average of 2 lb/wk ^a |
| 12–18 | Maintain weight velocity. After linear growth is complete, maintain weight. | Decrease weight velocity or weight maintenance | Weight loss not to exceed an average of 2 lb/wk ^a | Weight loss not to exceed an average of 2 lb/wk ^a |

Abbreviation: BMI, body mass index.

^aIf greater loss is noted, monitor for causes of excessive weight loss.

The *Pediatric Obesity Clinical Decision Support Chart* offers the latest tools and practice recommendations you need to tackle childhood obesity.

- Step-by-step prevention, assessment, and treatment interventions developed by the CDC for the child who is overweight or obese
- 15-minute obesity prevention protocol
- Hypertension evaluation and management algorithms
- Growth charts spanning birth to age 2 years, including body mass index-for-age percentiles
- Blood pressure levels for boys and girls
- Coding information for obesity-related health services
- ***And more!***

This flipchart was initially developed by the Maine Youth Overweight Collaborative (MYOC), a joint initiative of the Maine Center for Public Health, the Maine-Harvard Prevention Research Center, and the Maine Chapter of the American Academy of Pediatrics. By providing the tools and resources included, MYOC seeks to provide practical support and guidance to health care practices to help improve the prevention, identification, treatment, and outcomes for overweight youth and their families.

These tools are a result of the hard work and support of many individuals associated with MYOC who are dedicated to promoting healthy lifestyles for Maine families. We would like to extend special thanks to the National American Academy of Pediatrics for their willingness to partner to improve and market the Pediatric Obesity Clinical Decision Support Chart.

We would also like to sincerely thank and acknowledge the following funders of the Maine Youth Overweight Collaborative. Their generosity and support for our work made MYOC possible.

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- **Harvard Prevention Research Center (HPRC)**

2004 - 2006

- **The Maine Health Access Foundation (MeHAF)**
- **Harvard Pilgrim Health Care Foundation**
- **American Academy of Pediatrics**

American Academy of Pediatrics

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