Pediatric (Ages 3-17) Obesity Guideline

E V A L U A T I O N   A N D   T R E A T M E N T

Universal Assessment at Well-Child or Obesity Visit (TABLE A)

Obtain height, weight, blood pressure (BP), body mass index (BMI)
Focus history and exam on risk factors, complications, and healthy behaviors/attitudes

Healthy Weight BMI 5-84%ile

Universal Prevention Message

- Evidence-based anticipatory guidance **(TABLE B)**
- Maintain weight trajectory and reassess annually

Overweight BMI 85-94%ile

No Health Risks | **Health Risks**

Obese BMI 95-98%

BMI ≥ 99%ile

Obtain Appropriate Laboratory Tests (TABLE C)

- Fasting lipid profile
- Fasting glucose should be tested for children ≥10 years every 2 years
- Complete other tests as indicated by health risks

Universal Prevention Message

Evidence-based anticipatory guidance **(TABLE B)**

Stage 1: Prevention Plus (TABLE D)

- Progress to next stage if no improvement in BMI/weight after 3-6 months and family willing
- Refer to skilled clinic health professional for motivational interviewing

Maintain weight or decrease percentile and reassess every 3-6 months	Maintain weight or gradual loss† and reassess every 3-6 months	Gradual to moderate weight loss‡ and reassess every 3-6 months

Stage 2: Structured Weight Management (TABLE D)

- Progress to next stage if no improvement in BMI/weight after 3-6 months and family willing
- Consider behavioral health triage/screening

Stage 3: Comprehensive Multidisciplinary Intervention (TABLE D)

- Outside referral to child obesity treatment center if no improvement in BMI/weight after 3-6 months and family willing

† Age 6-11yr = 1lb/month
Age 12-18 yr = 2 lbs/week average

‡ Age 2-5 yr = 1lb/month
Age 6-18 yr = 2 lbs/week average

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TABLE A: Universal Assessment

Under 2 years of Age

- Follow growth parameters on growth chart
- There are no norms for BMI under age 2 years

Age 2-18

- Measure and plot height, weight and BMI with percentiles
- Make weight category diagnosis based on BMI percentiles
  - <5%ile underweight
  - 5-84%ile healthy weight
  - 85-94%ile overweight
  - 95%ile obesity
  - >99%ile
- Measure BP yearly and diagnose hypertension per National Heart, Lung, and Blood Institute (NHLBI) guidelines for age, gender and height percentile[2]
- Take focused family history
  - One obese parent increases child's risk 3x, 2 parents increase 13x
  - Type 2 DM, CV disease with or without premature death, dysplipidemia
- Take a focused review of systems looking for complications

Medical Complications Associated with Obesity in Children

Symptoms	Signs
• Anxiety, school avoidance, social isolation (depression) • Emotional eating/stress eating • Restricting food intake • Polyuria, polydipsia, weight loss (Type 2 DM) • Headaches (pseudotumor cerebri) • Night breathing difficulties (sleep apnea, hypoventilation syndrome, asthma) • Daytime sleepiness (sleep apnea, hypoventilation syndrome, depression) • Hip or knee pain (slipped capital femoral epiphysis) • Oligomenorrhea or amenorrhea (polycystic ovary syndrome) • Frequent trips to the bathroom after eating	• Poor linear growth (hypothyroidism, Cushing's, Prader-Willi syndrome) • Dysmorphic features (genetic disorders including Prader-Willi syndrome) • Acanthosis nigricans (NIDDM, insulin resistance) • Hirsutism and excessive acne (polycystic ovary syndrome) • Violaceous striae (Cushing's syndrome) • Papilledema, cranial nerve VI paralysis (pseudotumor cerebri) • Large tonsils (sleep apnea) • Abdominal tenderness (Gall bladder disease, GERD, non-alcoholic fatty liver disease (NAFLD)) • Hepatomegaly (NAFLD) • Undescended testicle (Prader-Willi syndrome) • Limited hip range of motion (slipped capita femoral epiphysis) • Lower leg bowing (Blount's disease) • Dental damage from purging

- Assess health behaviors and attitudes
  - Dietary behaviors: sweetened beverages, fruits and vegetable intake, frequency of family meals and meals out of home, portion size, daily breakfast consumption
  - Physical activity: amount of moderate exercise per day and screen time
  - Attitudes: self-perception or concern about weight, readiness to change, successes, barriers, challenges
  - Behavioral screening: if not already done as part of well-child visit
- Assess need for further screening tests
  - Based on BMI percentile and history of risk factors, screening lab tests may be indicated

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REFERENCE INFORMATION

TABLE B: Universal Prevention Messages

Give consistent evidenced-based messages for all children regardless of weight:

Under 2 Years of Age
- Encourage breastfeeding
- Encourage healthy eating and activity for the entire family

Over 2 Years of Age
- Promote use of 5-2-1-0 concept
  - 5 servings of fruits and vegetables per day
  - 2 hours or less of screen time per day
  - 1 hours or more of moderate physical activity per day
  - 0 (or almost zero) sweetened beverages per day
- Limit sugar-sweetened beverages
- Remove television from bedrooms
- Eat breakfast every day
- Have regular family meals; limit eating out, especially fast food
- Limit portion sizes

TABLE C: Order the Appropriate Laboratory Tests

BMI 85-94%ile Without Risk Factors
- Fasting lipid profile

BMI 85-94%ile Age 10 Years & Older With Risk Factors
- Fasting lipid profile
- ALT and AST
- Fasting glucose

BMI ≥95%ile Age 10 Years & Older
- Fasting lipid profile
- Fasting glucose
- Other tests as indicated by health risks

- Consider ordering ALT, AST and glucose tests beginning ≥10 years of age and then periodically (every 2 years). Provider decision support tools can be helpful when choosing assessment and treatment options.

- Delivering lab results can be one way to open the conversation about weight and health with family

TABLE D: Treatment Interventions

Typically start at Stage 1 and step up, but based on family and patient readiness, can move ahead stages

Stage 1: Prevention Plus
- Prevention messages plus
  - Referral of ambivalent families to RN Health Coach, Behavioral Health Triage Therapists or other trained professional for motivational interviewing to focus on lifestyle changes for the child and the family
  - Follow-up visits can be group or individual
  - Goal setting and self-monitoring of progress
  - If no progress, proceed to Stage 2

Stage 2: Structured Weight Management
- Stage 1 interventions plus
  - Refer ambivalent families to Behavioral Health Triage for psychosocial assessment
  - Referral of ambivalent families to RN Health Coach, Behavioral Health Triage Therapists or other trained professional for motivational interviewing to focus on lifestyle changes for the child and the family
  - Referral to nutritionist, exercise therapist, and/or integrated behavioral triage referral or counselor
  - Monthly follow-up with primary care clinician

Stage 3: Comprehensive Multi-Disciplinary Intervention
- Outside referral to child obesity treatment program
  - Program to include physician/APP, nutritionist, behavioral health, exercise physiology
  - 8-12 week group sessions with kids and families
- Treatment program may consider
  - Medications
  - Very low calorie diets
  - Surgical options

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References

1. National Initiative for Children's Healthcare Quality. (2007). *Childhood Obesity Action Network: The Healthcare Campaign to Stop the Epidemic.*
2. National Heart, Lung, and Blood Institute (2004, Summer). *Blood Pressure Tables for Children and Adolescents*.
3. Centers for Disease Control and Prevention. *Clinical Growth Charts*. Retrieved from http://www.cdc.gov

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