HealthTeamWorks

Childhood Obesity Guideline

Obesity is preventable.

Screen for Obesity and Co-Morbidity

Growth	• Birth to 2 years: use CDC weight-for-length charts • 2-18 years: use CDC BMI %ile charts • Breast fed infants: use WHO breast feeding charts • Excessive weight gain prior to 6 months of age is associated with later obesity • Overweight = 85-94%ile, Obese ≥95%ile
Blood Pressure *Systolic and Diastolic*	• Begin routine screening at 3 years of age • Pre-hypertension: BP 90-94%, Stage I: 95-99% + 5mm, Stage II: >99% + 5mm • Obtain 3 measurements on separate days for diagnosis of HTN (except if stage II)
History	• Screen all patients, regardless of BMI status, for healthy behaviors using **5-2-1-0**: **5** fruits and vegetables daily, less than **2** hours of screen time daily, **1** hour or more of daily physical activity, **0** sweetened beverages • Family history of obesity, gestational diabetes, type 2 diabetes, early cardiovascular event in parents or grandparents (prior to 55 years in males and 65 years in females) = increased risk
Lab screening	• If BMI >95%ile + 10 years or older: non-fasting lipids, HbA1C, ALT • If family history of early cardiovascular event, obtain lipids beginning at 2 years of age to rule out genetic dyslipidemia

Counsel

1. Engage patient/parent
- » Have you heard of 5-2-1-0?
- » 5-2-1-0 are recommended daily behaviors which improve fitness, health, and weight (see definition of 5-2-1-0 below).

2. Advise
- » How is your family doing with 5-2-1-0? Do you have any ideas for improvement? If no: Are there one or two goals on this Action Plan that your family is ready to work on?

3. Elicit
- » On a scale of 1-10, how confident are you that you will be able to make this change?

4. Assist
- » May I (or someone from my office) follow up with you in 2 weeks to discuss your progress or difficulties with these goals?

Promote Healthy Fit Children and Reduce Obesity

Give consistent messages for all children regardless of BMI

	Infant and Toddlers (0-2 yrs)	Older Children (3-18 yrs)
Nutrition	• Breast feeding offers protection against obesity (exclusivity and duration strengthen association) • To prevent overfeeding: increase parental awareness of hunger and satiety cues and teach comforting with attention rather than food • Introduction of solids prior to 4 months is associated with increased obesity risk • Diet quality decreases with the transition to table foods: encourage fruits and vegetables and discuss avoiding sweetened beverages	• Encourage plate method: ½ plate fruit and vegetables, ¼ lean protein, ¼ whole grain carbohydrate • Vegetables may be fresh, frozen or canned • Family meals are associated with higher dietary quality • Portion sizes are often excessive when eating out • Skipping breakfast is associated with a higher risk of obesity and decreased academic performance • Food insecurity is associated with higher obesity risk
Screen Time	• Television and videos are not recommended <2 years of age	• Television in bedrooms is associated with sleep disruption and increased viewing • Limit screen time to less than 2 hours daily • Empower parents to unplug their children
Physical Activity	• Physical activity is promoted by providing frequent opportunity for movement • Infant and toddlers should not be inactive for more than 60 minutes unless sleeping • Toddlers need several hours of unstructured movement every day	• Physical activity is associated with improved mood, focus and academic achievement • Outside time is associated with increased activity, improved Vitamin D status, and improved focus • Family role modeling and peer support are associated with increased levels of activity
Beverages	• Serve nonfat milk beginning at 1 year of age unless weight-for-length <5% • No sweetened beverages; intake increases risk of obesity • Fruit is more nutritious than juice and does not have the potential risk for obesity and caries	• Nonfat milk and water are preferred for nutrient value and hydration • No sweetened beverages: intake increases risk of obesity (soda, fruit drinks, and sport drinks)
Sleep	• Sleep duration is inversely associated with obesity	• Sleep duration is inversely associated with obesity

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Treatment for Overweight and Obese Children

For the Age-Specific Weight Loss Targets table, see www.healthteamworks.org

Basic Lifestyle Intervention	• Use motivational interviewing techniques and action plan to set at least 1 nutrition and/or physical activity goal for the entire family. (This may be done by medical staff, registered dietitian or healthcare provider.) • Track family goals and refer to community resources: www.healthteamworks.org • Follow up in two weeks, then monthly via office visit, phone or email to assess progress and barriers to change • After success with one behavior, begin work on another behavior • Re-evaluate behaviors, BMI %ile and co-morbities at 3-6 months
Structured Lifestyle	• If no success with basic lifestyle intervention, refer motivated families to a family-based program which incorporates nutrition, physical activity and behavioral components and involves >25 hours of contact over a 6 month period
Physician/RD Specialty Consult	• Consult/refer if co-morbidities persist or if no improvement after 6 months of structured lifestyle

Obesity Co-Morbidities

Disease	Evaluation	Diagnostic Criteria	Rule Outs
Insulin Resistance	Fasting glucose HbA1C	Fasting glucose 100-125 mg/dl or HbA1C 5.7-6.4%	
Type 2 Diabetes	HbA1C	HbA1C ≥ 6.5% Fasting glucose >125	
Hypertension	Blood Pressure x3 UA, Creatinine, CBC, electrolytes, renal US	Age/gender/height tables	
Dyslipidemia	Non-fasting Lipid Panel	LDL >100 mg/dl Non HDL-C >120 Trig >150 HDL <40	If LDL >130, TG >250 or non HDL-C >145 obtain R/O thyroid, liver, renal disease, or diabetes
Non Alcoholic Steatohepatitis (NASH)	ALT If ALT >60 order liver profile	ALT > AST, normal bilirubin & albumin Exclude other liver diseases if ALT >100 or ALT >60 after 3 months	Hepatitis screen, ANA, Anti LKM antibody, Anti smooth muscle ab, Alpha 1 antitrypsin phenotype, cerruloplasmin, alcohol, drugs, toxins, liver ultrasound
Polycystic Ovary Syndrome (PCOS)	Testosterone: free and total DHEAS Prolactin Thyroid profile FSH	Requires 2 of: Oligo- or amenorrhea <9 periods/year Hyperandrogenism clinical or biochemical Polycystic ovaries on US	Hyperprolactinemia Congenital adrenal hyperplasia Cushing's syndrome Ovarian/Adrenal tumors (if testoterone >150 ng/dl or DHEAS >700 mcg/dl)
Depression	PHQ-9 (11-18 years) PSC (6-16 years)	Score ≥11 or Q12 or 13 yes Score ≥30 or Q36 or 37 yes	
Sleep Apnea	Pediatric sleep questionnaire	Sleep study	
Genetic Syndrome	Developmental delay, short stature or dysmorphic		
Endocrine causes	Decreased height velocity	Hypothyroidism, Cushing's	TSH, Free T4, Cortisol AM
Slipped Capital Femoral Epiphysis (SCFE)	Hip X-ray		
Pseudotumor Cerebri	Papillidema/headache		

Resources

Food Access: To access county social services websites/phones: http://www.cdhs.state.co.us/servicebycounty.htm. For online application and screening tools: https://peak.state.co.us/selfservice. WIC, Share Colorado, Operation Frontline, School Meal Program
Physical Activity: City/County Recreational Centers, YMCA, Boys & Girls Clubs, School Programs, Safe Routes to School, http://www.nwf.org/Get-Outside
Nutrition: Colorado Dietetic Association (www.eatrightcolorado.org or 303-757-2060)
Advocacy: www.letsmove.gov, www.rwjf.org/childhoodobesity, www.livewellcolorado.org

For additional resources, visit www.healthteamworks.org

This guideline is designed to assist the primary care provider in the prevention and treatment of childhood obesity. It is not intended to replace a clinician's judgment or establish a protocol for all patients. For national recommendations, references, and additional copies of the guideline go to www.healthteamworks.org or call (720) 297-1681. This guideline was supported through funds from The Colorado Health Foundation.