



The Obese Child (2-18 years old)

STEP 1 - PREVENTION (5 + 2 + 1 + 0 MESSAGING)

STEP 2 - IDENTIFICATION (BMI PERCENTILE)

STEP 3 - ASSESSMENT AND MANAGEMENT

	History	Physical Exam	Management/Next Steps	
	Routine well-child history (past medical, family and social history, review of symptoms)	Routine well-child physical	Routine obesity screening labs (every 2 years): Ages 2-9: fasting lipoprotein panel (only) Ages 10+: fasting lipoprotein panel, fasting glucose and ALT/AST	
Lifestyle Assessment	5+2+1+0 Goals (expanded) (see reference sheet)	N/A	assess readiness to change (see reference sheet) use target behavior toolkits	
C O M O R B I D I T I E S	Pre-diabetes and diabetes	family history polyuria polydipsia	acanthosis nigricans <i>no Hb_{A1c} or insulin as screen</i> t/c: reconfirm labs referral to Endocrinology referral to Healthy Weight Assessment Clinic	
	Hypertension	family history	accurately measured BP percentile t/c: referral if elevated BP on 3 different encounters referral to Healthy Weight Assessment Clinic	
	Dyslipidemia	family history	 recheck labs in 6 months t/c: referral to Lipid Heart Clinic referral to Healthy Weight Assessment Clinic	
	Sleep apnea	sleep apnea verbal screen (see reference sheet)	enlarged tonsils t/c: sleep study or referral to Sleep Clinic referral to Healthy Weight Assessment Clinic	
	NAFLD/NASH		 recheck labs in 2-3 months; next steps as appropriate t/c: referral to Healthy Weight Assessment Clinic	
	Blount/SCFE	hip/knee/shin pain and/or limp	leg-bowing, limp, leg-length discrepancy, abnormal hip range of motion	X-rays +/- orthopaedics referral
	Polycystic ovarian syndrome (PCOS)	PCOS verbal screen (see reference sheet)	hirsutism, acne, acanthosis nigricans	t/c: referral to confirm and/or manage diagnosis
	Pseudotumor cerebri (PTC)	PTC verbal screen (see reference sheet)	papilledema	referral to ophthalmology or neuro-ophthalmology
	Psychosocial	depression screen t/c: ask about bullying, teasing, and/or eating disorders	(nothing specific)	t/c: referral
Rare etiologies	If strong suspicion of hypothyroidism —————→ If positive findings (e.g. striae, weakness, moon facies) —————→ If developmental delay, syndromic features, short stature, other ———→ t/c: certain meds (e.g. antipsychotics, other)		thyroid-stimulating hormone t/c: Cushing work-up work-up as indicated	

REFERENCE – SCREENING QUESTIONS

5+2+1+0 Goals – Questions

- How many servings of fruits and vegetables does the patient eat each day? *Aim for 5 or more servings per day.*
- How many hours of screen time does patient have each day? *Aim for 2 hours or less time.*
- How much moderate to vigorous physical activity does the patient engage in each day? *Aim for 1 hour or more.*
- How many sweetened drinks does the patient drink each day? *Aim for 0 (zero) sweetened drinks.*

5+2+1+0 Expanded Goals – Questions

- Does the patient eat structured snacks and family meals? How often does the patient eat breakfast? *Aim for daily breakfast.*
..... *Aim for 3 meals per day.*
..... *Aim for no more than 2 snacks per day.*
..... *Aim for eating as a family as often as possible.*
..... *Aim not to eat meals or snacks in front of a TV.*
- Approximately how many ounces of 100 percent fruit juice does the patient drink each day? *Aim for no more than 6 ounces per day.*
- How often does the patient eat high fat/high sugar foods per week? *Aim for no more than 4 times per week.*

Sleep apnea verbal screen (need 2 of 3 to be positive):

- Does the patient snore near-nightly?
- Does the patient usually have difficulty breathing during sleep (e.g. work hard to breathe, gasp for air, have retractions)?
- Does the patient have school problems, ADHD or daytime sleepiness (fall asleep at school or while watching TV)?

Polycystic ovarian syndrome screen (need all 3 to be positive):

- Does the patient have a history of irregular menses (irregular for 6 months or no menses for 3 months)?
- Are there signs of androgenization [e.g. increased (facial) hair, balding or severe acne]?
- Are there signs of insulin resistance (e.g. presence of acanthosis or HTN)?

Pseudotumor cerebri verbal screen (need any 1 to be positive):

- Does the patient have near-daily headaches (which may be worse in supine position or upon awakening)?
- Does the patient have double vision or see transient black spots/shadows/patches?
- Does the patient have tinnitus (heartbeat or whooshing sounds in the ears)?

REFERENCE – READINESS TO CHANGE QUESTIONS

- Review lifestyle assessment and gauge the patient's/family's understanding of need for change.
- Which (if any) of these behaviors does the patient/family think they can change?
- Does the patient/family feel they can start making changes within the next 30 days?

REFERENCE - DIAGNOSTIC INTERPRETATIONS

Pre-diabetes and Diabetes

Pre-diabetes diagnostic: Fasting glucose from 100 to 125mg/dL or random glucose from 140 to 199mg/dL

Diabetes diagnostic: Fasting glucose ≥ 126 mg/dL or random glucose ≥ 200 mg/dL

- If negative screen, repeat fasting glucose in 2 years
- If positive, repeat with fasting glucose to confirm. *Hb_{A1c} and/or fasting insulin are not appropriate for screening.*

Hypertension

Diagnostic: 3 or more separate encounters of SBP or DBP ≥ 95 th percentile

Dyslipidemia

Diagnostic: *Fasting* LDL ≥ 110 mg/dL and/or fasting triglyceride ≥ 150 mg/dL and/or fasting HDL < 40 mg/dL

- If negative screen, repeat fasting lipoprotein panel in 2 years.
- If positive, recheck fasting lipoprotein panel in 6 months after attempts at lifestyle modification and/or t/c referral.

NAFLD/NASH

If ALT or AST is elevated, full LFTs should be repeated in 2-3 months.

- If negative screen, repeat ALT/AST in 2 years.
- If repeat ALT or AST is elevated but less than twice normal, consider repeat ALT/AST in 6 months.
- If repeat ALT or AST is still more than twice normal, further work-up is required.

Blount/SCFE

If suspicion for Blount, obtain 2 X-rays:

1. AP film (standing) of bilateral LE from hips to floor with patellas facing forward
2. Lateral film of involved tibia/fibula/femur with patella facing forward and maximal knee extension

If suspicion for SCFE and with *stable* hips, obtain AP and frog lateral of B/L hips on pelvic film.

If suspicion for SCFE and with *unstable* hips, obtain AP and true lateral of B/L hips on pelvic film.