



Primary Care Pocket Guide to Pediatric Obesity Management

INTRODUCTION

The *Primary Care Pocket Guide to Pediatric Obesity Management* is intended to provide primary care physicians with practical guidance on the approach to the obese child. This guide is based upon the most recent literature contained in the “Expert Committee Recommendations on the Prevention, Assessment, and Treatment of Child and Adolescent Overweight and Obesity.” You may review the full supplement at http://pediatrics.aappublications.org/content/vol120/Supplement_4/index.shtml

The recommendations provided in this resource are not an exclusive standard of medical care. As always, medical judgment and variations based on clinical scenario may be appropriate.

TABLE OF CONTENTS

■ Assessment	1
Identification of Risk Factors	2
Review of Systems/Physical Exam	4
■ BMI	5
BMI Calculations	5
BMI Cut Points	6
■ Blood Pressure	7
Percentile Blood Pressure Charts for Girls and Boys	7
Diagnosis	12
■ Laboratory Workup	13
■ Intervention	16
Algorithms through staged intervention	16
■ Coding	19
■ Suggested Resources	20
■ Suggested Resources	22



PREVENTION COUNSELING EVIDENCE-BASED MESSAGES FOR PARENTS

- Support exclusive breastfeeding for 4-6 months
- Limit sugary beverages
- Eat breakfast daily
- Encourage family meals
- Decrease frequency of eating out
- Eat 5 servings of fruits and vegetables per day
- Limit portion sizes
- Get 60 minutes/day of moderate physical activity
- Maintain screen time of 2 hours/day or less
- Remove TV/computer from bedroom

IDENTIFICATION OF RISK FACTORS

Assess Risk:

Assess Family History (*parents, grandparents, siblings*):

- Ethnicity (*Highest Risk: African American, Hispanic, Native American, Pacific Islanders*)
- Family or Personal History of:
 - Cardiovascular Disease <55y men, <65y women
 - Dyslipidemia
 - Obesity
 - Diabetes
 - Hypertension

Assess Dietary Behaviors

- Excessive sweetened beverages
- Minimal fruit and vegetable consumption
- Frequency of eating out versus family meals
- Lack of daily breakfast, skipped meals
- Inappropriate portion sizes
- Snacking habits
- Emotional eating



Assess Physical Activity Behaviors

- Daily activity patterns
- Amount of moderate exercise
- Amount of screen time (*TV, computer, video games, etc.*)

Assess Attitudes

- Perception of weight/Body image
- Readiness/Barriers to change

Example Questions:

- How do you feel about your weight or your child's weight?
- On a scale of 0-10, how ready are you to start making changes in nutrition and/or physical activity?

Targeted Review of Systems/Physical Exam

- Height (%), Weight (%), Pulse, Respirations, Blood Pressure
- BMI with BMI percentile for age and gender

Symptoms	Signs
<ul style="list-style-type: none">• Anxiety, school avoidance, social isolation (<i>Depression</i>)• Polyuria, polydipsia, weight loss (<i>Type 2 diabetes mellitus</i>)• Headaches (<i>Pseudotumor cerebri</i>)• Night breathing difficulties (<i>Sleep apnea, hypoventilation syndrome, asthma</i>)• Day time sleepiness (<i>Sleep apnea, hypoventilation syndrome, depression</i>)• Abdominal pain (<i>Gastroesophageal reflux, gall bladder disease, constipation</i>)• Hip or Knee pain (<i>Slipped capital femoral epiphysis</i>)• Oligomenorrhea or amenorrhea (<i>Polycystic ovary syndrome</i>)	<ul style="list-style-type: none">• Poor linear growth (<i>Hypothyroidism, Cushing's, Prader-Willi syndrome</i>)• Dysmorphic features (<i>Genetic disorders, including Prader-Willi syndrome</i>)• Acanthosis nigricans (<i>NIDDM, insulin resistance</i>)• Hirsutism and excessive acne (<i>Polycystic ovary syndrome</i>)• Violaceous striae (<i>Cushing's syndrome</i>)• Papilledema, cranial nerve VI paralysis (<i>Pseudotumor cerebri</i>)• Tonsillar hypertrophy (<i>Sleep apnea</i>)• Abdominal tenderness (<i>Gall bladder diseases, GERD, NAFLD</i>)• Hepatomegaly (<i>Nonalcoholic fatty liver disease (NAFLD)</i>)• Undescended testicle (<i>Prader-Willi syndrome</i>)• Limited hip range of motion (<i>Slipped capital femoral epiphysis</i>)• Lower leg bowing (<i>Blount's disease</i>)

Adapted from COAN Implementation Guide.

Calculate BMI and Classify

$$\text{BMI} = \frac{\text{Weight (lb)}}{\text{Height (in)} \times \text{Height (in)}} \times 703$$

$$\text{BMI} = \frac{\text{Weight (kg)}}{\text{Height (cm)} \times \text{Height (cm)}} \times 10,000$$

e.g. BMI = $\frac{93 \text{ kg}}{159 \text{ cm} \times 159 \text{ cm}} \times 10,000 = 36.7$

PERCENTILE	CLASSIFICATION
5th - <85th	HEALTHY WEIGHT
85th - <95th	OVERWEIGHT
≥ 95th	OBESITY
≥ 120% of 95th (or BMI ≥ 35)	CLASS 2 OBESITY
≥ 140% of 95th (or BMI ≥ 40)	CLASS 3 OBESITY

Classification Adapted from the Expert Committee Recommendations Summary Report and Skinner & Skelton's Prevalence and Trends in Obesity and Severe Obesity Among Children in the United States, 1999-2012 (2014). Refer to BMI percentile growth charts at www.cdc.gov.

BMI Percentile Cut Points

Age (years)	85%		95%		99%	
	Boys	Girls	Boys	Girls	Boys	Girls
2	18.2	18	19.3	19.1	—	—
3	17.3	17.2	18.2	18.3	—	—
4	16.9	16.8	17.8	18	—	—
5	16.8	16.8	17.9	19.3	20.1	21.5
6	17	17.1	18.4	18.8	21.6	23
7	17.4	17.6	19.2	19.7	23.6	24.6
8	18	18.3	20.1	20.7	25.6	26.4
9	18.6	19.1	21.1	21.8	27.6	28.2
10	19.4	20	22.2	23	29.3	29.9
11	20.2	20.9	23.2	24.1	30.7	31.5
12	21	21.7	24.2	25.3	31.8	33.1
13	21.9	22.6	25.2	26.3	32.6	34.6
14	22.7	23.3	26	27.3	33.2	36
15	23.5	24	26.8	28.1	33.6	37.5
16	24.2	24.7	27.6	28.9	33.9	39.1
17	24.9	25.2	28.3	29.6	34.4	40.8
18	25.7	25.7	29	30.3	34.4	40.8
19	26.4	26.1	29.7	31	34.4	40.8
20	27	26.5	30.6	31.8	34.4	40.8

Boys

Ages 3-5

Blood Pressure Levels for Boys by Age and Height Percentile*															
Age by year	BP %	Systolic BP (mmHg)							Diastolic BP (mmHg)						
		← Percentile of Height →							← Percentile of Height →						
		5 th	10 th	25 th	50 th	75 th	90 th	95 th	5 th	10 th	25 th	50 th	75 th	90 th	95 th
3	90 th	100	101	103	105	107	106	109	59	59	60	61	62	63	63
	95 th	104	105	107	109	110	112	113	63	63	64	65	66	67	67
	99 th	111	112	114	116	118	119	120	71	71	72	73	74	75	75
4	90 th	102	103	105	107	109	110	111	62	63	64	65	66	66	67
	95 th	105	107	109	111	112	114	115	66	67	68	69	70	71	71
	99 th	113	114	116	118	120	121	122	74	75	76	77	78	78	79
5	90 th	104	105	106	106	110	111	112	65	66	67	68	69	69	70
	95 th	106	109	110	112	114	115	116	69	70	71	72	73	74	74
	99 th	115	116	118	120	121	123	123	77	78	79	80	81	81	82

Girls

Ages 3-5

Blood Pressure Levels for Girls by Age and Height Percentile*															
Age by year	BP %	Systolic BP (mmHg)							Diastolic BP (mmHg)						
		← Percentile of Height →							← Percentile of Height →						
		5 th	10 th	25 th	50 th	75 th	90 th	95 th	5 th	10 th	25 th	50 th	75 th	90 th	95 th
3	90 th	100	100	102	103	104	106	106	61	62	62	63	64	64	65
	95 th	104	104	105	107	108	109	110	65	66	66	67	68	68	69
	99 th	111	111	113	114	115	116	117	73	73	74	74	75	76	76
4	90 th	101	102	103	104	106	107	108	64	64	65	66	67	67	68
	95 th	106	106	107	108	110	111	112	68	68	69	70	71	71	72
	99 th	112	113	114	115	117	118	119	76	76	76	77	78	79	79
5	90 th	103	103	105	106	107	109	109	66	67	67	68	69	69	70
	95 th	107	107	108	110	111	112	113	70	71	71	72	73	73	74
	99 th	114	114	116	117	118	120	78	78	78	79	79	80	81	81

Adapted from the Fourth Report on the Diagnosis, Evaluation, and Treatment of High Blood Pressure in Children and Adolescents

Boys

Ages 6-11

Blood Pressure Levels for Boys by Age and Height Percentile*																
Age by year	BP %	Systolic BP (mmHg)							Diastolic BP (mmHg)							
		← Percentile of Height →							← Percentile of Height →							
		5 th	10 th	25 th	50 th	75 th	90 th	95 th	5 th	10 th	25 th	50 th	75 th	90 th	95 th	
6	90 th	105	106	108	110	111	113	113	68	68	69	70	71	72	72	
	95 th	109	110	112	114	115	117	117	72	72	73	74	75	76	76	
	99 th	116	117	119	121	123	124	125	80	80	81	82	83	84	84	
7	90 th	106	107	109	111	113	114	115	70	70	71	72	73	74	74	
	95 th	110	111	113	115	117	118	119	74	74	75	76	77	78	78	
	99 th	117	118	120	122	124	125	126	82	82	83	84	85	86	86	
8	90 th	107	109	110	112	114	115	116	71	72	72	73	74	75	76	
	95 th	111	112	114	116	118	119	120	75	76	77	78	79	79	80	
	99 th	119	120	122	123	125	127	127	83	84	85	86	87	87	88	
9	90 th	109	110	112	114	115	117	118	72	73	74	75	76	76	77	
	95 th	113	114	116	118	119	121	121	76	77	78	79	80	81	81	
	99 th	120	121	123	125	127	128	129	84	85	86	87	88	88	89	
10	90 th	111	112	114	115	117	119	119	73	73	74	75	76	77	78	
	95 th	115	116	117	119	121	122	123	77	78	79	80	81	81	82	
	99 th	122	123	125	127	128	130	130	85	86	86	88	88	89	90	
11	90 th	113	114	115	117	119	120	121	74	74	75	76	77	78	78	
	95 th	117	118	119	121	123	124	125	78	78	79	80	81	82	82	
	99 th	124	125	127	129	130	132	132	86	86	87	88	89	90	90	

Adapted from the Fourth Report on the Diagnosis, Evaluation, and Treatment of High Blood Pressure in Children and Adolescents

Girls

Ages 6-11

Blood Pressure Levels for Girls by Age and Height Percentile*															
Age by year	BP %	Systolic BP (mmHg)							Diastolic BP (mmHg)						
		← Percentile of Height →							← Percentile of Height →						
		5 th	10 th	25 th	50 th	75 th	90 th	95 th	5 th	10 th	25 th	50 th	75 th	90 th	95 th
6	90 th	104	105	106	108	109	110	111	68	68	69	70	70	71	72
	95 th	108	109	110	111	113	114	115	72	72	73	74	74	75	76
	99 th	115	116	117	119	120	121	122	80	80	80	81	82	83	83
7	90 th	106	107	108	109	111	112	113	69	70	70	71	72	72	73
	95 th	110	111	112	113	115	116	116	73	74	74	75	76	76	77
	99 th	117	118	119	120	122	123	124	81	81	82	82	83	84	84
8	90 th	108	109	110	111	113	114	114	71	71	71	72	73	74	74
	95 th	112	112	114	115	116	118	118	75	75	75	76	77	78	78
	99 th	119	120	121	122	123	125	125	82	82	83	83	84	85	86
9	90 th	110	110	112	113	114	116	116	72	72	72	73	74	75	75
	95 th	114	114	115	117	118	119	120	76	76	76	77	78	79	79
	99 th	121	121	123	124	125	127	127	83	83	84	84	85	86	87
10	90 th	112	112	114	115	116	118	118	73	73	73	74	75	76	76
	95 th	116	116	117	119	120	121	122	77	77	77	78	79	80	80
	99 th	123	123	125	126	127	129	129	84	84	85	86	86	87	88
11	90 th	114	114	116	117	118	119	120	74	74	74	75	76	77	77
	95 th	118	118	119	121	122	123	124	78	78	78	79	80	81	81
	99 th	125	125	126	128	129	130	131	85	85	86	87	87	88	89

Adapted from the Fourth Report on the Diagnosis, Evaluation, and Treatment of High Blood Pressure in Children and Adolescents

Boys

Ages 12-18

Blood Pressure Levels for Boys by Age and Height Percentile*																
Age by year	BP %	Systolic BP (mmHg)							Diastolic BP (mmHg)							
		← Percentile of Height →							← Percentile of Height →							
		5 th	10 th	25 th	50 th	75 th	90 th	95 th	5 th	10 th	25 th	50 th	75 th	90 th	95 th	
12	90 th	115	116	118	120	121	123	123	74	75	75	76	77	78	79	
	95 th	119	120	122	123	125	127	127	78	79	80	81	82	82	83	
	99 th	126	127	129	131	133	134	135	86	87	88	89	90	90	91	
13	90 th	117	118	120	122	124	125	126	75	75	76	77	78	79	79	
	95 th	121	122	124	126	128	129	130	79	79	80	81	82	83	83	
	99 th	128	130	131	133	135	136	137	87	87	88	89	90	91	91	
14	90 th	120	121	123	125	126	128	128	75	76	77	78	79	79	80	
	95 th	124	125	127	128	130	132	132	80	80	81	82	83	84	84	
	99 th	131	132	134	136	138	139	140	87	88	89	90	91	92	92	
15	90 th	122	124	125	127	129	130	131	76	77	78	79	80	80	81	
	95 th	126	127	129	131	133	134	135	81	81	82	83	84	85	85	
	99 th	134	135	136	138	140	142	142	88	89	90	91	92	93	93	
16	90 th	125	126	128	130	131	133	134	78	78	79	80	81	82	82	
	95 th	129	130	132	134	135	137	137	82	83	83	84	85	86	87	
	99 th	136	137	139	141	143	144	145	90	90	91	92	93	94	94	
17-18	90 th	127	128	130	132	134	135	136	80	80	81	82	83	84	84	
	95 th	131	132	134	136	138	139	140	84	85	86	87	87	88	89	
	99 th	139	140	141	143	145	146	147	92	93	93	94	95	96	97	

Adapted from the Fourth Report on the Diagnosis, Evaluation, and Treatment of High Blood Pressure in Children and Adolescents

Girls

Ages 12-18

Blood Pressure Levels for Girls by Age and Height Percentile*															
Age by year	BP %	Systolic BP (mmHg)							Diastolic BP (mmHg)						
		← Percentile of Height →							← Percentile of Height →						
		5 th	10 th	25 th	50 th	75 th	90 th	95 th	5 th	10 th	25 th	50 th	75 th	90 th	95 th
12	90 th	116	116	117	119	120	121	122	75	75	75	76	77	78	78
	95 th	119	120	121	123	124	125	126	79	79	79	80	81	82	82
	99 th	127	127	128	130	131	132	133	86	86	87	88	88	89	90
13	90 th	117	118	119	121	122	123	124	76	76	76	77	78	79	79
	95 th	121	122	123	124	126	127	128	80	80	80	81	82	83	83
	99 th	128	129	130	132	133	134	135	87	87	88	89	89	90	91
14	90 th	119	120	121	122	124	125	125	77	77	77	78	79	80	80
	95 th	123	123	125	126	127	129	129	81	81	81	82	83	84	84
	99 th	130	131	132	133	135	136	136	88	88	89	90	90	91	92
15	90 th	120	121	122	123	125	126	127	78	78	78	79	80	81	81
	95 th	124	125	126	127	129	130	131	82	82	82	83	84	85	85
	99 th	131	132	133	134	136	137	138	89	89	90	91	91	92	93
16	90 th	121	122	123	124	126	127	128	78	78	79	80	81	81	82
	95 th	125	126	127	128	130	131	132	82	82	83	84	85	85	86
	99 th	132	133	134	135	137	138	139	90	90	90	91	92	93	93
17-18	90 th	122	122	123	125	126	127	128	78	79	79	80	81	81	82
	95 th	125	126	127	129	130	131	132	82	83	83	84	85	85	86
	99 th	133	133	134	136	137	138	139	90	90	91	91	92	93	93

Adapted from the Fourth Report on the Diagnosis, Evaluation, and Treatment of High Blood Pressure in Children and Adolescents

Blood Pressure Diagnosis (*refer to BP percentile charts*)

	SBP or DBP Percentile*	Frequency of BP Measurement
Normal	< 90 th	Recheck at next scheduled physical examination.
Prehypertension	90 th to < 95 th or if BP exceeds 120/80 mmHg even if below 90 th percentile†	Recheck in 6 months.
Stage 1 hypertension	95 th percentile to the 99 th percentile plus 5 mmHg	Recheck in 1-2 weeks or sooner if the patient is symptomatic; if persistently elevated on two additional occasions, evaluate or refer to source of care within 1 month.
Stage 2 hypertension	> 99 th percentile plus 5 mmHg	Evaluate or refer to source of care within 1 week or immediately if the patient is symptomatic.

Adapted from the “Fourth Report on the Diagnosis, Evaluation, and Treatment of High Blood Pressure in Children and Adolescents.”

LABORATORY WORKUP

Risk Factors

- Ethnicity (*African American, Hispanic, Native American, Pacific Islanders*)
 - Family or Personal History of :
 - Cardiovascular Disease <55y men, <65y women
 - Dyslipidemia
 - Obesity/Overweight
 - Diabetes
 - Hypertension
 - Diet Behaviors
 - Physical Activity Behaviors

INDICATION	LABS	RE-SCREEN
BMI 85-94% without risk factors or family history unknown	Fasting Lipid Profile (Chol, LDL, HDL, TG)	Every 2 years
BMI 85-94% with risk factors	Fasting Lipid Profile ALT, AST, Fasting glucose	Every 2 years
BMI \geq 95%	Fasting Lipid Profile ALT, AST, Fasting glucose	Every 2 years

Consider Fasting Lipid Profile age \geq 2 years, Additional hepatic function and fasting glucose should be considered at age \geq 10 years. Clinical judgment may dictate additional labs in the younger child with higher risk.

Adapted from the Expert Committee Recommendations and the Lipid Screening and Cardiovascular Health in Childhood.

Plasma Glucose Criteria

Plasma Glucose	Normal	Impaired	Diabetes
Fasting	<100	100-125	≥ 126
Oral gtt 2h PG	<140	140-199	≥ 200
Random			≥ 200 + symptoms

Abnormal values may warrant referral or consultation with Endocrinology specialist

Cholesterol

Category	Total Cholesterol (mg/dL)	LDL (mg/dL)	HDL (mg/dL)
Acceptable	<170	<110	>40
Borderline	170-199	110-129	
Abnormal	≥ 200	≥ 130	<40

Abnormal values may warrant referral or consultation with Cardiology or lipid specialist

Triglycerides

	Normal mg/dL	
Age (y)	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

Abnormal values may warrant referral or consultation with Cardiology or lipid specialist

AST and ALT values will vary by laboratory. Refer to local lab for normal values. Abnormal values may warrant referral or consultation with a gastroenterology specialist.

Adapted from the Expert Committee Recommendations Summary Report.



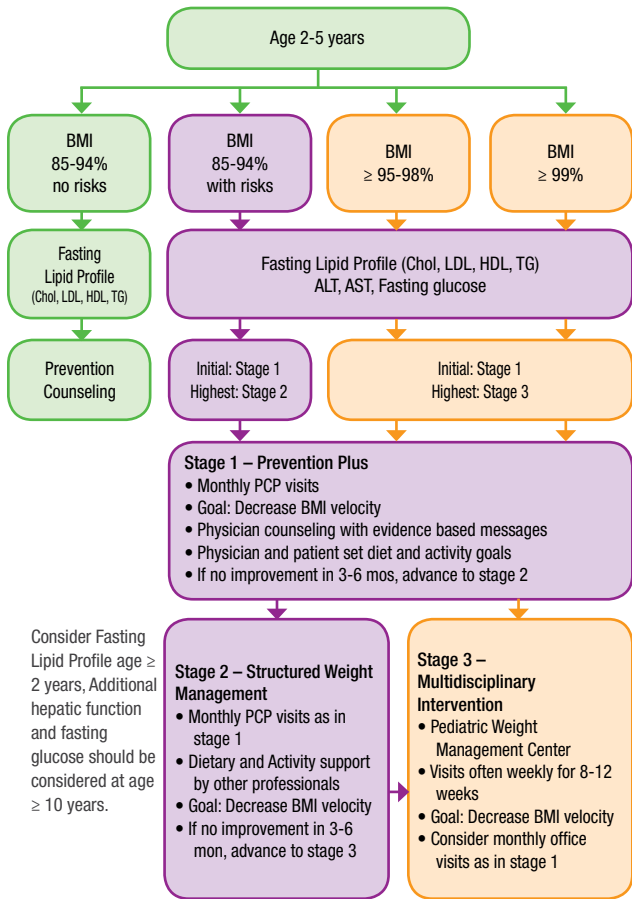
Consider Referral for Possible Pharmacologic Intervention

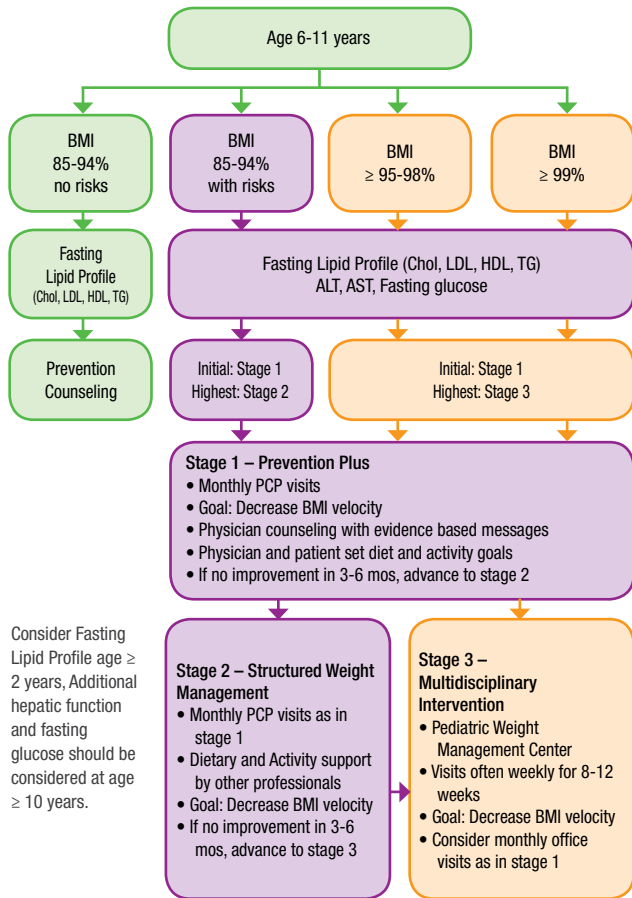
8+ years with the following

- LDL ≥ 190
- LDL ≥ 160 with family history of early heart disease
- LDL ≥ 160 with > 2 other risk factors
- LDL ≥ 130 with Diabetes Mellitus

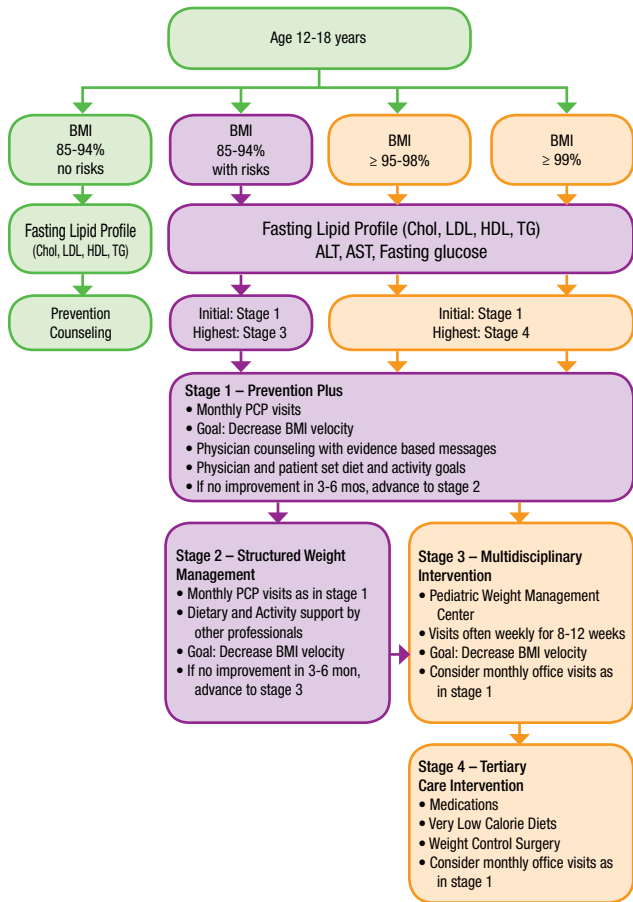
Lipid recommendations extracted from “Lipid Screening and Cardiovascular Health in Childhood”

Pharmacologic intervention is still controversial.





Consider Fasting Lipid Profile age ≥ 2 years, Additional hepatic function and fasting glucose should be considered at age ≥ 10 years.



Frequently Used Diagnosis Codes:

Abnormal Weight Gain.....R63.5	Chronic Headaches.....R51
Obesity, unspecified.....E66.9	Pseudotumor Cerebri.....G93.2
Severe Obesity.....E66.01	Abdominal Pain.....R10.9
Type II Diabetes, unspecified.....E11.9	Constipation.....K59.00
Type II Diabetes, uncontrolled.....E11.65	Dyslipidemia.....E78.5
Glucose Intolerance.....E74.39	Fatty Liver.....K76.0
Urinary Frequency.....R35.0	GERD.....K21.9
Polydipsia.....R63.1	Joint Pain, unspecified site.....M79.606
Polyphagia.....R63.2	Back Pain, unspecified.....M54.9
Other abnormal glucose.....R73.09	Irregular Menstrual Cycle.....N92.6
	Polycystic Ovarian Syndrome.....E28.2
	Acanthosis Nigricans.....L83
	Acne.....L70.9
	Striae.....L90.6
	Blount's Disease.....M92.50
	Sleep Apnea, unspecified.....G47.30
	Elevated Blood Pressure.....R03.0
	Hypertension.....I10
	Other malaise and fatigue.....R53.81
	Anxiety Disorder-NOS.....F41.9
	Bipolar Disorder-NOS.....F31.9



SUGGESTED RESOURCES:

1. *Expert Committee Recommendations Regarding the Prevention Assessment, and Treatment of Child and Adolescent Overweight and Obesity*. Summary Report. Barlow, Sarah E. and the Expert Committee. Pediatrics 2007; 120: S164-S192.
2. *Assessment of Child and Adolescent Overweight and Obesity*. Krebs, Nancy F. et al. Pediatrics 2007; 120: S193-S228.
3. *Recommendations for Prevention of Childhood Obesity*. Davis, Matthew M. et al. Pediatrics 2007; 120: S229-S253.
4. *Recommendations for Treatment of Child and Adolescent Overweight and Obesity*. Spear, Bonnie A. et al. Pediatrics 2007; 120: S254-S288. http://pediatrics.aappublications.org/content/pediatrics/120/Supplement_4/S254.full.pdf
5. *Expert Committee Recommendations on the Assessment, Prevention, and Treatment of Child and Adolescent Overweight and Obesity – 2007. An Implementation Guide from the Childhood Obesity Action Network*. Childhood Obesity Action Network, 2007.
6. *Cardiovascular Risk Reduction in High-Risk Pediatric Patients*. Kavey, Rae- Ellen W. et al. Circulation 2006; 114: 2710-2738.
7. *Lipid Screening and Cardiovascular Health in Childhood*. Daniels, Stephen R., Frank R. Greer, and the Committee on Nutrition. Pediatrics 2008; 122: 198-208.
8. *The Fourth Report on the Diagnosis, Evaluation, and Treatment of High Blood Pressure in Children and Adolescents*. US Department of Health and Human Services, National Institutes of Health, National Heart, Lung, and Blood Institute; Revised May 2005.

9. *Pediatric Obesity Clinical Decision Support Chart: Keep me Healthy 5-2-1-0.* American Academy of Pediatrics, 2008.
10. www.cdc.gov
11. *Motivational Interviewing and Dietary Counseling for Obesity in Primary Care: An RCT.* Resnicow, Kenneth et al. *Pediatrics* 135.4 (2015): 649-657.
12. *The Role of the Pediatrician in Primary Prevention of Obesity.* Daniels, Stephen R. and Sandra G. Hassink. *Pediatrics* 136.1 (2015): e275-e292
13. *Prevalence and Trends in Obesity and Severe Obesity Among Children in the United States, 1999-2012.* Skinner, Asheley Cockrell and Joseph A. Skelton. *JAMA Pediatrics* 168.6: 561-566.
14. www.NationwideChildrens.org/healthyweight
15. *Contemporary Surgical Management of the Obese Adolescent.* Barnett, Sean J. et al. *Current Opinion in Pediatrics* 23 (2011): 351-355.
16. *Position of the Academy of Nutrition and Dietetics: interventions for the prevention and treatment of pediatric overweight and obesity.* Hoelscher, Deanna M. et al. *Journal of the Academy of Nutrition and Dietetics* 113.10 (2013): 1375-1394.
17. *Addressing Prediabetes in Childhood Obesity Treatment Programs: Support from Research and Current Practice.* Haemer, Matthew A. et al. *Childhood Obesity* 10.4 (2014): 292-303.
18. *Children's Hospital Association Consensus Statements for Comorbidities of Childhood Obesity.* Estrada, Elizabeth et al. *Childhood Obesity* 10.4 (2014): 304-317.

[illegible]

Notes:

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



Center for Healthy Weight and Nutrition
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