

# Pediatric Obesity Tool Kit

Putting clinical protocols and education  
resources into practice to help children  
and families improve health



*This unique tool kit combines a clinical algorithm of protocols and patient education resources to provide clinicians in hectic clinical practice with quick referral to standard guidelines and patient-friendly education handouts. These simplified guidelines and tools can help clinicians, including dietitians, achieve a strategic and consistent approach to use with children in preventing and treating overweight and obesity. Clinicians can:*

- Identify children at risk for obesity and adverse health outcomes*
- Implement interventions to keep children healthy*
- Talk knowledgably and confidently with children and their families about adopting effective self-care habits for healthy nutrition and physical activity*

*Originally developed by Park Nicollet Health Services in 2009, this revised 2012 edition of the tool kit features updated protocols and additional patient education handouts. All information and materials are a collaboration of Park Nicollet Pediatric Endocrinology, Pediatrics, Nutrition Services, Pediatric Physical Therapy and Patient Education.*

*Park Nicollet clinicians can order copies of all patient self-assessments and education handouts using the Park Nicollet form number through SMARTworks on Facets.*

*You also can visit [www.mnaap.org/obesityclinicalresources.html](http://www.mnaap.org/obesityclinicalresources.html) to access the tool kit online.*

*For questions, please contact Park Nicollet Pediatric Endocrinology. Email [betsy.schwartz@parknicollet.com](mailto:betsy.schwartz@parknicollet.com) or call 952-993-3900.*

# Clinical protocols

The 1st section of the tool kit provides a comprehensive algorithm of recommendations for screening and intervention for children at risk for obesity and adverse health outcomes. Use this algorithm for children 2 to 17 years old at annual well-child and follow-up visits.

- Screening recommendations (laboratory measures, family medical history, systems reviews, behavioral risk assessment) for children who are at a healthy weight, overweight or obese.
- Supplemental guideline information to the algorithm helps with screening assessment (interpretation of laboratory studies, risk factors and diagnosis) and interventions (prevention messaging and treatment recommendations).
- Specific guidelines address metabolic complications, including abnormal glucose metabolism, hypertension, hyperlipidemia and nonalcoholic fatty liver disease (NAFLD).
- Increasingly rigorous treatment interventions if child does not attain weight-management goals. Guidance for weight-loss targets are included.

## Patient education resources

The 2nd section of this tool kit includes interactive patient education handouts to promote self-management. Handouts expand upon 5–2–1–0 messaging for initial intervention to enable clinicians to deliver more detailed nutrition and physical activity messaging.

- Use self-assessments (questionnaire and food and activity log) for all children 2 to 17 years old at annual well-child visits and before 1st follow-up intervention and as needed.
- Use age-specific (preschoolers 2–5 years, children 6–11 years and teens 12–17 years) dietary recommendations at any visit as needed. Handouts include age-appropriate number of servings a day for each food group and examples of serving sizes and meals.
- Use handouts on meal planning and food preparation to help families create supportive environments at any visit as needed.
- Use age-specific (preschoolers 2–5 years, children 6–11 years and teens 12–17 years) physical activity recommendations at any visit as needed. Handouts include age-appropriate amount of physical activity, tips for making physical activity fun and examples of aerobic, strengthening and balance and coordination activities.

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# Section 1: Clinical Protocols



# Screening and Intervention Algorithm for Obesity and Adverse Health Outcomes for Children (2–17 Years) at Well-Child Visits

## Assessment and physical

1. Calculate and plot BMI percentile for age and gender.
2. Measure blood pressure annually in all children 3 years and older.
3. Obtain family medical history, review systems, assess behavioral risk and complete physical exam. See Page 8 for Algorithm Supplement 1: Screening

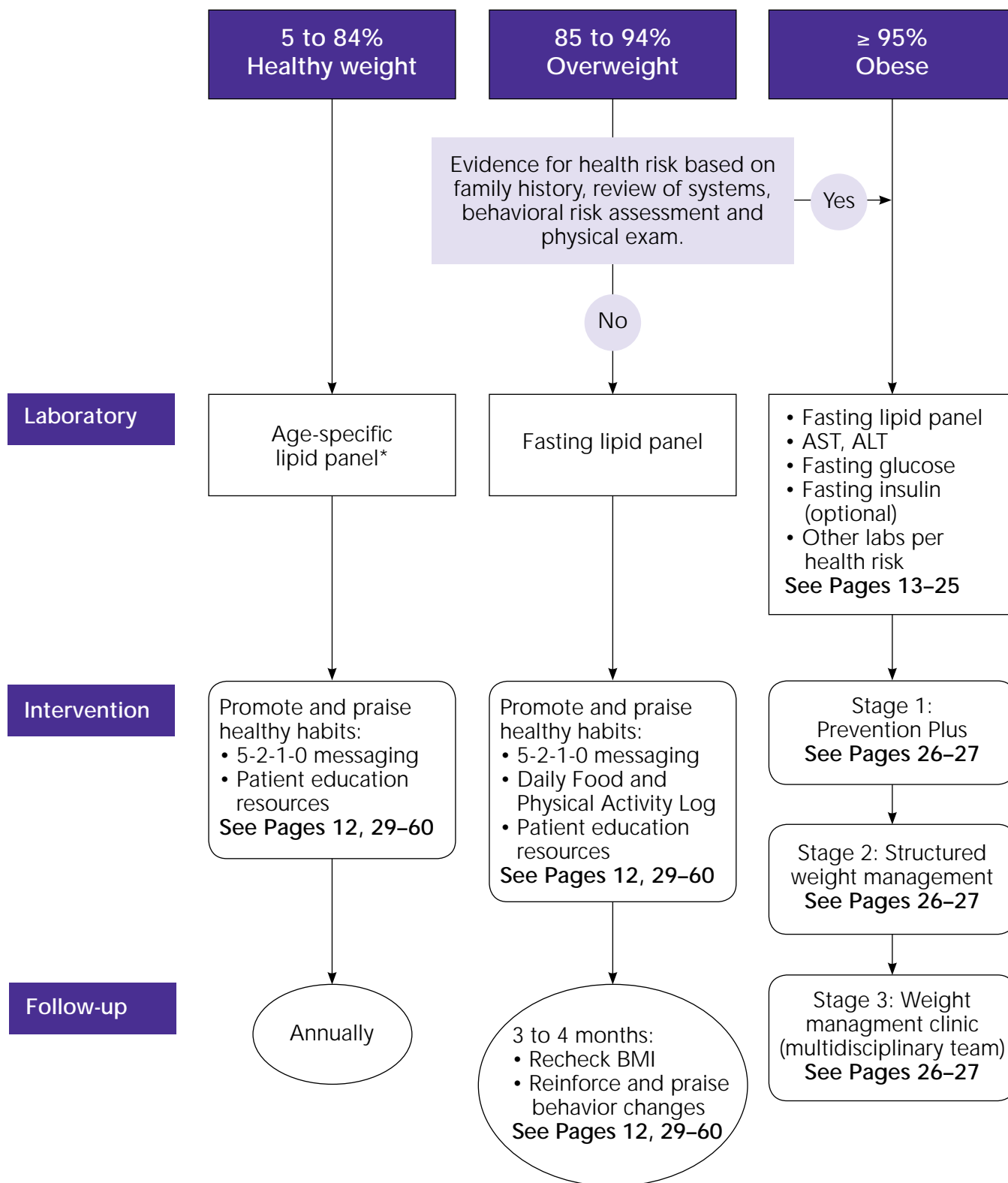
## Laboratory, intervention and follow-up per weight category

1. Use the calculated BMI to identify the weight category on the algorithm on the next page.
2. Follow the laboratory, intervention and follow-up protocols outlined in the algorithm (on the next page) per the identified weight category.
3. See pages noted in the algorithm for information regarding further screenings, labs, interventions, weight-loss targets and education resources.

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This algorithm was adapted from Barlow SE and the Expert Committee. Expert committee recommendations regarding the prevention, assessment, and treatment of child and adolescent overweight and obesity: summary report. *Pediatrics*. 2007;120(suppl 4):S164–S192 and Kavey RW, Simons-Morton DG, de Jesus JM. Expert panel on integrated guidelines for cardiovascular health and risk reduction in children and adolescents: summary report. *Pediatrics*. 2011;128(suppl 2):S1–S44.





\* **Ages 2–8 years:** Fasting lipid panel (2 times, average results) if family history of early cardiovascular disease, parent with dyslipidemia and child with hypertension or diabetes. **Ages 9–11 years:** Universal lipid screening with a non-fasting non-HDL cholesterol (total cholesterol – HDL cholesterol) or a fasting lipid panel. A non-HDL cholesterol of ≥ 145 mg/dl or an HDL < 40 mg/dl should be followed by a fasting lipid panel (2 times, average results). **Ages 12 years and older:** Same as for “Ages 2–8 years.”

# Algorithm Supplement 1: Screening

## Family medical history

- Obesity
- Type 2 diabetes
- Cardiovascular disease (in 1st- or 2nd-degree relative, men  $\leq$  55 years, women  $\leq$  65 years), hypertension, hyperlipidemia
- Early onset heart attack or stroke

## Review of systems

<i>Problem</i>	<i>Possible cause</i>
Anxiety, school avoidance, social isolation	Depression
Polyuria, polydipsia, weight loss	Type 2 diabetes
Headaches	Pseudotumor cerebri
Nighttime breathing difficulties	Sleep apnea, hypoventilation syndrome, asthma
Daytime sleepiness	Sleep apnea, hypoventilation syndrome, depression
Abdominal pain	Gastroesophageal reflux disease (GERD), gallbladder disease, constipation
Hip or knee pain	Slipped capital femoral epiphysis
Oligomenorrhea or amenorrhea	Polycystic ovary syndrome

## **Behavioral risk**

### ***Diet***

#### **How often and how much**

- Sweetened beverages
- Fruits and vegetables
- Eating out and family meals
- Portion sizes
- Breakfast

### ***Physical activity***

#### **How often and how much**

- Physical activity
- Screen time and other sedentary activities

### ***Attitudes***

- Self-perception or concern about weight
- Readiness to change
- Challenges, barriers, successes

## Screening for binge eating disorder

If you are concerned about a binge eating disorder, use the following 7-question screening tool to evaluate:

1. Do you ever want to eat when you are not even hungry? ☐ Yes ☐ No
2. Do you ever feel that when you start eating you just cannot stop? ☐ Yes ☐ No
3. Do you ever eat because you feel bad, sad, bored or any other mood? ☐ Yes ☐ No
4. Do you ever want food as a reward for doing something? ☐ Yes ☐ No
5. Do you ever sneak or hide food? ☐ Yes ☐ No
6. How long have you been doing this? Weeks \_\_\_\_\_
7. Do you ever do anything to get rid of what you ate? ☐ Yes ☐ No

Children are classified as meeting binge eating disorder criteria if they respond “yes” to questions 1 and 2, at least one of questions 3, 4 or 5, had symptoms that persisted for more than 12 weeks (question 6) and answered no to question 7.

If meet criteria, refer to Park Nicollet Melrose Institute for binge eating disorder evaluation.

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Shapiro, JR, Woolson, SL, Hamer, RM, et al. Evaluating Binge Eating Disorder in Children: Development of the Children's Binge Eating Disorder Scale (C-BEDS). *Int J Eat Disord.* 2007;40:82–89.

## Physical exam

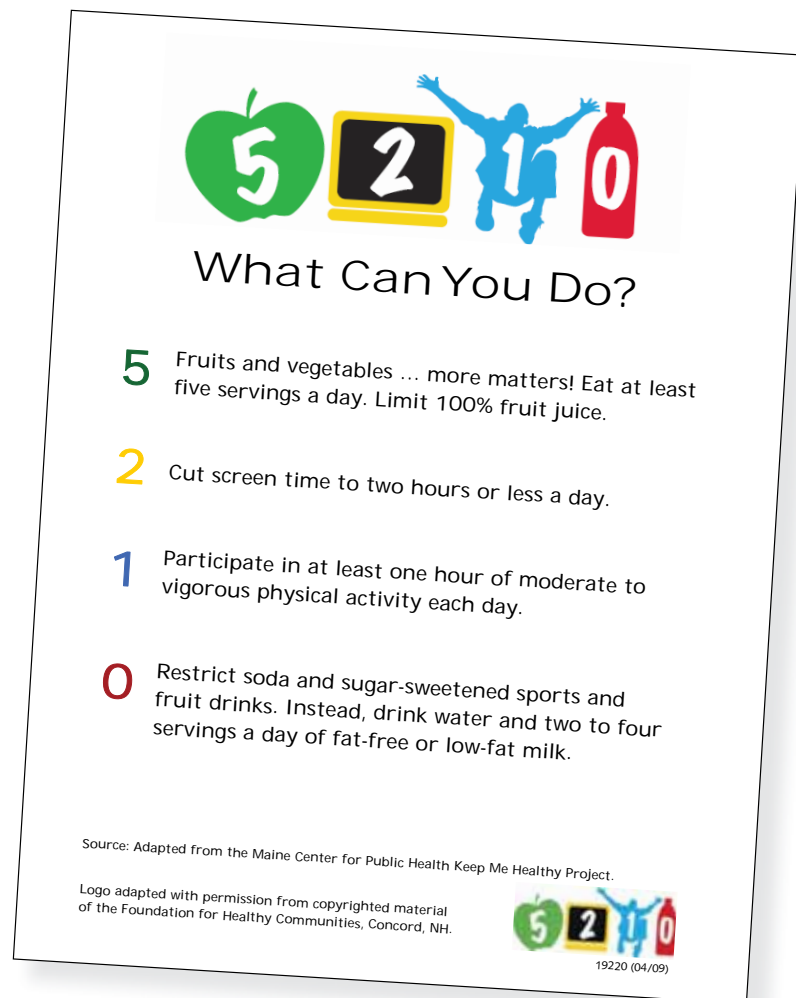
<i>Problem</i>	<i>Possible cause</i>
Poor linear growth	Hypothyroidism, Cushing's syndrome, Prader-Willi syndrome
Dysmorphic features	Genetic disorders, including Prader-Willi syndrome
Acanthosis nigricans	Insulin resistance, type 2 diabetes
Hirsutism and excessive acne	Polycystic ovary syndrome, other cause of hyperandrogenism
Violaceous striae	Cushing's syndrome
Papilledema, cranial nerve VI paralysis	Pseudotumor cerebri
Tonsillar hypertrophy	Obstructive sleep apnea
Abdominal tenderness	Gall bladder disease, gastroesophageal reflux disease (GERD), nonalcoholic fatty liver disease
Hepatomegaly	Nonalcoholic fatty liver disease
Undescended testicle	Prader-Willi syndrome
Limited hip range of motion	Slipped capital femoral epiphysis
Lower leg bowing	Blount's disease
Hip or knee pain	Slipped capital femoral epiphysis
Oligomenorrhea or amenorrhea	Polycystic ovary syndrome

Barlow SE and the Expert Committee. Expert committee recommendation regarding the prevention, assessment, and treatment of child and adolescent overweight and obesity: summary report. *Pediatrics*. 2007;120(suppl 4):S164–S192.

## Algorithm Supplement 2: 5-2-1-0 Messaging

Introduce children and families to the 5-2-1-0 approach to developing healthy eating and activity habits. Provide children and families with the education packet “Keep Me Healthy” (Form #19220). This packet includes:

- “What Can You Do?”
- “More Matters! Fruits and Veggies ... for breakfast lunch and dinner!”
- “How to Go Lean on the Screens!”
- “Fit Physical Activity into Your Schedule Every Day!”
- “Think About Your Drink!”
- “Nutritious Snacks”



## Algorithm Supplement 3: Metabolic Complications of Obesity

### Abnormal glucose metabolism

<i>Glucose test</i>	<i>Normal</i>	<i>Impaired</i>	<i>Type 2 diabetes</i>
Fasting plasma glucose	< 100 mg/dl	100–125 mg/dl	≥ 126 mg/dl
Oral glucose tolerance 2 hours post glucose load	< 140 mg/dl	140–199 mg/dl	≥ 200 mg/dl

### *Treatment recommendations*

- Recommend 2-hour oral glucose tolerance test if fasting blood glucose level is ≥ 100 mg/dl.
- Refer to pediatric endocrinology if impaired fasting glucose or impaired glucose tolerance.
- Refer to pediatric endocrinology if diabetes diagnosed.

### *Risk factors for impaired fasting glucose, impaired glucose tolerance and type 2 diabetes*

- BMI > 85th percentile
- Member of a high-risk ethnic group, such as African-American, Native American, Hispanic or Latino American, Asian or Pacific Islander American
- Family member (1st- or 2nd-degree relative) with type 2 diabetes
- Age > 10 years or pubertal
- Findings associated with insulin resistance, including acanthosis nigricans and elevated fasting insulin level
- Conditions such as polycystic ovary syndrome, hypertension and dyslipidemia

## Fasting insulin

This test is optional. The American Academy of Pediatrics (AAP) and the American Diabetes Association (ADA) do not include a fasting insulin test in their screening recommendations for at-risk youth for type 2 diabetes.

However, laboratory evidence of an elevated fasting insulin, which indicates insulin resistance, can serve as a powerful counseling tool. If a child has hyperinsulinemia and other risk factors for type 2 diabetes, consider getting an oral glucose tolerance test. (Reference ranges for fasting insulin vary slightly by laboratory.)

Treatment of insulin resistance includes weight management and behavioral change.

## Hemoglobin A1C

This test is optional. In adults, a hemoglobin A1C of 5.7 to 6.4% represents prediabetes and a hemoglobin A1C  $\geq 6.5\%$  is in the diabetes range. Consider oral glucose testing if the hemoglobin A1C is  $\geq 5.7\%$ .

## Hyperlipidemia

<i>Lipid levels</i>	<i>High or abnormal</i>	<i>Borderline</i>	<i>Acceptable</i>
Total cholesterol (mg/dl)	$\geq 200$	170–199	$< 170$
LDL (mg/dl)	$\geq 130$	110–129	$< 110$
HDL (mg/dl)	$< 40$	40–45	$> 45$
Triglyceride (mg/dl)			
Birth to 9 years	$\geq 100$	75–99	$< 75$
10 to 19 years	$\geq 130$	90–129	$< 90$

Repeat an abnormal fasting lipid panel at least 2 weeks but no more than 3 months apart. Average the results.

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Kavey RW, Simons-Morton DG, de Jesus JM. Expert panel on integrated guidelines for cardiovascular health and risk reduction in children and adolescents: summary report. *Pediatrics*. 2011;128(suppl 5):S23.



## ***Treatment recommendations***

- Recommend dietary and lifestyle changes for children with elevated LDL and triglyceride levels (LDL cholesterol 130 to 205 mg/dl and triglyceride level 100 to 500 mg/dl in children < 10 years old or 130 to 500 in youth 10 to 19 years old).
  - » Refer to a registered dietitian for family medical nutrition therapy.
  - » Recommend 25 to 30% of calories from fat,  $\leq$  7% from saturated fat, < 200 mg/dl of cholesterol, and avoid trans fats as much as possible.
  - » Repeat fasting lipid panel after 6 months.
- Consult a lipid specialist (pediatric cardiology or endocrinology) if LDL  $\geq$  250 mg/dl or triglyceride level is  $\geq$  500 mg/dl.
- Consider pharmacotherapy in children 10 years and older after a 6-month trial of dietary therapy and lifestyle when:
  - » LDL  $\geq$  190 mg/dl with no other risk factors for cardiovascular disease (CVD)
  - » LDL  $\geq$  160 mg/dl with risk factors for CVD (obesity, hypertension, cigarette smoking, family history of premature CVD)
  - » LDL  $\geq$  130 mg/dl with diabetes
  - » Fasting triglyceride level persistently  $\geq$  200 mg/dl—Recommend fish oil supplement and consider lipid specialist.
- Statin therapy is the 1st-line treatment to reduce LDL cholesterol in children. Consider referral to a lipid specialist or review current guidelines for statin treatment in children.

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Kavey RW, Simons-Morton DG, de Jesus JM. Expert panel on integrated guidelines for cardiovascular health and risk reduction in children and adolescents: summary report. *Pediatrics*. 2011;128(suppl 5):S1–S44.

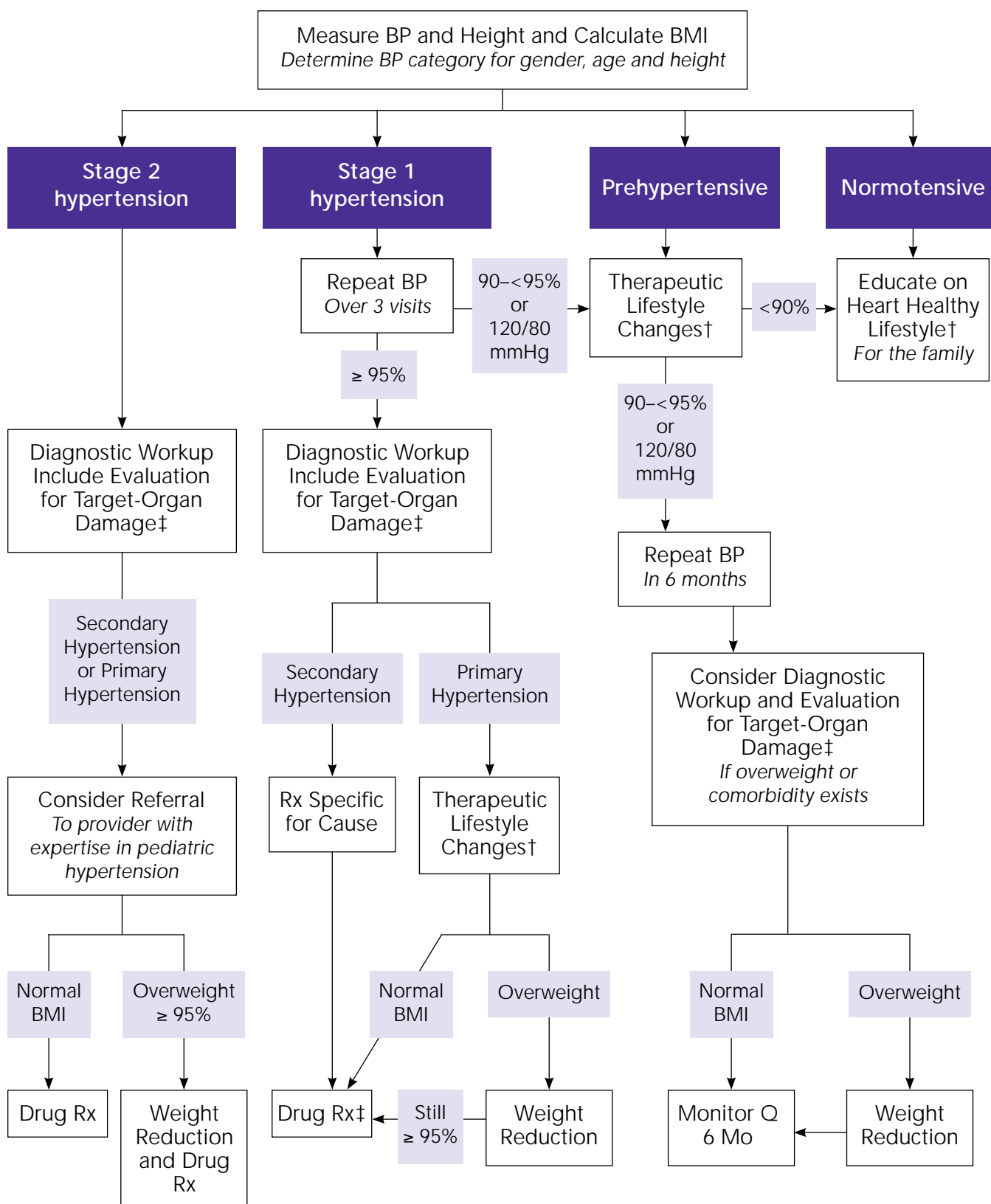
# Hypertension

- Measure blood pressure (BP) annually in children 3 years and older.
- Use appropriate cuff size:
  - » Width 2/3 upper arm, encircles arm 80 to 100%
  - » Confirm elevated blood pressure with auscultation
- Confirm blood pressure percentiles based on child's sex, age and height percentiles (see tables on Pages 20–23)

<i>BP &gt; 90th percentile</i>	<i>BP &gt; 95th percentile</i>	<i>BP &gt; 99th percentile</i>
<ul style="list-style-type: none"> <li>• Repeat x 2 auscultation at that visit</li> <li>• BP &gt; 90th to 95th percentile = <b>Prehypertension</b></li> </ul>	<ul style="list-style-type: none"> <li>• Repeat BP in 1–2 weeks</li> <li>• If average of all on 3 or more occasions is 95th to 99th percentile = <b>Stage 1 hypertension</b></li> </ul>	<ul style="list-style-type: none"> <li>• Repeat x 3 auscultation at that visit</li> <li>• BP &gt; 99th percentile = <b>Stage 2 hypertension</b></li> <li>• Refer to pediatric hypertension expert within 1 week or start workup and treatment</li> </ul>

Hypertension Management Algorithm on Page 17 reproduced with permission from National High Blood Pressure Education Program Working Group on High Blood Pressure in Children and Adolescents. The fourth report on the diagnosis, evaluation, and treatment of high blood pressure in children and adolescents. *Pediatrics*. 2004; 114:555–576.

## 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.

## Evaluation of Confirmed Hypertension for Identifiable Causes and Target-Organ Damage

<i>Evaluation</i>	<i>Purpose of evaluation</i>
Physical exam and history	Identify risk factors, such as family history of cardiovascular disease, and adverse habits, such as smoking and alcohol consumption
BUN, creatinine, electrolytes, urinalysis, urine culture	Rule out renal disease and chronic pyelonephritis
CBC	Rule out anemia, consistent with chronic renal disease
Renal ultrasound	Rule out renal scar, congenital anomaly, disparate renal size
Echocardiogram	Identify left ventricular hypertrophy and other indications of cardiac involvement
Retinal exam	Identify retinal vascular changes

### ***Indications for antihypertensive drug therapy***

- Symptomatic hypertension
- Diabetes (type 1 and type 2)
- Secondary hypertension
- Target-organ damage
- Persistent hypertension despite nonpharmacologic measures

## Quick Blood Pressure (BP) Reference for Prehypertension

*BP values requiring further evaluation, according to age and gender*

Age (yr)	BP (mm Hg)			
	Boys 90th percentile of systolic BP/diastolic BP (mm Hg)		Girls 90th percentile of systolic BP/diastolic BP (mm Hg)	
	5th percentile of height	95th percentile of height	5th percentile of height	95th percentile of height
3	100/59	109/63	100/61	106/65
4	102/62	111/67	101/64	108/68
5	104/65	112/70	103/66	109/70
6	105/68	113/72	104/68	111/72
7	106/70	115/74	106/69	113/73
8	107/71	116/76	108/71	114/74
9	109/72	118/77	110/72	116/75
10	111/73	119/78	112/73	118/76
11	113/74	120/78	114/74	120/77
12	115/74	120/79	116/75	120/78
13	117/75	120/79	117/76	120/79
14	120/75	120/80	119/77	120/80
15	120/76	120/80	120/78	120/80
16	120/78	120/80	120/78	120/80
17	120/80	120/80	120/78	120/80

If blood pressure is above the 90th percentile, repeat auscultation 2 times at visit.

## Blood Pressure (BP) Norms for Boys by Age and Height Percentile

Age (yr)	BP %ile	Systolic BP (mm Hg)							Diastolic BP (mm Hg)						
		Percentile of height							Percentile of height						
		5th	10th	25th	50th	75th	90th	95th	5th	10th	25th	50th	75th	90th	95th
1	50th	80	81	83	85	87	88	89	34	35	36	37	38	39	39
	90th	94	95	97	99	100	102	103	49	50	51	52	53	53	54
	95th	98	99	101	103	104	106	106	54	54	55	56	57	58	58
	99th	105	106	108	110	112	113	114	61	62	63	64	65	66	66
2	50th	84	85	87	88	90	92	92	39	40	41	42	43	44	44
	90th	97	99	100	102	104	105	106	54	55	56	57	58	58	59
	95th	101	102	104	106	108	109	110	59	59	60	61	62	63	63
	99th	109	110	111	113	115	117	117	66	67	68	69	70	71	71
3	50th	86	87	89	91	93	94	95	44	44	45	46	47	48	48
	90th	100	101	103	105	107	108	109	59	59	60	61	62	63	63
	95th	104	105	107	109	110	112	113	63	63	64	65	66	67	67
	99th	111	112	114	116	118	119	120	71	71	72	73	74	75	75
4	50th	88	89	91	93	95	96	97	47	48	49	50	51	51	52
	90th	102	103	105	107	109	110	111	62	63	64	65	66	66	67
	95th	106	107	109	111	112	114	115	66	67	68	69	70	71	71
	99th	113	114	116	118	120	121	122	74	75	76	77	78	78	79
5	50th	90	91	93	95	96	98	98	50	51	52	53	54	55	55
	90th	104	105	106	108	110	111	112	65	66	67	68	69	69	70
	95th	108	109	110	112	114	115	116	69	70	71	72	73	74	74
	99th	115	116	118	120	121	123	123	77	78	79	80	81	81	82
6	50th	91	92	94	96	98	99	100	53	53	54	55	56	57	57
	90th	105	106	108	110	111	113	113	68	68	69	70	71	72	72
	95th	109	110	112	114	115	117	117	72	72	73	74	75	76	76
	99th	116	117	119	121	123	124	125	80	80	81	82	83	84	84
7	50th	92	94	95	97	99	100	101	55	55	56	57	58	59	59
	90th	106	107	109	111	113	114	115	70	70	71	72	73	74	74
	95th	110	111	113	115	117	118	119	74	74	75	76	77	78	78
	99th	117	118	120	122	124	125	126	82	82	83	84	85	86	86
8	50th	94	95	97	99	100	102	102	56	57	58	59	60	60	61
	90th	107	109	110	112	114	115	116	71	72	72	73	74	75	76
	95th	111	112	114	116	118	119	120	75	76	77	78	79	79	80
	99th	119	120	122	123	125	127	127	83	84	85	86	87	87	88
9	50th	95	96	98	100	102	103	104	57	58	59	60	61	61	62
	90th	109	110	112	114	115	117	118	72	73	74	75	76	76	77
	95th	113	114	116	118	119	121	121	76	77	78	79	80	81	81
	99th	120	121	123	125	127	128	129	84	85	86	87	88	88	89

Age (yr)	BP %ile	Systolic BP (mm Hg)							Diastolic BP (mm Hg)						
		Percentile of height							Percentile of height						
		5th	10th	25th	50th	75th	90th	95th	5th	10th	25th	50th	75th	90th	95th
10	50th	97	98	100	102	103	105	106	58	59	60	61	61	62	63
	90th	111	112	114	115	117	119	119	73	73	74	75	76	77	78
	95th	115	116	117	119	121	122	123	77	78	79	80	81	81	82
	99th	122	123	125	127	128	130	130	85	86	86	88	88	89	90
11	50th	99	100	102	104	105	107	107	59	59	60	61	62	63	63
	90th	113	114	115	117	119	120	121	74	74	75	76	77	78	78
	95th	117	118	119	121	123	124	125	78	78	79	80	81	82	82
	99th	124	125	127	129	130	132	132	86	86	87	88	89	90	90
12	50th	101	102	104	106	108	109	110	59	60	61	62	63	63	64
	90th	115	116	118	120	121	123	123	74	75	75	76	77	78	79
	95th	119	120	122	123	125	127	127	78	79	80	81	82	82	83
	99th	126	127	129	131	133	134	135	86	87	88	89	90	90	91
13	50th	104	105	106	108	110	111	112	60	60	61	62	63	64	64
	90th	117	118	120	122	124	125	126	75	75	76	77	78	79	79
	95th	121	122	124	126	128	129	130	79	79	80	81	82	83	83
	99th	128	130	131	133	135	136	137	87	87	88	89	90	91	91
14	50th	106	107	109	111	113	114	115	60	61	62	63	64	65	65
	90th	120	121	123	125	126	128	128	75	76	77	78	79	79	80
	95th	124	125	127	128	130	132	132	80	80	81	82	83	84	84
	99th	131	132	134	136	138	139	140	87	88	89	90	91	92	92
15	50th	109	110	112	113	115	117	117	61	62	63	64	65	66	66
	90th	122	124	125	127	129	130	131	76	77	78	79	80	80	81
	95th	126	127	129	131	133	134	135	81	81	82	83	84	85	85
	99th	134	135	136	138	140	142	142	88	89	90	91	92	93	93
16	50th	111	112	114	116	118	119	120	63	63	64	65	66	67	67
	90th	125	126	128	130	131	133	134	78	78	79	80	81	82	82
	95th	129	130	132	134	135	137	137	82	83	83	84	85	86	87
	99th	136	137	139	141	143	144	145	90	90	91	92	93	94	94
17	50th	114	115	116	118	120	121	122	65	66	66	67	68	69	70
	90th	127	128	130	132	134	135	136	80	80	81	82	83	84	84
	95th	131	132	134	136	138	139	140	84	85	86	87	87	88	89
	99th	139	140	141	143	145	146	147	92	93	93	94	95	96	97

The 90th percentile is 1.28 SD, the 95th percentile is 1.645 SD and the 99th percentile 2.326 SD over the mean.

Table reproduced with permission from National High Blood Pressure Education Program Working Group on High Blood Pressure in Children and Adolescents. *Pediatrics*. 2004;114(2 suppl 4th report):558.

## Blood Pressure (BP) Norms for Girls by Age and Height Percentile

Age (yr)	BP %ile	Systolic BP (mm Hg)							Diastolic BP (mm Hg)						
		Percentile of height							Percentile of height						
		5th	10th	25th	50th	75th	90th	95th	5th	10th	25th	50th	75th	90th	95th
1	50th	83	84	85	86	88	89	90	38	39	39	40	41	41	42
	90th	97	97	98	100	101	102	103	52	53	53	54	55	55	56
	95th	100	101	102	104	105	106	107	56	57	57	58	59	59	60
	99th	108	108	109	111	112	113	114	64	64	65	65	66	67	67
2	50th	85	85	87	88	89	91	91	43	44	44	45	46	46	47
	90th	98	99	100	101	103	104	105	57	58	58	59	60	61	61
	95th	102	103	104	105	107	108	109	61	62	62	63	64	65	65
	99th	109	110	111	112	114	115	116	69	69	70	70	71	72	72
3	50th	86	87	88	89	91	92	93	47	48	48	49	50	50	51
	90th	100	100	102	103	104	106	106	61	62	62	63	64	64	65
	95th	104	104	105	107	108	109	110	65	66	66	67	68	68	69
	99th	111	111	113	114	115	116	117	73	73	74	74	75	76	76
4	50th	88	88	90	91	92	94	94	50	50	51	52	52	53	54
	90th	101	102	103	104	106	107	108	64	64	65	66	67	67	68
	95th	105	106	107	108	110	111	112	68	68	69	70	71	71	72
	99th	112	113	114	115	117	118	119	76	76	76	77	78	79	79
5	50th	89	90	91	93	94	95	96	52	53	53	54	55	55	56
	90th	103	103	105	106	107	109	109	66	67	67	68	69	69	70
	95th	107	107	108	110	111	112	113	70	71	71	72	73	73	74
	99th	114	114	116	117	118	120	120	78	78	79	79	80	81	81
6	50th	91	92	93	94	96	97	98	54	54	55	56	56	57	58
	90th	104	105	106	108	109	110	111	68	68	69	70	70	71	72
	95th	108	109	110	111	113	114	115	72	72	73	74	74	75	76
	99th	115	116	117	119	120	121	122	80	80	80	81	82	83	83
7	50th	93	93	95	96	97	99	99	55	56	56	57	58	58	59
	90th	106	107	108	109	111	112	113	69	70	70	71	72	72	73
	95th	110	111	112	113	115	116	116	73	74	74	75	76	76	77
	99th	117	118	119	120	122	123	124	81	81	82	82	83	84	84
8	50th	95	95	96	98	99	100	101	57	57	57	58	59	60	60
	90th	108	109	110	111	113	114	114	71	71	71	72	73	74	74
	95th	112	112	114	115	116	118	118	75	75	75	76	77	78	78
	99th	119	120	121	122	123	125	125	82	82	83	83	84	85	86
9	50th	96	97	98	100	101	102	103	58	58	58	59	60	61	61
	90th	110	110	112	113	114	116	116	72	72	72	73	74	75	75
	95th	114	114	115	117	118	119	120	76	76	76	77	78	79	79
	99th	121	121	123	124	125	127	127	83	83	84	84	85	86	87



Age (yr)	BP %ile	Systolic BP (mm Hg)							Diastolic BP (mm Hg)						
		Percentile of height							Percentile of height						
		5th	10th	25th	50th	75th	90th	95th	5th	10th	25th	50th	75th	90th	95th
10	50th	98	99	100	102	103	104	105	59	59	59	60	61	62	62
	90th	112	112	114	115	116	118	118	73	73	73	74	75	76	76
	95th	116	116	117	119	120	121	122	77	77	77	78	79	80	80
	99th	123	123	125	126	127	129	129	84	84	85	86	86	87	88
11	50th	100	101	102	103	105	106	107	60	60	60	61	62	63	63
	90th	114	114	116	117	118	119	120	74	74	74	75	76	77	77
	95th	118	118	119	121	122	123	124	78	78	78	79	80	81	81
	99th	125	125	126	128	129	130	131	85	85	86	87	87	88	89
12	50th	102	103	104	105	107	108	109	61	61	61	62	63	64	64
	90th	116	116	117	119	120	121	122	75	75	75	76	77	78	78
	95th	119	120	121	123	124	125	126	79	79	79	80	81	82	82
	99th	127	127	128	130	131	132	133	86	86	87	88	88	89	90
13	50th	104	105	106	107	109	110	110	62	62	62	63	64	65	65
	90th	117	118	119	121	122	123	124	76	76	76	77	78	79	79
	95th	121	122	123	124	126	127	128	80	80	80	81	82	83	83
	99th	128	129	130	132	133	134	135	87	87	88	89	89	90	91
14	50th	106	106	107	109	110	111	112	63	63	63	64	65	66	66
	90th	119	120	121	122	124	125	125	77	77	77	78	79	80	80
	95th	123	123	125	126	127	129	129	81	81	81	82	83	84	84
	99th	130	131	132	133	135	136	136	88	88	89	90	90	91	92
15	50th	107	108	109	110	111	113	113	64	64	64	65	66	67	67
	90th	120	121	122	123	125	126	127	78	78	78	79	80	81	81
	95th	124	125	126	127	129	130	131	82	82	82	83	84	85	85
	99th	131	132	133	134	136	137	138	89	89	90	91	91	92	93
16	50th	108	108	110	111	112	114	114	64	64	65	66	66	67	68
	90th	121	122	123	124	126	127	128	78	78	79	80	81	81	82
	95th	125	126	127	128	130	131	132	82	82	83	84	85	85	86
	99th	132	133	134	135	137	138	139	90	90	90	91	92	93	93
17	50th	108	109	110	111	113	114	115	64	65	65	66	67	67	68
	90th	122	122	123	125	126	127	128	78	79	79	80	81	81	82
	95th	125	126	127	129	130	131	132	82	83	83	84	85	85	86
	99th	133	133	134	136	137	138	139	90	90	91	91	92	93	93

The 90th percentile is 1.28 SD, the 95th percentile is 1.645 SD and the 99th percentile 2.326 SD over the mean.

Table reproduced with permission from National High Blood Pressure Education Program Working Group on High Blood Pressure in Children and Adolescents. *Pediatrics*. 2004;114(2 suppl 4th report):558.

# Nonalcoholic fatty liver disease (NAFLD)

NAFLD is a spectrum of disorders, which ranges from the more common simple fatty liver (80 to 90 percent) to nonalcoholic steatohepatitis (NASH). NASH is a histologic diagnosis and is associated with an increased risk for liver fibrosis and cirrhosis.

## *Diagnosis*

There is no standard screening protocol for the evaluation of NAFLD in children. Diagnosis of NAFLD requires the exclusion of other forms of chronic liver disease, including:

- Viral hepatitis
- Wilson's
- $\alpha$ -1 antitrypsin deficiency
- Autoimmune hepatitis
- Alcohol abuse
- Total parenteral nutrition
- Drug-induced liver injury (valproate, methotrexate, tetracycline, amiodarone, prednisone)

Elevated aminotransferase levels (ALT and AST), found in 10 to 25 percent of obese children, are highly suggestive of NAFLD. However, children with NASH may have normal ALT and AST at any given time. Other associated findings include:

- Right upper quadrant abdominal pain (often asymptomatic)
- Hepatomegaly
- Fatigue
- Elevated fasting insulin level
- Acanthosis nigricans
- Family history of NAFLD

Diagnosis is confirmed by liver biopsy, although there is no clear standard on when to perform liver biopsy.

## Treatment recommendations

- Initial management for overweight or obese children is weight reduction through diet and exercise.
- No pharmacologic therapy has been approved for treatment of NAFLD in children.

## Treating Elevated Aminotransferase Levels in Obese Children with an ALT or AST Level

<i>≤ 2 times the upper limit of normal with no family history of liver disease and hepato- or splenomegaly</i>	<i>2 times the upper limit of normal with a family history of liver disease or palpable organs</i>	<i>≥ 3 times the upper limit of normal</i>
<ul style="list-style-type: none"><li>• Recommend weight reduction through lifestyle change.</li><li>• Retest ALT and AST in 6 months.</li><li>• Consider referral to pediatric gastroenterology if there is no improvement of liver enzymes with therapeutic lifestyle change.</li></ul>	<ul style="list-style-type: none"><li>• Screen for other causes of liver disease.<ul style="list-style-type: none"><li>» Get lab tests: hepatitis C virus antibody, hepatitis B surface antigen, ceruloplasmin (over age 3 years), <math>\alpha</math>-1 antitrypsin, antinuclear antibody (ANA) and anti-smooth muscle antibody (ASMA).</li><li>» Ask about alcohol use.</li><li>» Repeat AST, ALT, alkaline phosphatase, bilirubin, albumin and INR.</li><li>» Get liver ultrasound.</li></ul></li><li>• Consider referral to pediatric gastroenterology.</li></ul>	<ul style="list-style-type: none"><li>• Refer to pediatric gastroenterology.</li><li>• Will likely require a liver biopsy.</li></ul>

Recommendations from Sarah Jane Schwarzenberg, MD, pediatric gastroenterologist, University of Minnesota, with the understanding more research is required on the evaluation and management of children with NAFLD.

Pacifico L, Anania C, Martino F, et al. Management of metabolic syndrome in children and adolescents. *Nutr Metab Cardiovasc Dis*. 2011;21:455–466.

Patton HM, Sirlin C, Behling C, Middleton M, Schwimmer JB, Lavine JE. Pediatric nonalcoholic fatty liver disease: A critical appraisal of current data and implications for future research. *J Pediatr Gastroenterol Nutr*. 2006;43:413–427.

Roberts EA. Pediatric nonalcoholic fatty liver disease (NAFLD): A “growing” problem? *J Hepatology*. 2007;46:1133–1142.

# Algorithm Supplement 4: Obesity Intervention and Weight-Loss Targets

## **Obesity intervention**

### ***Stage 1: Prevention plus***

#### **Monthly family visits with primary care clinician**

- Promote healthy eating and physical activity with 5-2-1-0 messaging (Form #19220).
- Address additional behavioral goals:
  - » Eat a healthy breakfast daily.
  - » Limit meals outside the home.
  - » Have family meals 5 to 6 times a week.
  - » Allow child to self-regulate at meals without overly restrictive behavior.
- Support changes in small increments. For example, obese children may need to start with 15 minutes of physical activity daily and work up to 60 minutes.
- Progress to Stage 2 if no improvement in BMI and weight after 3 to 6 months.

### ***Stage 2: Structured weight management***

#### **Monthly family visits with primary care clinician or registered dietitian**

- Refer to dietitian to develop a daily eating plan for meals and snacks. Emphasize a diet with balanced macronutrients and foods low in energy density.
- Recommend supervised physical activity or active play for at least 60 minutes a day.
- Limit screen time to 1 hour or less a day.
- Progress to Stage 3 if no improvement in BMI and weight after 3 to 6 months.

### Stage 3: Weight-management clinic

Individual or group sessions with a multidisciplinary team, including a behavioral counselor, registered dietitian, pediatric physical therapist and clinician

- Monitor medical issues.
- Refer to pediatric endocrinology.

### Weight-loss targets

Age (yr)	BMI 85 to 94% no risk	BMI 85 to 94% with risks	BMI 95 to 98%	BMI $\geq$ 99%
2 to 5	Maintain weight velocity	Decrease weight velocity or weight maintenance	Weight maintenance	Gradual weight loss up to 1 lb/month if BMI very high ( $> 21$ or $22 \text{ kg/m}^2$ )
6 to 11	Maintain weight velocity	Decrease weight velocity or weight maintenance	Weight maintenance or gradual weight loss (1 lb/month)	Weight loss not to exceed an average of 2 lb/week*
12 to 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/week*	Weight loss not to exceed an average of 2 lb/week*

\*Evaluate for high-risk behaviors with excessive weight loss.

Adapted from Barlow, SE and the Expert Committee. Expert committee recommendation regarding the prevention, assessment, and treatment of child and adolescent overweight and obesity: summary report. *Pediatrics*. 2007; 120(suppl 4):S184.

## Section 2: Patient Education Resources



# Food and Physical Activity Questionnaire for Children 2 to 17 Years Old

Please answer the following questions with your child. Your clinician will review your answers during your visit. This questionnaire helps your clinician provide optimal care for your child's health and well-being.

Name: \_\_\_\_\_ Age: \_\_\_\_\_ Date: \_\_\_\_\_

## Food

1. What are your 5 favorite foods?

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2. How many fruits and vegetables do you eat a day? (check 1 answer)

- ☐ None  
☐ 1 to 2 a day  
☐ 3 to 4 a day  
☐ 5 to 6 a day

3. Do you have a favorite fruit or vegetable you eat more than 3 to 4 times a week?

- ☐ Yes ☐ No

4. If yes, what fruit and vegetable?

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5. List all fruits and vegetables you enjoy eating.

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6. Do you drink milk?

- ☐ Yes ☐ No

7. If yes, what kind of milk? (check 1 answer)

- ☐ Fat-free (skim) milk  
☐ Low-fat (1%) milk  
☐ 2% milk  
☐ Whole milk

8. Do you skip meals? ☐ Yes ☐ No

9. What snacks do you eat?

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10. How often do you drink soda or juice? (check 1 answer)

- ☐ None  
☐ 1 time a month or less  
☐ 1 time a week  
☐ 2 to 3 times a week  
☐ 4 to 6 times a week  
☐ Every day

11. How many nights a week does your family eat takeout or eat away from home?

(check 1 answer)

- ☐ 1 time a week  
☐ 2 to 3 times a week  
☐ 4 to 6 times a week  
☐ Every day

12. How often does your family eat dinner together? (check 1 answer)
- ☐ 1 time a month or less
- ☐ 1 time a week
- ☐ 2 to 3 times a week
- ☐ 4 to 6 times a week
13. Do you eat in front of the TV?
- Snacks: ☐ Yes ☐ No
- Meals: ☐ Yes ☐ No
14. Do you eat when you are upset?
- ☐ Yes ☐ No
15. Are you willing to eat more fruits and vegetables?
- ☐ Yes ☐ No
16. Are you willing to change some foods that you eat and drink to be healthier?
- ☐ Yes ☐ No
17. What worries do you have about changing what you eat or being more physically active?
- 
- 

### Physical activity

18. How often do you exercise or move your body? (check 1 answer)
- ☐ None
- ☐ 1 time a month or less
- ☐ 1 time a week
- ☐ 2 to 3 times a week
- ☐ 4 to 6 times a week
- ☐ Every day
19. When you exercise or move your body, how much time do you spend? (check 1 answer)
- ☐ Less than 30 minutes
- ☐ 30 to 60 minutes
- ☐ 1 to 2 hours
20. Do you take gym class or participate in sports or dance in or outside of school?
- ☐ Yes ☐ No
21. Is it safe to walk or bike in your neighborhood?
- ☐ Yes ☐ No
- 

22. Do you have exercise equipment at home?
- ☐ Yes ☐ No
23. If yes, what equipment?
- 
- 
24. Does your family belong to a gym or recreation center?
- ☐ Yes ☐ No
25. How many total hours a day do you watch TV, use the computer and play video games? (check 1 answer)
- ☐ None
- ☐ Less than 1 hour a day
- ☐ 1 hour a day
- ☐ 2 hours a day
- ☐ 4 or more hours a day
26. Which of the following items do you have in your bedroom? (check all that apply)
- ☐ Television
- ☐ Computer
- ☐ Video or computer games
27. Do you have a favorite sport or physical activity you love to do?
- ☐ Yes ☐ No
28. If yes, what sport or activity?
- 
- 
29. How many days a week are you willing to exercise or move your body? (check 1 answer)
- ☐ None
- ☐ 1 time a month or less
- ☐ 1 time a week
- ☐ 2 to 3 times a week
- ☐ 4 to 6 times a week
- ☐ Every day



## Daily Food and Physical Activity Log

To help you and your clinician review your eating and physical activity habits, track your diet and activity for 5 days. Make at least 1 day a weekend day. Write down all foods and beverages as soon as you eat or drink them. Do not wait until the end of the day. Note what time you eat a meal or have a snack. List what you ate or drank and how much. At the end of the day, check off the number of servings for each food group for the day.

Day and Date					Number of servings of each food group:	
Breakfast	Morning Snack (if eaten)	Lunch	Afternoon Snack (if eaten)	Dinner	Evening Snack (if eaten)	
Time:						Vegetables: ○○○○
						Fruits: ○○○○
						Grains: ○○○○○○○○
						Proteins: ○○○○○○○○
						Dairy: ○○○○
						Other: _____
Physical activity—What I did and for how long						

Day and Date					Number of servings of each food group:	
Breakfast	Morning Snack (if eaten)	Lunch	Afternoon Snack (if eaten)	Dinner	Evening Snack (if eaten)	
Time:						Vegetables: ○○○○
						Fruits: ○○○○
						Grains: ○○○○○○○○
						Proteins: ○○○○○○○○
						Dairy: ○○○○
						Other: _____
Physical activity—What I did and for how long						

Day and Date					
Breakfast	Morning Snack (if eaten)	Lunch	Afternoon Snack (if eaten)	Dinner	Evening Snack (if eaten)
Time:					
Physical activity—What I did and for how long					
Number of servings of each food group: Vegetables: ○○○○ Fruits: ○○○○ Grains: ○○○○○○○○○○ Proteins: ○○○○○○○○ Dairy: ○○○○ Other: _____					

Day and Date					
Breakfast	Morning Snack (if eaten)	Lunch	Afternoon Snack (if eaten)	Dinner	Evening Snack (if eaten)
Time:					
Physical activity—What I did and for how long					
Number of servings of each food group: Vegetables: ○○○○ Fruits: ○○○○ Grains: ○○○○○○○○○○ Proteins: ○○○○○○○○ Dairy: ○○○○ Other: _____					

Day and Date					
Breakfast	Morning Snack (if eaten)	Lunch	Afternoon Snack (if eaten)	Dinner	Evening Snack (if eaten)
Time:					
Physical activity—What I did and for how long					
Number of servings of each food group: Vegetables: ○○○○ Fruits: ○○○○ Grains: ○○○○○○○○○○ Proteins: ○○○○○○○○ Dairy: ○○○○ Other: _____					

# Daily Food Recommendations for Preschoolers 2 to 5 Years Old

For your child's growth and good health, follow these recommendations for number of servings and serving sizes a day for each food group. To get familiar with serving sizes, use measuring cups for a few weeks. For examples of meals and snacks, see the back side of this sheet.

Food group	Number of servings needed a day	Examples of serving sizes
<b>Vegetables</b>	2 to 3 servings  <i>Limit vegetables higher in calories, such as corn, peas and potatoes, to 1 serving a day.</i>	<ul style="list-style-type: none"> <li>• ¼ to ½ cup cooked vegetables</li> <li>• ½ cup salad or raw vegetables</li> </ul>
<b>Fruits</b>	2 to 3 servings (include source of vitamin C)  <i>Limit juice to 4 to 6 ounces of 100 percent fruit juice a day.</i>	<ul style="list-style-type: none"> <li>• 1 small fruit or ½ to 1 cup fresh fruit</li> <li>• ¼ to ½ cup unsweetened canned fruit</li> <li>• 2 tablespoons dried fruit</li> <li>• Small box of raisins</li> </ul>
<b>Grains</b>	4 servings  <i>Make some servings whole grains.</i>	<ul style="list-style-type: none"> <li>• ¼ to ½ cup rice or pasta</li> <li>• 1 slice bread</li> <li>• ½ hamburger or hot dog bun</li> <li>• ¼ to ½ cup oatmeal or other cooked cereal</li> <li>• ¾ cup unsweetened cold cereal (less than 8 grams of sugar a serving)</li> <li>• 1 pancake or waffle</li> </ul>
<b>Proteins</b>	Varies depending on serving size: 2 to 4 ounces total  <i>Eat fish at least 2 times a week.</i>  <i>Limit processed meats, such as bacon, ham, sausage, frankfurters and deli meats, which have added sodium and may be higher in fat.</i>	<ul style="list-style-type: none"> <li>• 3-ounce portion of lean beef, pork, chicken, turkey or fish is about the size of a deck of cards</li> <li>• 1 ounce of protein equals:               <ul style="list-style-type: none"> <li>» ¼ cup cooked dried beans, ground meat, tuna, egg substitute or egg whites</li> <li>» 1 egg</li> <li>» 2 tablespoons peanut butter</li> </ul> </li> </ul>
<b>Dairy</b>	2 to 3 servings	<ul style="list-style-type: none"> <li>• ½ cup fat-free (skim) or low-fat (1%) milk</li> <li>• ½ cup soy, rice or nondairy milk</li> <li>• 1 ounce string cheese</li> <li>• ¼ cup shredded cheese</li> <li>• 4 to 6 ounces yogurt</li> <li>• ½ cup pudding</li> </ul>

## Examples of daily meals and snacks for preschoolers 2 to 5 years old

Breakfast 1	Lunch 1	Dinner 1	Snack 1
Raisin toast with peanut butter, berries, milk	Cheese pizza, carrot sticks, fresh fruit, milk	White meat chicken nuggets, brown rice, green beans, blueberries, milk	Apple slices with peanut butter
Breakfast 2	Lunch 2	Dinner 2	Snack 2
Waffle, ham roll-up, unsweetened applesauce, milk	Turkey and cheese cubes, vegetable soup with oyster crackers, mandarin oranges, milk	Burrito (made with whole wheat tortilla), black or refried beans, shredded cheese, vegetables (such as tomatoes, avocado), salsa, low-fat sour cream, fruit salad, milk	Raw or steamed vegetables with low-fat dip or hummus
Breakfast 3	Lunch 3	Dinner 3	Snack 3
Egg, egg substitute or egg whites scrambled with vegetables and shredded cheese, whole wheat toast, milk	Peanut butter and jelly sandwich, fresh fruit, milk	Spaghetti with turkey meatballs, salad, steamed veggies, slice of garlic bread, milk	Wheat thins, string cheese stick, grapes
Breakfast 4	Lunch 4	Dinner 4	Snack 4
Oatmeal, banana, milk	Macaroni and cheese, steamed broccoli, apple slices, milk	Beef stew (meat, potato, vegetable), dinner roll, orange slices, milk	Milk and graham crackers
Dessert			

There is no dietary requirement (need to eat) for desserts and sweets. People just like them! Limit a sweet to 1 time a day rather than at every meal. If fruit does not work for your sweet tooth, try:

- ½ cup light ice cream
- 1 cookie (3 inches)
- Frozen fruit bar
- ½ cup pudding
- Small portion of a dessert you like

# Daily Food Recommendations for Children 6 to 11 Years Old

For your child's growth and good health, follow these recommendations for number of servings and serving sizes a day for each food group. To get familiar with serving sizes, use measuring cups for a few weeks. For examples of meals and snacks, see the back side of this sheet.

Food group	Number of servings needed a day	Examples of serving sizes
<b>Vegetables</b>	3 to 4 servings  <i>Limit vegetables higher in calories, such as corn, peas and potatoes, to 1 serving a day.</i>	<ul style="list-style-type: none"> <li>• ½ cup cooked vegetables</li> <li>• 1 cup salad or raw vegetables</li> </ul>
<b>Fruits</b>	3 to 4 servings (include source of vitamin C)  <i>Limit juice to 4 to 6 ounces of 100 percent fruit juice a day.</i>	<ul style="list-style-type: none"> <li>• 1 small fruit or 1 cup fresh fruit</li> <li>• ½ cup unsweetened canned fruit</li> <li>• ¼ cup dried fruit</li> </ul>
<b>Grains</b>	6 servings  <i>Make at least half of the servings whole grains.</i>	<ul style="list-style-type: none"> <li>• ½ cup rice or pasta</li> <li>• 1 slice bread</li> <li>• ½ hamburger or hot dog bun</li> <li>• ½ cup oatmeal or other cooked cereal</li> <li>• 1 cup unsweetened cold cereal (less than 8 grams of sugar a serving)</li> <li>• 1 pancake or waffle</li> </ul>
<b>Proteins</b>	Varies depending on serving size: 5 to 6 ounces total  <i>Eat fish at least 2 times a week.</i>  <i>Limit processed meats, such as bacon, ham, sausage, frankfurters and deli meats, which have added sodium and may be higher in fat.</i>	<ul style="list-style-type: none"> <li>• 3-ounce portion of lean beef, pork, chicken, turkey or fish is about the size of a deck of cards</li> <li>• 1 ounce of protein equals:               <ul style="list-style-type: none"> <li>» ¼ cup cooked dried beans, ground meat, tuna, egg substitute or egg whites</li> <li>» 1 egg</li> <li>» 2 tablespoons peanut butter</li> </ul> </li> </ul>
<b>Dairy</b>	3 servings	<ul style="list-style-type: none"> <li>• 1 cup fat-free (skim) or low-fat (1%) milk</li> <li>• 1 cup soy, rice or nondairy milk</li> <li>• 1 ounce string cheese</li> <li>• 1 string cheese stick</li> <li>• ¼ cup shredded cheese</li> <li>• 6 to 8 ounces yogurt</li> <li>• ½ cup pudding</li> </ul>

## Examples of daily meals and snacks for children 6 to 11 years old

Breakfast 1	Lunch 1	Dinner 1	Snack 1
Oatmeal, nuts, banana, milk	Cheese pizza, carrot sticks, berries, milk	Chicken breast, brown rice, steamed vegetable, mixed green salad, milk	Apple slices with peanut butter
Breakfast 2	Lunch 2	Dinner 2	Snack 2
Egg, egg substitute or egg whites scrambled with vegetables and low-fat cheese, whole wheat toast, fresh orange slices, milk	Whole wheat pita or wrap with turkey or chicken, lettuce, tomato or other vegetable, flavored yogurt, apple, water or milk	Ground turkey taco, black or refried beans, cheese, vegetables (such as tomatoes, avocado, onions), salsa, low-fat sour cream, fruit salad, milk or water	Vegetables or baked pita chips with low-fat dip or hummus
Breakfast 3	Lunch 3	Dinner 3	Snack 3
Cereal, milk, fresh fruit	Whole wheat deli turkey sandwich, vegetable soup, mandarin oranges, milk	Pot roast with potatoes and carrots, whole grain dinner roll, strawberries, milk	Wheat thins, string cheese stick, grapes
Breakfast 4	Lunch 4	Dinner 4	Snack 4
Waffles (with a little light syrup), unsweetened applesauce, ham roll-up, milk	Macaroni and cheese, green beans, apple slices, milk	Whole grain spaghetti with meatballs, salad, steamed broccoli, cantaloupe, slice of garlic bread, water	Whole wheat tortilla rolled up with peanut butter and jelly, milk
Dessert			

There is no dietary requirement (need to eat) for desserts and sweets. People just like them! Limit a sweet to 1 time a day rather than at every meal. If fruit does not work for your sweet tooth, try:

- ½ cup light ice cream
- 1 cookie (3 inches)
- Frozen fruit bar
- ½ cup pudding
- Small portion of a dessert you like

# Daily Food Recommendations for Teens 12 to 17 Years Old

For your teen's growth and good health, follow these recommendations for number of servings and serving sizes a day for each food group. To get familiar with serving sizes, use measuring cups for a few weeks. For examples of meals and snacks, see the back side of this sheet.

Food group	Number of servings needed a day	Examples of serving sizes
<b>Vegetables</b>	3 to 4 servings  <i>Limit vegetables higher in calories, such as corn, peas and potatoes, to 1 serving a day.</i>	<ul style="list-style-type: none"> <li>• ½ cup cooked vegetables</li> <li>• 1 cup salad or raw vegetables</li> </ul>
<b>Fruits</b>	3 to 4 servings (include source of vitamin C)  <i>Limit juice to 4 to 6 ounces of 100 percent fruit juice a day.</i>	<ul style="list-style-type: none"> <li>• 1 small fruit or 1 cup fresh fruit</li> <li>• ½ cup unsweetened canned fruit</li> <li>• ¼ cup dried fruit</li> </ul>
<b>Grains</b>	6 to 8 servings  <i>Make at least half of the servings whole grains.</i>	<ul style="list-style-type: none"> <li>• ½ cup rice or pasta</li> <li>• 1 slice bread</li> <li>• ½ hamburger or hot dog bun</li> <li>• ½ cup oatmeal or other cooked cereal</li> <li>• 1 cup unsweetened cold cereal (less than 8 grams of sugar a serving)</li> <li>• 1 pancake or waffle</li> </ul>
<b>Proteins</b>	Varies depending on serving size: 5 to 6 ounces total  <i>Eat fish at least 2 times a week.</i>  <i>Limit processed meats, such as bacon, ham, sausage, frankfurters and deli meats, which have added sodium and may be higher in fat.</i>	<ul style="list-style-type: none"> <li>• 3-ounce portion of lean beef, pork, chicken, turkey or fish is about the size of a deck of cards</li> <li>• 1 ounce of protein equals:               <ul style="list-style-type: none"> <li>» ¼ cup cooked dried beans, ground meat, tuna, egg substitute or egg whites</li> <li>» 1 egg</li> <li>» 2 tablespoons peanut butter</li> </ul> </li> </ul>
<b>Dairy</b>	3 to 4 servings	<ul style="list-style-type: none"> <li>• 1 cup fat-free (skim) or low-fat (1%) milk</li> <li>• 1 cup soy, rice or nondairy milk</li> <li>• 1 ounce cheese</li> <li>• 1 string cheese stick</li> <li>• ¼ cup shredded cheese</li> <li>• 6 to 8 ounces yogurt</li> </ul>

## Examples of daily meals and snacks for teens 12 to 17 years old

Breakfast 1	Lunch 1	Dinner 1	Snack 1
Oatmeal, nuts, banana, milk	Cheese pizza, carrot sticks, berries, milk	Chicken breast, brown rice, vegetable and mixed green salad, milk	Apple with peanut butter
Breakfast 2	Lunch 2	Dinner 2	Snack 2
Egg, egg substitute or egg whites scrambled with vegetables and low-fat cheese, whole wheat toast, fresh orange slices, milk	Whole wheat pita or wrap with turkey or chicken, lettuce, tomato or other vegetable, flavored yogurt, apple, milk or water	Burrito (made with whole wheat tortilla), black or refried beans, cheese, vegetables (such as tomatoes, avocado, onions), salsa, low-fat sour cream, fruit salad, milk or water	Baked tortilla chips with salsa
Breakfast 3	Lunch 3	Dinner 3	Snack 3
Cereal, milk, fresh fruit	Whole wheat deli turkey sandwich, vegetable soup, mandarin oranges, milk	Whole grain spaghetti with meatballs, salad, steamed broccoli, cantaloupe, slice of garlic bread, water	Wheat thins, string cheese stick, grapes
Breakfast 4	Lunch 4	Dinner 4	Snack 4
Small bagel with light cream cheese and slice of ham, berries, milk	Hamburger on bun, fresh vegetables (carrots, cherry tomatoes, pea pods, cucumbers), melon, milk	Pot roast with potatoes and carrots, whole grain dinner roll, strawberries, milk	Vegetables or baked pita chips with low-fat dip or hummus
Dessert			

There is no dietary requirement (need to eat) for desserts and sweets. People just like them! Limit a sweet to 1 time a day rather than at every meal. If fruit does not work for your sweet tooth, try:

- ½ cup light ice cream
- 1 cookie (3 inches)
- Frozen fruit bar
- ½ cup pudding
- Small portion of a dessert you like



## What's on Your Plate?

### *Eating healthy without a measuring cup*

Eating a nutritiously balanced meal does not mean you have to measure every piece of food you eat. Instead, you can simply divide your plate into sections and follow the “MyPlate” guidelines from the U.S. Department of Agriculture.

Rather than think about what food is on hand to eat, start asking, “Do I have all the healthiest, nutrient-rich foods in each food group represented on my plate?” Follow these steps:

1. Use a 9-inch plate.
2. Fill a little more than  $\frac{1}{4}$  of your plate with vegetables or salad, or both.
  - Choose a variety of vegetables with different colors, such as red, orange and dark-green.
  - Limit deep-fried vegetables, such as French fries.
3. Fill a  $\frac{1}{4}$  of your plate with fruit.
  - Choose whole or cut-up fruit instead of fruit juice. For a beverage, choose water or fat-free (skim) or low-fat (1%) milk instead of juice. If you choose juice, drink 100 percent fruit juice and limit to 1 small glass (4 to 6 ounces) a day.



- Most fruit snacks do not count as a fruit. They are high in added sugars, such as corn syrup, sucrose, glucose or malt syrup.
4. Fill (but do not pile up) a little more than  $\frac{1}{4}$  of your plate with grains.
    - Choose whole grains whenever you can.
    - Grains are foods made from wheat, rice, oats, cornmeal, barley or other cereal grain. Bread, pasta, tortillas and breakfast cereals are examples.

5. Fill about  $\frac{1}{4}$  of your plate with a low-fat or lean protein.

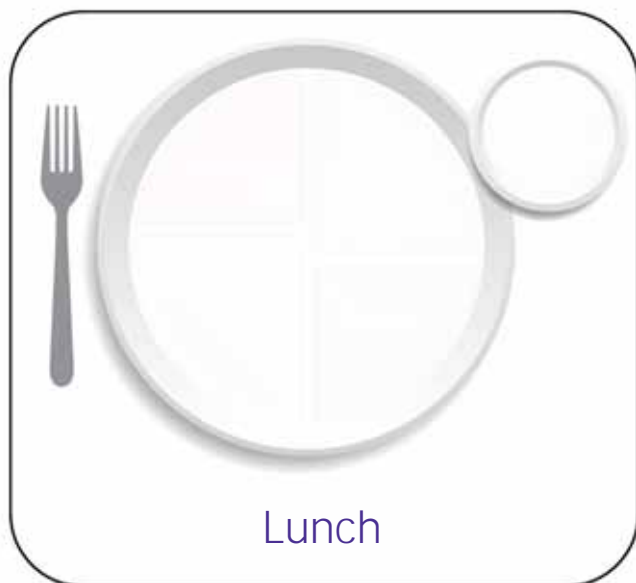
- Eat fish at least 2 times a week.
- Limit processed meats, such as bacon, ham, sausage, frankfurters and deli meats, which have added sodium and may be higher in fat.

6. Add a fat-free or low-fat dairy choice to your place setting.

- Dairy foods are especially important for healthy bones.
- Try lactose-free products if the lactose in dairy products upsets your stomach.

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## Fill your own lunch or dinner plate!



# Meal Planning and Grocery Shopping Guide

## *Eating better together*

By eating more meals at home as a family, you can improve the nutritional quality of everyone's diet and save money, time and energy. You also will have a ready answer to your children's question, "What's for dinner?" Lack of planning can lead to making unhealthy choices in the kitchen or last-minute stops at fast-food restaurants, where healthy choices often are limited.

With a little weekly planning, cooking at home does not have to be a hassle either. One way to make sure you prepare healthier meals is to buy healthier foods. Then you can think about having all the healthiest, nutrient-rich foods in each food group represented on your plate rather than stress about what food is on hand to prepare. To get started, follow these tips.

## Meal planning

- **Brainstorm ideas.** Get the family together to plan meals. Different tastes help keep meals varied and enjoyable. When children are involved in planning, they are more likely to eat what is prepared.
- **Start small.** Plan 1 or 2 meals a week for a few weeks. See what works and what does not. Talk as a family about what might help.
- **Simplify.** Use a variety of frozen or canned vegetables and fruits to make preparing meals easier and quicker and to save on foods spoiling if you cannot get to the grocery store frequently. Frozen and canned vegetables and fruits are packed with nutrients and also are a great substitute for when fresh vegetables and fruits are out of season.
- **Plan something quick for busy nights.** Save recipes that take more time for the weekend or weekdays when you do not feel as rushed.
- **Cook ahead of time.** Make a few meals to freeze for busy nights or just make extra to freeze for a meal a few weeks later.
- **Collect recipes and menus.** Save recipes and menus you really like to use next month.
- **Try a new recipe at least a few times a month.** Adding 1 to 2 new recipes each month creates variety in your mealtime routine.

# Grocery shopping

- **Shop from a detailed list.** Buying only what you need will save you time, limit the urge to buy items you do not need and reduce the likelihood of fresh foods from spoiling if you bought too much. Include on your list brand names and can sizes, especially if someone else does the grocery shopping.
- **Do not shop hungry.** Eat a healthy snack or meal before you go shopping. If you do not eat beforehand, everything tends to look appealing, especially items that are high in fat and sodium.
- **Shop the outer aisles.** The outer aisles of most grocery stores have the healthier and freshest choices, such as produce and dairy goods. The inner sections and special display are designed to entice shoppers with more snacks, sweets and processed foods.
- **Buy fresh.** Fresh foods are ideal because they naturally contain more fiber and nutrients and less fat and sodium. Also, you—not the manufacturer—can control the ingredients that go into your meals.
- **Look beyond eye level.** Often the low-fat, low-carb or reduced-calorie items are placed on high or low shelving in the grocery store rather than at eye level.
- **Read labels.** Compare similar items. Choose products that have the most fiber and least amount of fat, sodium and calories.

# Stocking the Kitchen for Healthy Eating

## *Foods to remove, replace and add*

Healthy eating begins in your food cupboards, the refrigerator and freezer. Start by removing foods high in added sugars (for example, corn syrup, sucrose, glucose or malt syrup) and fat (total and saturated). Also get rid of foods with partially hydrogenated oils, which contain trans fat. Replace these foods with healthier choices to make a difference in regularly eating a well-balanced, nutritious diet. Here are some suggestions to help stock your kitchen and have the healthiest foods on hand for daily meals and snacks. Be adventurous—try lots of new healthy foods.

	<i>Remove</i>	<i>Replace with</i>	<i>Add something new</i>
<b>Food cupboard</b>	<ul style="list-style-type: none"> <li>• High-fat crackers and chips</li> <li>• Sweets and pastries</li> <li>• Candy</li> <li>• Soda</li> <li>• Fruit drinks</li> <li>• Sweetened cereal</li> </ul>	<ul style="list-style-type: none"> <li>• Low-fat crackers (whole grain, graham, saltines)</li> <li>• Low-fat pretzels</li> <li>• Baked chips</li> <li>• Nuts</li> <li>• Dried fruit</li> <li>• Canned fruit (in own juice)</li> <li>• Canned vegetables</li> <li>• Calorie-free beverages</li> <li>• Whole grain cereal (with 8 grams or less of sugar per serving)</li> <li>• Oatmeal</li> </ul>	<ul style="list-style-type: none"> <li>• Whole grain pasta</li> <li>• Brown rice</li> <li>• Dried beans, peas</li> <li>• Flavored vinegars</li> <li>• Herbs, spices</li> </ul>

	<i>Remove</i>	<i>Replace with</i>	<i>Add something new</i>
<b>Refrigerator</b>	<ul style="list-style-type: none"> <li>• Whole and chocolate milk</li> <li>• Regular mayonnaise</li> <li>• Regular salad dressings</li> <li>• Regular cream cheese</li> <li>• High-fat cheese</li> <li>• Bologna</li> <li>• Salami</li> </ul>	<ul style="list-style-type: none"> <li>• Fat-free (skim) or low-fat (1%) milk</li> <li>• Light mayonnaise</li> <li>• Light salad dressings</li> <li>• Light cream cheese</li> <li>• Reduced fat cheese (less than 5 grams of fat per ounce)</li> <li>• String cheese</li> <li>• Fat-free plain or flavored yogurt</li> <li>• Fat-free pudding</li> <li>• Low-fat deli meats</li> </ul>	<ul style="list-style-type: none"> <li>• Egg substitute or egg whites</li> <li>• Shredded Parmesan cheese</li> <li>• Lemons</li> <li>• Whole wheat tortillas</li> <li>• Salsa</li> </ul>
<b>Freezer</b>	<ul style="list-style-type: none"> <li>• Regular ice cream</li> <li>• Deep dish pizza</li> <li>• Fried chicken</li> <li>• Less than 85% lean ground beef</li> <li>• Frozen vegetables in cheese, butter or cream sauce</li> </ul>	<ul style="list-style-type: none"> <li>• Chicken breasts and cutlets</li> <li>• 85% or more lean ground beef</li> <li>• Thin crust cheese or vegetable pizza</li> <li>• Light ice cream</li> <li>• Frozen or steam-in-the bag vegetables</li> </ul>	<ul style="list-style-type: none"> <li>• Frozen fruit</li> <li>• Unbreaded fish fillets</li> <li>• Frozen fruit bars</li> </ul>

# How to Read the “Nutrition Facts” Label

The “Nutrition Facts” label provides detailed information about the nutrients in a food product. The label allows you to compare similar products to see which might be a better choice.

## Serving Size and Servings Per Container

- All of the information on the label is based on the serving size.
- Consider whether you will be satisfied with 1 serving. Some small containers that you might eat in 1 sitting may have 2 or more servings. If you eat 2 servings, you need to double the nutrient values and calories.

## % Daily Value

- Use the % daily value to tell if the nutrient in 1 serving is high, a good source or low.
  - » 20% or more means a food is high in a nutrient
  - » 10 to 19% means a food is a good source of a nutrient
  - » 5% or less means a food is low in a nutrient
- Choose foods low in fat, cholesterol and sodium.
- Choose foods high in fiber.

Nutrition Facts			
Serving Size 1/2 cup (130g)			
Servings Per Container About 3.5			
Amount Per Serving			
Calories 130    Calories from Fat 20			
		%Daily Value*	
Total Fat	2g		3%
Saturated Fat	0.5g		3%
Trans Fat	0g		0%
Cholesterol	0mg		0%
Sodium	500mg		21%
Total Carbohydrate	22g		7%
Dietary Fiber	9g		36%
Sugars	1g		
Protein	6g		16%
Vitamin A 2%    •    Vitamin C 2%			
Calcium 6%    •    Vitamin D 8%			
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.			
		Calories	2000    2500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g
Calories per Gram			
Fat	9	Carbohydrate	4    Protein 4
<b>INGREDIENTS:</b> WHOLE GRAIN ROLLED OATS (WITH OAT BRAN), SUGAR, PARTIALLY HYDROGENATED SOYBEAN OIL, NATURAL AND ARTIFICIAL FLAVORS, SALT, CALCIUM CARBONATE, GUAR GUM, CARAMEL COLOR, NIACINAMIDE, VITAMIN A PALMITATE, REDUCED IRON PYRIDOXINE HYDROCHLORIDE, RIBOFLAVIN THIAMIN MONONITRATE, FOLIC ACID.			

## Total Fat

- Foods claiming to be low fat must have less than 3 grams fat per 100 calories.
- Eat no more than 3 to 8 servings of fat a day, depending on your calorie intake. One serving contains 4 to 5 grams of total fat. One gram of fat equals 9 calories.

## Saturated Fat

- Aim for less than 2 grams saturated fat a serving.
- Limit saturated fat to 9 to 16 grams or less a day.

## Trans Fat

- Ideally avoid trans fat.
- Foods with less than ½ gram of trans fat a serving can be labeled 0 grams trans fat.
- Check the ingredients for partially hydrogenated vegetable oil, which contains trans fat.

## Sodium

- Eat less than 200 to 300 milligrams (mg) sodium a serving for most foods—less than 500 mg for soup and less than 600 to 800 mg for an entrée or frozen dinner.
- Aim to eat less than 2,300 mg sodium a day. One teaspoon of salt contains 2,400 mg of sodium.

## Dietary Fiber

- Choose breads with at least 2 to 3 grams of fiber a slice.
- Aim for the following amount of fiber a day:
  - » **Kids:** 5 grams plus number of years old of fiber a day—For example, an 8-year old should eat 13 (5 plus 8) grams or more fiber a day
  - » **Adults:** 20 to 35 grams or more fiber a day

## Ingredients

- Ingredients used to make a food product are listed in order by weight.
- Look for whole grain as the 1st ingredient in bread, cereal and other grain products. Whole grains contain the entire grain kernel.



One of the best ways to help children and teens eat healthy is to encourage them to learn to cook. Learning to cook a dish or even entire meals helps kids find out about nutrition and understand what it means to eat healthy.

## Hands-on experience

Kids who learn to cook benefit in other ways, too. Kids:

- Are more likely to eat healthy
- Contribute to the family
- Learn about planning and making choices
- Develop a life skill and boost their self-esteem
- Expand their understanding of math
- Explore their creativity
- May be more willing to try new foods

## Supervising

How much supervising kids need in the kitchen depends on their age and maturity, especially with cutting and cooktop and oven tasks. Younger children usually need more direction and fewer tasks. Older teens may require little supervision. Safety is key. Here are some general recommendations to help your young chef get started.

## Planning

- Make a list of favorite foods. Choose a recipe or plan a balanced meal with some of these foods.
- Take turns choosing a new vegetable, fruit or other food item. Have everyone try it and share opinions.
- Write down a list of ingredients to get at the grocery store.
- Read the “Nutrition Facts” label on food items while shopping to check serving sizes, calories (and calories from fat), percent of protein, fiber, salt and saturated or trans fat.

## Setting up

- Make sure the cooking area “fits.” A lower table or step stool or chair may be necessary to work comfortably at a counter or to reach a cooktop or microwave.
- Use kid-friendly tools. For example, an apron, or a smaller-sized spoon or spatula, mixing bowl and oven mitts that are easier to handle.
- Teach the names and uses of cooking equipment. For example, you use a saucepan on the stove and you put a baking sheet in the oven.
- Put colored tape on the smooth edge of a knife as a reminder (if necessary) to use the bottom edge to cut food.

## Cooking

- Wash hands with soap and warm water.
- Re-read the cooking steps in the recipe.
- Gather ingredients.
- Wash ingredients if necessary, such as fresh vegetables or fruits.

- Wash hands and countertops after handling raw meat or unpasteurized eggs.
- Choose the right-sized pot and burner that best fits the pot.
- Preheat oven if necessary. Or review microwave buttons or instructions for different types of foods or cooking methods.
- Use measuring cups and spoons to measure ingredients.
- Combine the ingredients according to the recipe.
- Use a kitchen timer to keep track of timed steps.
- Clean up.
- Eat up and enjoy. Talk at regular family meals about the characteristics of foods. Are they sweet or spicy, soft or crunchy or hot or cold?

## Eating Away from Home

### *Strategies for healthier eating*

Whether your family eats out at—or gets takeout from—a restaurant, fast-food chain, coffee shop or the deli section at the grocery store, food away from home can be nutritious and enjoyable. The key to healthy eating out is to choose the healthier items on the menu. Here are some strategies to help choose where to eat and what you eat when eating away from home.

### Choosing where to eat

- **Call ahead.** Check with unfamiliar restaurants about the types of foods served and the cooking method. Ask if the restaurant is able to prepare items by special request.
- **Go online.** See if the restaurant posts the menu. Many restaurants have websites where you can find calorie and fat information for each menu item.
- **Decide what you want in advance.** Then at the restaurant, you do not even need to open the menu and be tempted by other choices.
- **Choose a place to eat that has a wide variety of healthy fresh foods.** Look for salads, whole grain breads, and grilled or broiled meats and seafood.
- **Avoid places that limit eating to 1 or 2 entrée choices.** Places that specialize in just a few items, such as fried chicken or fish and chips, make choosing healthy difficult.
- **Avoid places that encourage eating to get your money's worth.** Places that offer “all-you-can-eat” menu items or “2-for-the-price-of-1” deals may appear tempting. But often they create a situation where you may eat too large an amount.
- **Supplement a takeout item with healthy foods at home.** For example, if you order a pizza, prepare a salad and eat while waiting for the pizza to be delivered. Add a fruit for dessert.

## Choosing what to eat

- **Order 1st.** Waiting to hear what others order may tempt you to break your commitment to eat healthy.
- **Pick items from the menu with healthy words in their descriptions.** Look for *baked, broiled, grilled, poached, roasted, simmered, steamed, stir fried, lean, fresh* or *light*.
- **Avoid items on the menu that suggest a higher fat content and calories.** Look for *au gratin, fried, béarnaise, breaded, buttered, creamed or creamy, cheesy, crispy, deep fried, hollandaise, pastry, prime, rich, rotisserie, smothered, stuffed, sautéed* or *scalloped*. Also avoid items with cream or cheese sauces.
- **Ask for substitutions.** For example, can the restaurant substitute steamed vegetables, fruit or baked potato instead of French fries, mustard instead of mayonnaise or tomato sauce instead of a cream sauce. Note you may have to pay an extra charge for substitutions.
- **Ask your server to remove “all-you-can-eat” items.** For chips and salsa, bread or similar refillable items, have your server remove the item after 1 serving.
- **Split an entrée.** Ask your server to bring an extra plate and share an order. Or ask for a takeout box before beginning your meal and place some food aside to take home.
- **Order smaller portions.** Instead of ordering an entrée, order an item on the menu on its own without side servings (à la carte) or appetizer portions.



# Eating Healthy on Holidays and at Parties

Celebrations with family and friends often are all about the food. These events can make eating healthy a bit of a challenge. People gather in the kitchen and around the table—just where all the food is. Many of the foods are high in fat and sugar. You can still enjoy these foods. The key is to limit portion size and number of servings. Plan ahead and follow these tips when cooking in the kitchen and eating at the celebration.

## In the kitchen

- Make a new, healthier dish to share.
- Try altering traditional recipes to have less fat and calories. For example, you often can substitute evaporated skim milk for cream in sauces or casseroles, or you can use low-fat plain yogurt or lite sour cream instead of regular sour cream. Use extra spices, seasoning and fresh herbs to enhance flavors of your favorite holiday foods.
- Check holiday cookbooks and websites that offer recipes lower in fat and calories.
- Cook dishes ahead of time if possible to minimize stress in a busy schedule.
- Offer to bring low-calorie party food, such as raw vegetables with nonfat dip, fresh fruit, whole-grain crackers or baked tortilla chips with salsa. You will be sure to have something healthy to eat.

## Make a plan

- Eat a healthy breakfast and snack before going to parties or eating large holiday meals so you are not “starving” when you fill your plate.
- Think about what your personal triggers are to overeat and how you can minimize them. For example, if boredom can lead to overeating, do not stand next to the food table.
- Make weight maintenance the goal. Trying to lose weight around the holiday season, for example, between Halloween and New Year's, can be difficult. Maintaining your weight is a major accomplishment to celebrate.
- Keep exercise a priority to avoid gaining extra pounds and to maintain a healthy lifestyle even in a busy schedule.

## At the celebration

- Always start by filling your plate with healthy vegetables and lean proteins, such as turkey or lean beef. Fill in the rest of the plate with other foods.
- Do not add extra butter or salt to your food.
- Have a smaller serving of favorite foods that are higher in fat and calories.
- Eat slowly, mindfully and enjoy every bite.
- Drink plenty of water.
- When you have eaten, clear your plate and clear out—away from the food and snacks.
- Spend time away from the table and kitchen talking and enjoying family and friends. Invite someone to go for a walk and get some fresh air after eating or to do an activity together.
- Avoid taking large amounts of leftovers home.

# Physical Activity Recommendations for Preschoolers 2 to 5 Years Old

Physical activity is important for young children's growth and good health. It helps children develop a healthy heart, lungs and immune system to fight off illness, as well as strong bones and muscles, and balance and coordination. Physical activity also helps relieve stress and provides an opportunity to have fun.

If kids are not physically active, as adults they may lack physical endurance, strength, coordination and the ability to do physical tasks. These problems can increase the risk of chronic illnesses and lower self-esteem.

## Types of activities

To help be healthy and fit, it is important to regularly do 3 different types of activities:

- Aerobic
- Strengthening
- Balance and coordination

Each type of activity provides particular benefits, but it is important to do all 3 types. Just by keeping active, kids also will improve their flexibility. For examples of activities within each type, see the other side of this sheet.

### **Aerobic**

- Promotes endurance and heart health
- Helps control weight
- Improves cardiovascular fitness
- Lowers blood pressure and cholesterol

### **Strengthening**

- Strengthens bones and muscles
- Promotes stability for movement
- Reduces risk of injury

### **Balance and coordination**

- Helps to move around more efficiently
- Improves awareness of body
- Promotes self-confidence

## Amount of physical activity

**Target goal: 1½ to 2 hours of movement and active play throughout every day**

- Do not allow your preschooler to sit for more than 1 hour without getting up and moving around (except when sleeping).
- Begin with goals that are easy to achieve and boost confidence with the success. For example, if your preschooler is active for 30 minutes a day now, each week increase activity by 10 minutes.

## Tips for making physical activity fun

To help young children enjoy being physically active and make it a lifetime habit, let them choose the activity. It may take them time to find what they like and will keep at. But there are many choices to try and they will discover activities that are fun for them. Follow these tips to help keep your preschooler motivated to move:

- Make sure the activity is age-appropriate
- Involve the whole family
- Take a class or join a team
- Encourage free play with an activity to do alone or with a friend anytime
- Incorporate music into the activity

## Examples of physical activities for preschoolers 2 to 5 years old

### ***Aerobic***

#### **At home**

- Dancing
- Doing jumping jacks
- Playing red light, green light
- Galloping or skipping

#### **Outside of home**

- Playing tag games
- Playing at indoor play park centers
- Doing relay races
- Jumping and bouncing on large inflatable structures at play centers

## ***Strengthening***

### **At home**

- Pushing, pulling and carrying an object, such as a laundry basket
- Jumping games, such as leapfrog, or jumping over objects or tape on the floor
- Using small climbing and slide structures, such as those by Little Tikes or Step2
- Playing tug of war

### **Outside of home**

- Climbing equipment at the playground
- Pedaling a tricycle or bicycle
- Swimming
- Doing karate

## ***Balance and coordination***

### **At home**

- Crawling over and under objects, such as pillows, tables and chairs in an obstacle course
- Doing the crab walk
- Playing imitation games, such as standing on 1 leg, touching toes or raising arms in the air
- Walking up and down stairs instead of being carried

### **Outside of home**

- Playing hopscotch
- Ice skating
- Doing gymnastics
- Walking at the mall instead of using a stroller



# Physical Activity Recommendations for Children 6 to 11 Years Old

Physical activity is important for children's growth and good health. It helps children develop a healthy heart, lungs and immune system to fight off illness, as well as strong bones and muscles, and balance and coordination. Physical activity also helps relieve stress and provides an opportunity to have fun.

If kids are not physically active, as adults they may lack physical endurance, strength, coordination and the ability to do physical tasks. These problems can increase the risk of chronic illnesses and lower self-esteem.

## Types of activities

To help be healthy and fit, it is important to regularly do 3 different types of activities:

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- Strengthening
- Balance and coordination

Each type of activity provides particular benefits, but it is important to do all 3 types. Just by keeping active, kids also will improve their flexibility. For examples of activities within each type, see the other side of this sheet.

### ***Aerobic***

- Promotes endurance and heart health
- Helps control weight
- Improves cardiovascular fitness
- Lowers blood pressure and cholesterol

### ***Strengthening***

- Strengthens bones and muscles
- Promotes stability for movement
- Reduces risk of injury

### ***Balance and coordination***

- Helps to move around more efficiently
- Improves awareness of body
- Promotes self-confidence

## Amount of physical activity

**Target goal: 1 hour 6 to 7 days a week**

- Avoid sitting for more than 2 hours without getting up and moving around.
- Begin with goals that are easy to achieve and boost confidence with the success. For example, if your child is active for 30 minutes a day now, each week increase activity by 10 minutes.

## Tips for making physical activity fun

To help children enjoy being physically active and make it a lifetime habit, let them choose the activity. It may take them time to find what they like and will keep at. But there are many choices to try and they will discover activities that are fun for them. Follow these tips to help keep your child motivated to move:

- Make sure the activity is age-appropriate
- Involve the whole family
- Take a class or join a team
- Encourage free play with an activity to do alone or with a friend anytime
- Incorporate music into the activity

## Examples of physical activities for children 6 to 11 years old

### ***Aerobic***

#### **At home**

- Dancing
- Doing jumping jacks
- Walking up and down stairs
- Playing tennis, bowling and other sports video games, such as Nintendo Wii

#### **Outside of home**

- Swimming, playing in the water
- Playing sand tag on park equipment
- Playing soccer
- Skiing
- Riding scooters
- Riding bikes on obstacle courses

## ***Strengthening***

#### **At home**

- Doing yoga
- Doing pull ups on a chin bar
- Carrying grocery bags in from the car
- Pulling the garbage cans out to the curb for pick up

#### **Outside of home**

- Crossing the monkey bars at the playground
- Biking
- Shooting baskets
- Playing catch
- Jumping on the trampoline

## ***Balance and coordination***

#### **At home**

- Doing the crab walk
- Standing on 1 leg
- Doing the hula hoop
- Doing dance video games, such as Dance Dance Revolution
- Jumping on the trampoline
- Playing hopscotch
- Bouncing around on a pogo stick

#### **Outside of home**

- Playing hopscotch
- Playing jump rope games and tricks
- Skateboarding
- Inline skating
- Playing tennis
- Ice skating

# Physical Activity Recommendations for Teens 12 to 17 Years Old

Physical activity is important for teens' growth and good health. It helps teens develop a healthy heart, lungs and immune system to fight off illness, as well as strong bones and muscles, and balance and coordination. Physical activity also helps relieve stress and provides an opportunity to have fun.

If teens are not physically active, as adults they may lack physical endurance, strength, coordination and the ability to do physical tasks. These problems can increase the risk of chronic illnesses and lower self-esteem.

## Types of activities

To help be healthy and fit, it is important to regularly do 3 different types of activities:

- Aerobic
- Strengthening
- Balance and coordination

Each type of activity provides particular benefits, but it is important to do all 3 types. Just by keeping active, kids also will improve their flexibility. For examples of activities within each type, see the other side of this sheet.

### **Aerobic**

- Promotes endurance and heart health
- Helps control weight
- Improves cardiovascular fitness
- Lowers blood pressure and cholesterol

### **Strengthening**

- Strengthens bones and muscles
- Promotes stability for movement
- Reduces risk of injury

### **Balance and coordination**

- Helps to move around more efficiently
- Improves awareness of body
- Promotes self-confidence

## Amount of physical activity

**Target goal: 1 hour 6 to 7 days a week. Raise heart rate for at least 20 consecutive minutes, 4 or more times a week**

- Avoid sitting for more than 2 hours without getting up and moving around.
- Begin with goals that are easy to achieve and boost confidence with the success. For example, if your teen is active for 30 minutes a day now, each week increase activity by 10 minutes.

## Tips for making physical activity fun

To help teens enjoy being physically active and make it a lifetime habit, let them choose the activity. It may take them time to find what they like and will keep at. But there are many choices to try and they will discover activities that are fun for them. Follow these tips to help keep your teen motivated to move:

- Make sure the activity is age-appropriate
- Involve the whole family
- Take a class or join a team
- Encourage choosing an activity to do with a friend

## Examples of physical activities for teens 12 to 17 years old

### *Aerobic*

#### **At home**

- Playing tennis and other sports video games, such as Nintendo Wii
- Doing jumping jacks
- Walking up and down stairs
- Using a treadmill or elliptical exercise equipment
- Using a jump rope

#### **Outside of home**

- Swimming
- Jogging
- Playing soccer
- Playing tennis

- Riding scooters
- Riding bikes on obstacle courses

## **Strengthening**

### **At home**

- Doing yoga
- Doing pull ups on a chin bar
- Using an inflatable exercise stability ball
- Using rubber exercise bands

### **Outside of home**

- Lifting weights at a gym
- Taking a Pilates or yoga class
- Hiking
- Kickboxing

## **Balance and coordination**

### **At home**

- Standing on 1 leg
- Doing the hula hoop
- Doing dance video games, such as Dance Dance Revolution
- Jumping on the trampoline
- Bouncing around on a pogo stick

### **Outside of home**

- Playing Ultimate Frisbee
- Skateboarding
- Ice skating
- Doing indoor rock climbing



# Nutrition and Physical Activity Goals

Setting goals helps increase your chances of success when trying to make changes for a healthier lifestyle. Goals give you something specific to aim for. Start with a few short-term goals. Trying to change everything at the same time can be overwhelming.

Choose what is important to you and focus on it. Identify the reason or reasons that make the goal worth going for. These reasons need to be true for you. Your clinician will help you identify goals that are meaningful to you. Some ideas are listed here as well. Use this sheet to write down your goals.

## Possible nutrition goals

- Eat a vegetable (even if only 1 bite) at dinner at least \_\_\_\_\_ times a week.
- Choose a piece of fruit instead of a snack food at school lunch \_\_\_\_\_ times a week.
- Go grocery shopping with mom or dad and pick out \_\_\_\_\_ new vegetable and \_\_\_\_\_ new fruit to try at home.
- Wash, cut up and place vegetables or fruit in single-serving containers for snack after school every day this week.
- Eat breakfast every morning sitting down before school.
- Drink a glass of milk with at least \_\_\_\_\_ meals or snacks each day.

## Possible physical activity goals

- Do 25 jumping jacks when I wake up in the morning.
- Jump rope for 5 minutes after every TV show I watch.
- Use an exercise stability ball to sit on while watching TV.
- Sign up to try a new sport or organized activity, such as karate
- Walk the dog for \_\_\_\_\_ minutes every morning for \_\_\_\_\_ weeks.

## My nutrition goals

**Goal 1:** \_\_\_\_\_

Why this goal is important to me: \_\_\_\_\_

\_\_\_\_\_

Date goal set: \_\_\_\_\_

Things that may get me off track with my goal:

\_\_\_\_\_

\_\_\_\_\_

What I can do to get back on track with my goal:

\_\_\_\_\_

\_\_\_\_\_

**Goal 2:** \_\_\_\_\_

Why this goal is important to me: \_\_\_\_\_

\_\_\_\_\_

Date goal set: \_\_\_\_\_

Things that may get me off track with my goal:

\_\_\_\_\_

\_\_\_\_\_

What I can do to get back on track with my goal:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## My physical activity goals

**Goal 1:** \_\_\_\_\_

Why this goal is important to me: \_\_\_\_\_

\_\_\_\_\_

Date goal set: \_\_\_\_\_

Things that may get me off track with my goal:

\_\_\_\_\_

\_\_\_\_\_

What I can do to get back on track with my goal:

\_\_\_\_\_

\_\_\_\_\_

**Goal 2:** \_\_\_\_\_

Why this goal is important to me: \_\_\_\_\_

\_\_\_\_\_

Date goal set: \_\_\_\_\_

Things that may get me off track with my goal:

\_\_\_\_\_

\_\_\_\_\_

What I can do to get back on track with my goal:

\_\_\_\_\_

\_\_\_\_\_

## **Pediatric Obesity Tool Kit**

Putting clinical protocols and education resources into practice to help children and families improve health

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