

Clinical Practice Guideline Title:		
Nutritional management of Pediatric patients with overweight and obesity		
Ownership: Medical Support Services Department / Nutrition Section	Effective Date: August 2018	Code: HS-MSSD-CPG008
	Revision Due Date: August 2021	
Applies to:		
☒ Hospitals ☒ Primary Healthcare Centers ☒ Specialized Centers ☐ Others (Specify):		

1 Clinical criteria:

1.1 Introduction:

The protocol is designed to meet the following objectives:

- (i) To standardize the nutrition management and care in clinical practice of managing Pediatric patients with overweight and obesity.
- (ii) To provide a ready reckoner of updated evidence based guidelines for the dieticians and those involved in the nutritional management of Pediatric patients with overweight and obesity.
- (iii) To enhance the quality of life of the patients with effective nutrition care.
- (iv) To improve the quality of nutritional care provided in the hospitals and primary health care facilities under the Ministry of Health and Prevention,

1.1 Inclusion Criteria

Pediatric patients with overweight and obesity.

1.2 Exclusion Criteria

Normal pediatric, adult and geriatric patients.

2. Protocol

- Overweight and obesity are defined as "abnormal or excessive fat accumulation that presents a risk to health".
- Causes of children overweight and obesity:
 1. Nutritional factors: Energy imbalance between the calories entering the body and the calories it burns.
 2. Genetics.
 3. Lack of activity and movement.
 4. Intake medications.
 5. Psychological factor.

Measuring overweight and obesity

It is difficult to develop one simple index for the measurement of overweight and obesity in children and adolescents because their bodies undergo a number of physiological changes as they grow. Depending on the age, different methods to measure a body's healthy weight are available:

For children aged 0-5 years

The WHO Child Growth Standards, launched in April 2006, include measures for overweight and obesity for infants and young children up to age 5.

Overweight:

Weight-for-height greater than 2 standard deviations above WHO Child Growth Standards median.

Obesity:

Weight-for-height greater than 3 standard deviations above the WHO Child Growth Standards median.

<http://www.who.int/entity/childgrowth/en/index.html>

For individuals aged 5-19 years

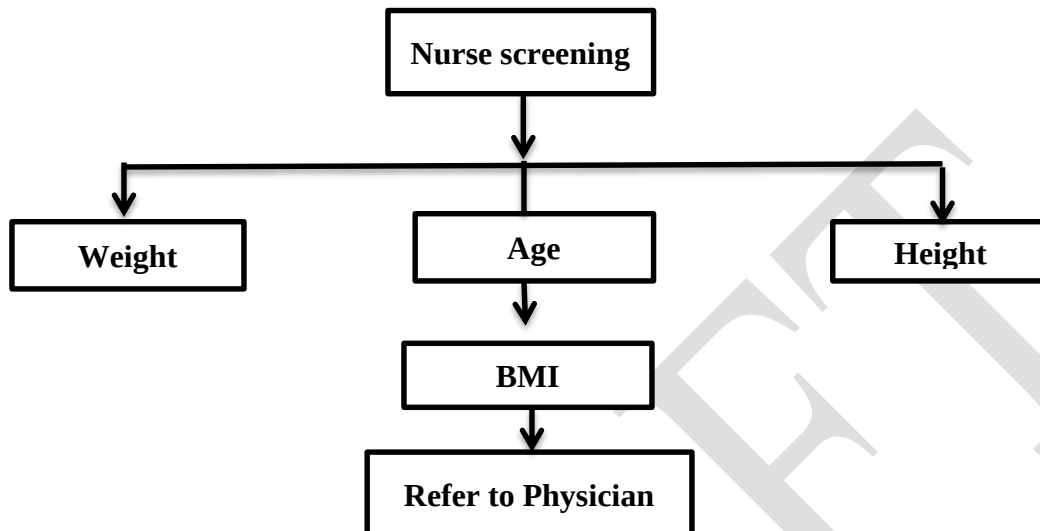
Overweight is the ratio of body mass index to age greater than a standard deviation above the median value above the curve 1.

Obesity: is the increase on two standard deviations above the median value above curve 2

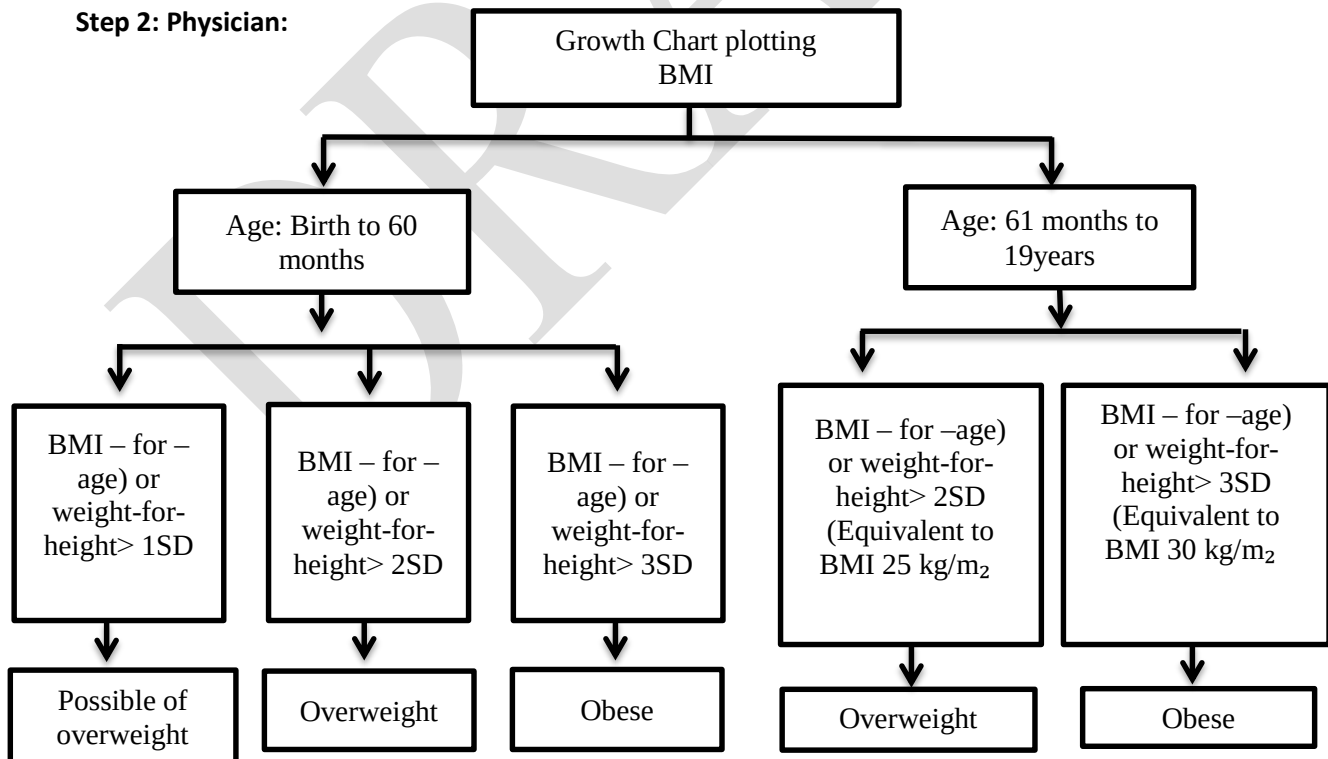
<http://www.who.int/entity/growthref/en/index.html>

Nutrition Screening

First step for the child to be screened by the nurse for the Weight, Age and Height, then to be referred to the Physician



Step 2: Physician:





To interpret the plotted graph

Z-score	Growth indicators			
	Length/height-for-age	Weight-for-age	Weight-for-length/height	BMI-for-age
Above 3	See note 1	See note 2	Obese	Obese
Above 2			Overweight	Overweight
Above 1			Possible risk of overweight (See note 3)	Possible risk of overweight (See note 3)
0 (median)				
Below -1				
Below -2	Stunted (See note 4)	Underweight	Wasted	Wasted
Below -3	Severely stunted (See note 4)	Severely underweight (See note 5)	Severely wasted	Severely wasted

Measurements in the shaded boxes are in the normal range.

Notes:

1. A child in this range is very tall. Tallness is rarely a problem, unless it is so excessive that it may indicate an endocrine disorder such as a growth-hormone-producing tumor. Refer a child in this range for assessment if you suspect an endocrine disorder (e.g. if parents of normal height have a child who is excessively tall for his or her age).
2. A child whose weight-for-age falls in this range may have a growth problem, but this is better assessed from weight-for-length/height or BMI-for-age.
3. A plotted point above 1 shows possible risk. A trend towards the 2 z-score line shows definite risk.
4. It is possible for a stunted or severely stunted child to become overweight.
5. This is referred to as very low weight in IMCI training modules. (Integrated Management of Childhood Illness, In-service training. WHO, Geneva, 1997).

Assessment :

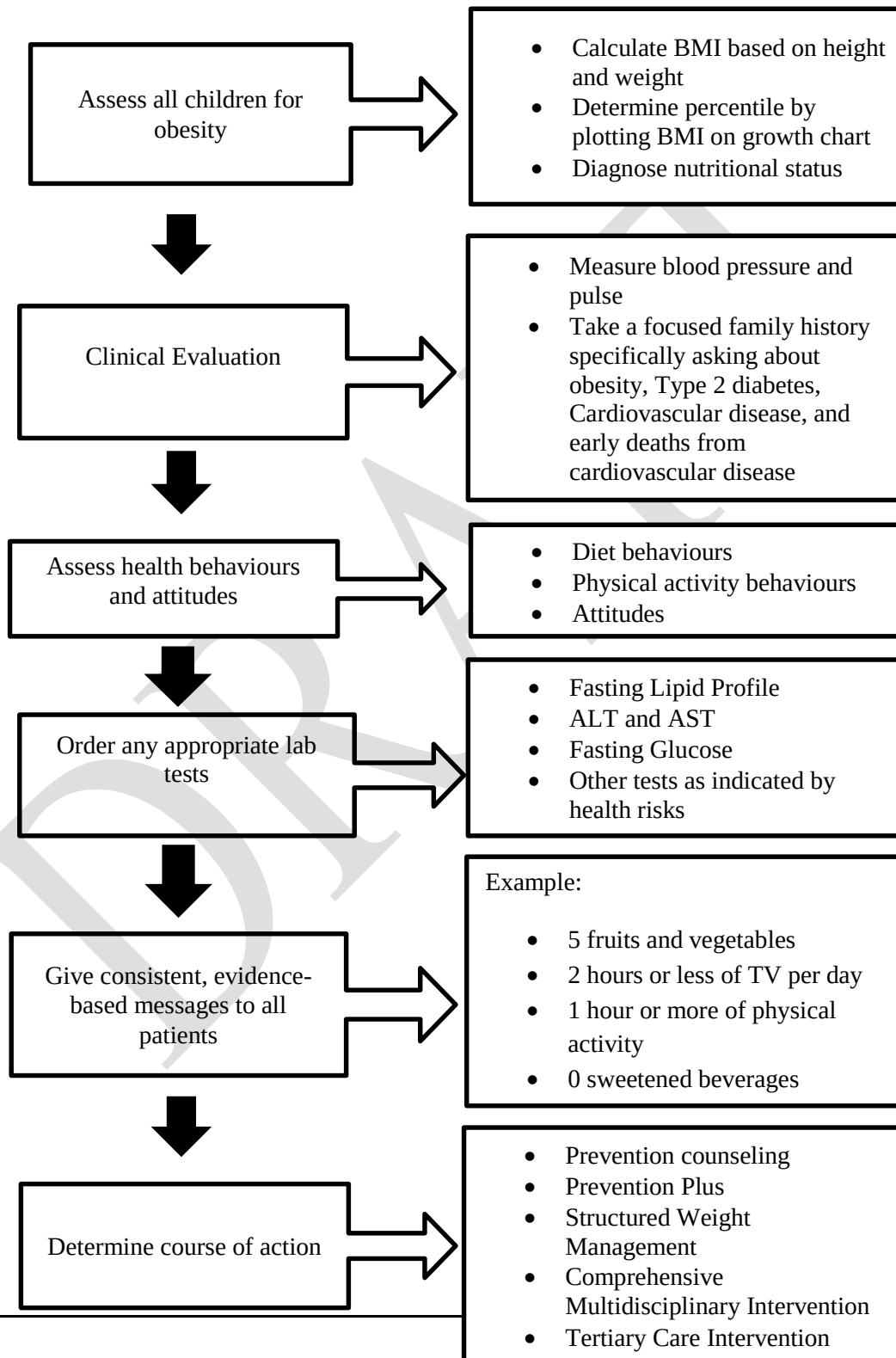
- For each patient, consider patient's risk by virtue of (family history, height and weight gain pattern, socioeconomic, ethnic, cultural, presence of comorbidities and/ or environmental factors).

Conduct thorough history :

Dietary assessment	Physical activity assessment	Behaviours assessment
❖ Sweetened-beverage consumption ❖ Fruit and vegetable consumption ❖ Frequency of eating out and family meals ❖ Consumption of excessive portion sizes ❖ Daily breakfast consumption	❖ Outdoor time ❖ Organized activity ❖ Sports involvement ❖ Amount of moderate physical activity	❖ screen time. ❖ TV in room ❖ sleeping hours

- Beginning at age 2, calculate and plot BMI for all patients on a yearly basis.

Childhood Obesity Assessment and Treatment Algorithm



Intervention :

Fifteen-Minute Obesity Prevention Protocol

Step 1

Assess

- Assess weight and height and convert to BMI
- Ask parent or child if older enough to fill out Health Habits Assessment.

Step 2

Set Agenda

- Decide which, if any, of the Healthy Habits target behaviors the
- Parent/child/adolescent may be interested in changing?
- Or which might be easiest to change?

Step 3

- Assess Motivation and Confidence
- Assess willingness/importance
- Assess confidence
- Explore importance and confidence ratings with the following probes:

Step 4

Summarize and probe possible changes

Decide possible next steps

Set Goal- give handouts for goal

Document on Healthy Habits Assessment Form- copy for chart and patient

Step 5

Schedule follow-visit

- Agree to follow-up visit with x weeks/months

Step	Sample Language
Step 1. Asses	
- Assess weight and height and convert to BMI - Provide BMI information	- We checked your child's BMI, which is a way of looking at weight and taking into consideration how tall someone is. - Your child's BMI is in the range where we start to be concerned about extra weight causing health problems.
Elicit parent's concerns	What concerns, if any, do you have about your child's weight? "He did jump 2 sizes this year. Do you think he might get diabetes someday?"
Reflect/investigation	- So you've noticed a big change in his size and you are concerned about diabetes down the road. - What makes you concerned about diabetes in particular?
Assess sweetened beverage, fruit, and vegetable intake, television viewing and other sedentary behaviours, frequency of fast food or restaurant eating, consumption of breakfast, and other factors.	Use verbal questions or brief questionnaires to assess key behaviours) Example: About how many times a day does your child drink soda, sports drinks, or powdered drinks like Kool-Aid?
Provide/elicite positive feedback for behavior(s) in optimal range; elicit response; reflect/probe.	- You are doing well with sugared drinks. "I know it's not healthy. He used to drink a lot of soda, but now I try to give him water whenever possible - I think we are down to just a few sodas a week." So, you have been able to make a change without too much stress.
Provide neutral feedback for behaviours not in optimal range; elicit response; reflect/probe.	Your child watches 4 hours of television on school days. What do you think about that? "I know it's a lot, but he gets bored otherwise and starts picking an ar so, watching TV keeps the household calm.gument with his little sister."

	cooking a bit more.”
Step 4. Summarize and investigation possible changes	
Question possible next steps	So where does that leave you? or From what you mentioned it sounds like eating less fast food may be a good first step, or How are you feeling about making a change?
Investigation plan of attack	What might be a good first step for you and your child? or What might you do in the next week or even day to help move things along? or What ideas do you have for making this happen? (If patient does not have any ideas) If it's okay with you, I'd like to suggest a few things that have worked for some of my patients.
Summarize change plan; provide positive Feedback	Involving child in cooking or meal preparation, ordering healthier foods at fast food restaurants, and trying some new recipes at home.
Step 5. Schedule follow-up visit	
Agree to follow-up visit within x weeks/months	Let's schedule a visit in the next few weeks/months to see how things went.
If no plan is made	Sounds like you aren't quite ready to commit to making any changes now. How about we follow up with this at your child's next visit? or Although you don't sound ready to make any changes, between now and our next visit you might want to think about your child's weight gain and lowering his diabetes risk.

❖ **Steps to Prevention and Treatment**

Stage	Components	Where Implemented	Implemented by Whom and Skills Needed	Frequency of Visits/Duration Before Moving to Next Stage
Stage 1 Prevention plus	Recommend 5 servings of fruits and vegetables per day, -2 h of screen time per day, no television in room where child sleeps, and no television if 2 y of age. -Minimize or eliminate sugar-sweetened beverages. Address eating behaviours (eg, eating away from home, daily breakfast, family dinners, and skipping meals). -Recommend 1 h of physical activity per day. Amount of physical activity may need to be graded for children who are sedentary; they may not achieve 1 h/d initially. -Involve whole family in lifestyle changes. - Acknowledge cultural differences.	-Primary care office	-Dietitian -Primary care provider or trained professional staff -member (eg, registered nurse)	Visit frequency should be based on accepted readiness to change/behavioral counseling techniques and tailored to patient and family. -Provider should encourage more-frequent visits when obesity is more severe. -Advance to more-intensive level of intervention depending on responses to treatment, age, health risks, and motivation. -A child in this stage whose BMI has tracked in same percentile over time with no medical risks may have low risk for excess body fat. -Clinicians can continue obesity prevention strategies and not advance treatment stages



	Stage 2 Structured weight management	-Develop plan with family for balanced-macronutrient diet emphasizing small amounts of energy-dense foods -Because diet provides less energy, ensure that protein is high quality and sufficient to prevent loss of muscle mass. -Increase structure of daily meals and snacks. -Reduce screen time to 1 h/d. Increase time spent in physical activity (60 min of supervised active play per day). -Instruct patient and/or parent in monitoring (eg, screen time, physical activity, dietary intake, and restaurant logs) to improve adherence. -Perform medical screening (eg, vital signs, assessment tools, and laboratory tests).	Referral to dietitian; primary care office	dietitian practitioner with additional training, including assessment techniques, motivational interviewing/behavioral counseling (may need to provide specific information with environmental change and reward examples), parenting skills and managing family conflict, food planning (including energy density and macronutrient knowledge), physical activity counseling, and resources/referrals.	-Monthly visits should be tailored to patient and family, based on family's readiness to change. -Advance to more-intensive level of intervention depending on responses to treatment, age, health risks, and motivation.	
	Stage 3. Comprehensive multidisciplinary intervention	-Distinguished from stage 2 by more-frequent patient/provider contact, more-active use of behavioral strategies, more-formal monitoring, and feedback regarding progress to improve adherence. -Multidisciplinary approach is essential.	Primary care office can coordinate multidisciplinary care; weight management program (community), pediatric weight management center	Multidisciplinary team with expertise in childhood obesity, including behavioral counselor (eg, social worker, psychologist, trained nurse practitioner, or other mental health care provider), registered dietitian, and exercise specialist.	Frequent follow-up visits (weekly for a minimum of 8–12 wk is most efficacious) and then monthly follow-up visits. If not feasible, then telephone or other modalities could be used, with weight check month in local health care providers no less	



		-Components of multidisciplinary behavioral weight control programs Include: (1) moderate/strong parental involvement for children 12 y of age; parental involvement should decrease gradually as adolescents increase in age. (2) assessment of diet, physical activity, and weight(body fat) before treatment and at specified intervals thereafter to evaluate progress. (3) structured behavioural program that includes at least food monitoring, short-term diet and activity goal setting, and contingency management. (4) parent/caregiver training to improve home food and activity environments. (5) structured dietary and physical activity interventions that improve dietary quality and result in negative energy balance.	nutrition, exercise, and behavioral counseling provided by trained professionals; and weight loss goals of 2 lb/wk.	Alternative could be dietitian and behavioral counselor based in primary care office, along with outside, structured, physical activity program (eg, team sports, YMCA, or Boys and Girls Club program). For areas without services, consider innovative programs (eg, telemedicine).	than once per office (eg, primary care provider or health department). -Advance to more intensive level of intervention depending on responses to treatment, age, health risks, and motivation.	
	Stage 4. Tertiary care intervention	Continued diet and activity counseling plus consideration of meal replacement, very-low-energy diet, medication,	Pediatric weight management center operating under established protocols (eg, clinical or	Multidisciplinary team with expertise in childhood obesity, including behavioural counsellor (eg, social worker, psychologist,	According to protocol	

	and surgery.	research) to assess and to monitor risks and outcomes; settings (camps or boarding facilities with residential appropriate medical supervision)..	trained nurse practitioner, or other mental health care provider), registered dietitian, and exercise specialist. For areas without services, consider innovative programs (eg, telemedicine).	
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Weight loss targets according to age and BMI percentile

BMI Percentile	Age of 2–5 y	Age of 6–11 y	Age of 12–18 y
5th–85th (normal)	Prevention stage	Prevention stage	Prevention stage
85th–94th (overweight) a	Start at Prevention Plus stage. Advance to structured weight management stage after 3–6 mo if increasing BMI percentile and persistent medical condition or parental obesity. Weight goal is weight maintenance until BMI of <85th percentile or slowing of weight gain, as indicated by downward deflection in BMI curve.	Start at Prevention Plus stage. Advance to structured weight management stage after 3–6 mo if increasing BMI percentile or persistent medical condition Weight goal is weight maintenance until BMI of <85th percentile or slowing of weight gain, as indicated by downward deflection in BMI curve.	Start at Prevention Plus stage. Advance to structured weight management stage after 3–6 mo if increasing BMI percentile or persistent medical condition. Weight goal is weight maintenance until BMI of <85th percentile or slowing of weight gain, as indicated by downward deflection in BMI curve.
95th–98th	Start at Prevention Plus stage. Advance to structured weight	Start at Prevention Plus stage. Advance to structured weight management stage depending on	Start at Prevention Plus or structured weight loss stage depending on

	management stage after 3–6 mo if not showing improvement. <u>Weight goal</u> is weight maintenance until BMI of <85th percentile; however, if weight loss occurs with healthy, adequate-energy diet, it should not exceed 1 lb/mo (0.5) kg. If greater loss is noted, monitor patient for causes of excessive weight loss.b	responses to treatment, age, degree of obesity, health risks, and motivation. Advance from structured weight management stage to comprehensive multidisciplinary intervention stage after 3–6 mo if not showing improvement. <u>Weight goal</u> is weight maintenance until BMI of <85th percentile or gradual weight loss of ~1 lb/mo (0.5)kg. If greater loss is noted, monitor patient for causes of excessive weight loss.	age, degree of obesity, health risks, and motivation. Advance to more- intensive level of intervention depending on responses to treatment, age, health risks, and motivation. <u>Weight goal</u> is weight loss until BMI of <85th percentile, with no more than average of 2 lb/wk (1 kg/wk). If greater loss is noted, monitor patient for causes of excessive weight loss.	
§99th	Start at Prevention Plus stage. Advance to structured weight management stage after 3–6 mo if not showing improvement. Advance from structured weight management stage to comprehensive multidisciplinary intervention stage after 3–6 mo if not showing improvement and comorbidity or family history indicates. <u>Weight goal</u> is gradual weight loss, not to exceed 1 lb/mo (0.5)kg. If	Start at Prevention Plus stage. Advance to structured weight management stage depending on responses to treatment, age, degree of obesity, health risks, and motivation. Advance from structured weight management stage to comprehensive multidisciplinary intervention stage after 3–6 mo if not showing improvement. After 3–6 mo with comorbidity present and patient not showing improvement, it may be appropriate for patient to receive evaluation in tertiary care center. <u>Weight goal</u> is weight loss not to exceed average of 2 lb/wk (1 kg/wk). If greater loss is noted, monitor patient for causes of excessive weight	Start at stage 1, 2, or 3 of treatment depending on age, degree of obesity, health risks, and motivation. Advance to more- intensive levels of intervention depending on responses to treatment, age, health risks, and motivation of patient and family. Advance from comprehensive multidisciplinary intervention stage to tertiary care stage after 3–6 mo with comorbidity present and	



		greater loss occurs, monitor patient for causes of excessive weight loss.b	loss.b	patient not showing improvement. Patients may warrant tertiary care evaluation to determine next level of treatment. <u>Weight goal</u> is weight loss not to exceed average of 2 lb/wk (1 kg/wk). If greater loss is noted, monitor patient for causes of excessive weight loss.b	
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- In most circumstances, the general goal for all ages is for BMI to deflect downward until it is <85th percentile. Although long-term BMI monitoring is ideal, short-term (<3-month) weight changes may be easier to measure. Resolution of comorbidities is also a goal.
- a Children in this BMI category whose BMI has tracked in the same percentile over time and who have no medical risks may have a low risk for excess body fat. Clinicians can continue obesity prevention strategies and not advance treatment stages.
- b Because Youth Risk Behavior Surveillance Survey responses indicated that 15% of teens practice some unhealthy eating behaviors, all teens should be evaluated for these symptoms.
- Providers should be especially concerned if weight loss is >2 lb/week in this age group and should evaluate patients for excessive energy restrictions by the parent or child/teen or unhealthy forms of weight loss (meal skipping, purging, fasting, excessive exercise, and/or use of laxatives, diet pills, or weight loss supplements).
- This is the equation used by the WHO in their technical report series.[2] The equation that is recommended to estimate BMR by the US Academy of Nutrition and Dietetics is the Mifflin-St. Jeor equation.[3]

The equations for estimating BMR in kJ/day (kilojoules per day) from body mass (kg) are:[4]

Men:-

Key:

W = Body weight in kilograms

SEE = Standard error of estimation

The raw figure obtained by the equation should be adjusted up or downwards, within the confidence limit suggested by the quoted estimation errors, and according to the following principles:



Age	Equation (kJ/day)	SEE
< 3	$249 \times W - 127$	292
3–10	$95 \times W + 2110$	280
10–18	$74 \times W + 2754$	441
18–30	$63 \times W + 2896$	641
30–60	$48 \times W + 3653$	700
> 60	$49 \times W + 2459$	686

Women:-

Age	Equation (kJ/day)	SEE
< 3	$244 \times W - 130$	246
3–10	$85 \times W + 2033$	292
10–18	$56 \times W + 2898$	466
18–30	$62 \times W + 2036$	497
30–60	$34 \times W + 3538$	465
> 60	$38 \times W + 2755$	451

The equations for estimating BMR in kcal/day (kilocalories per day) from body mass (kg) are:

Men :

Age	Equation (kcal/day)	SEE
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Key:

W = Body weight in kilograms

SEE = Standard error of estimation

The raw figure obtained by the equation should be adjusted up or downwards, within the confidence limit suggested by the quoted estimation errors, and according to the following principles:

Subjects leaner and more muscular than usual require more energy than the average.

Obese subjects require less. Patients at the young end of the age range for a given equation require more energy. Patients at the high end of the age range for a given equation require less energy.



< 3	$58.317 \times W - 31.1$	59
3–10	$20.315 \times W + 485.9$	70
10–18	$13.384 \times W + 692.6$	111
18–30	$14.818 \times W + 486.6$	119
30–60	$8.126 \times W + 845.6$	111
> 60	$9.082 \times W + 658.5$	108

Women :

Age	Equation (kcal/day)	SEE
< 3	$59.512 \times W - 30.4$	70
3–10	$22.706 \times W + 504.3$	67
10–18	$17.686 \times W + 658.2$	105
18–30	$15.057 \times W + 692.2$	153
30–60	$11.472 \times W + 873.1$	167
> 60	$11.711 \times W + 587.7$	164

This eating pattern supports a child's normal growth and development. It provides enough total energy and meets or exceeds the recommended daily allowances for all nutrients for children and adolescents, including iron and calcium.

Age 0 to One Year

- Calories per day is 900
 - Fat per day is 30% to 40%



- Milk/Dairy per day is 2 cups
- Lean Meats and Beans per day is 1.5 ounces
- Fruits per day – 1 cup
- Vegetables per day is 3/4 cup
- Grains per day is 2 ounce

➤ Ages 2 to 3:

- Calories per day is 1,000
- Fat per day is 30% to 35%
- Milk/Dairy per day is 2 cups
- Lean Meats and Beans per day is 2 ounces
- Fruits per day is 1 cup
- Vegetables per day is 1 cup
- Grains per day is 3 ounces

➤ Ages 4 to 8:

- Calories per day is 1200 for females, 1400 for males
- Fat per day is 25% to 35%
- Milk/Dairy per day is 2 cups
- Lean Meats and Beans per day is 3 ounces for females, 4 ounces for males
- Fruits per day is 1.5 cups
- Vegetables per day is 1 cup for females, 1.5 cups for males
- Grains per day is 4 ounces for females, 5 ounces cups for males

➤ Ages 9 to 13:

- Calories per day is 1600 for females, 1800 for males
- Fat per day is 25% to 35%
- Milk/Dairy per day is 3 cups
- Lean Meats and Beans per day is 5 ounces
- Fruits per day is 1.5 cups
- Vegetables per day is 2 cups for females, 2.5 cups for males
- Grains per day is 5 ounces for females, 6 ounces for males

➤ Ages 14 to 18:

- Calories per day is 1800 for females, 2000 for males
- Fat per day is 25% to 35%
- Milk/Dairy per day is 3 cups
- Lean Meats and Beans per day is 5 ounces for females, 6 ounces for males
- Fruits per day is 1.5 cups for females, 2 cups for males
- Vegetables per day is 2.5 cups for females, 3 cups for males
- Grains per day is 6 ounces for females, 7 ounces for males

Dietary Recommendations for Children Ages 1 to 3

	1 year	2 to 3 years	
Calories kilocalories per day (kcal/d)	900 kcal/d	1000 kcal/d	Calorie estimates are based on a sedentary lifestyle. Increased physical activity will require additional calories: by 0-200 kcal/d if moderately physically active; and by 200–400 kcal/d if very physically active.
Fat	30-40%	30-35%	



Milk / Dairy	2 cups	2 cups	Milk listed is fat -free (except for children under the age of 2 years). If 1%, 2%, or whole-fat milk is substituted, this will utilize, for each cup, 19, 39, or 63 kilocalorie of discretionary calories and add 2.6, 5.1, or 9.0 grams of total fat, of which 1.3, 2.6, or 4.6 grams are saturated fat. For 1-year-old children, calculations are based on 2% fat milk. If 2 cups of whole milk are substituted, 48 kilocalories of discretionary calories will be utilized. The American Academy of Pediatrics recommends that low fat or reduced fat milk not be started before 2 years of age.
Lean Meat and Beans	1.5 ounces	2 ounces	
Fruits	1 cup	1 cup	Serving sizes are 1/4 cup for 1 year of age, 1/3 cup for 2 to 3 years of age, and 1/2 cup for children 4 years of age and older.
Vegetables	3/4 cup	1 cup	Serving sizes are 1/4 cup for 1 year of age, 1/3 cup for 2 to 3 years of age, and 1/2 cup for children 4 years of age and older. A variety of vegetables should be selected from each subgroup over the week.
Grains	2 ounces	3 ounces	Half of all grains should be whole.

Dietary Recommendations for Children Ages 4 to 18

	4 to 8 years	9 to 13 years	14 to 18 years	
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Calories kilocalories per day (kcal/d)				Calorie estimates are based on a sedentary lifestyle. Increased physical activity will require additional calories: by 0-200 kilocalories per day if moderately physically active; and by 200–400 kilocalories per day if very physically active. For youth 2 years and older; adopted from Table 2, Table 3, and Appendix A-2 of the Dietary Guidelines for Americans (2005); http://www.healthierus.gov/dietaryguidelines. Nutrient and energy contributions from each group are calculated according to the nutrient-dense forms of food in each group (eg, lean meats and fat-free milk).
Female	1200 kcal/d	1600 kcal/d	1800 kcal/d	
Male	1400 kcal/d	1800 kcal/d	2200 kcal/d	
Fat	25% to 35%	25% to 35%	25% to 35%	
Milk / Dairy	2 cups	3 cups	3 cups	Milk listed is fat free (except for children under the age of 2 years). If 1%, 2%, or whole fat milk is substituted, this will utilize, for each cup, 19, 39, or 63 kilocalories per day of discretionary calories and add 2.6, 5.1, or 9.0 grams of total fat, of which 1.3, 2.6, or 4.6 grams are saturated fat.
Lean Meat / Beans				
Female	3 ounces	5 ounces	5 ounces	
Male	4 ounces	5 ounces	6 ounces	
Fruits				Serving size is 1/2 cup for children 4 years of age and older.
Female	1.5 cups	1.5 cups	1.5 cups	
Male	1.5 cups	1.5 cups	2 cups	
Vegetables				Serving size is 1/2 cup for children 4 years of age and older. A variety of vegetables should be selected from each subgroup over the week.
Female	1 cup	2 cups	2.5 cups	
Male	1.5 cups	2.5 cups	3 cups	
Grains				Half of all grains should be whole.
Female	4 ounces	5 ounces	6 ounces	
Male	5 ounces	6 ounces	7 ounces	

COMMUNICATION TECHNIQUES

Determining a patient's readiness for change is essential for success.

Discussing changes when a patient is not ready often leads to resistance, and frustration.

three levels of communication that are tailored to address the focus of the communication needed to a healthy weight.

- Who do you communicate with:

Communicate With	
2 - 5 Years Old	• Communicate with Parent • Child in Room
6 - 12 Years Old	• Communicate with parent or both • The first encounter, consider taking parent to your office to discuss in private first.
Over 12 Years Old	• Communicate with teen or both • The first encounter, consider having parent leave room first

There are three levels of communication that are tailored to address the focus of the communication needed with the patient based on the diagnosis related to a healthy weight:

Type of Advice	Appointment Type	Time Commitment	Who
Lifestyle advice	• Well child visit • Urgent visit	< 1 minute	Children not currently overweight
Brief focused advice	• Well child visit	< 3 minutes	Children who are at risk for overweight
Brief negotiation and cognitive behavioural skills	• Follow-up visit • Weight management • Intervention	> 10 minutes: Single or multiple sessions	Children who are overweight or obese

Type of Advice :-

“A”
Lifestyle Advice

“B”
Brief Focused
Advice

“C”
Brief
negotiation

“D”
cognitive
behavioural
skills



To stay healthy and energized:
-Get up and play hard, 30-60 minutes a day
-Limit TV and video games to 60 minutes or less a day
-Make half your plate fruit and vegetables
-Limit sodas and juice drinks to 1 cup or less a day.

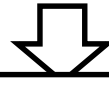


Step # 1: Engage the Patient / Parent
Step # 2: Share Information (optional)
Step # 3: Make a Key Advice
Step # 4: Arrange for Follow-up



Particularly Effective for Thoughtful / Unsure Patients:

- Asking open-ended questions
- Listening
- Summarizing
- Clinician Style: empathetic, accepting, collaborative



For Patients Ready and Willing to Make Changes:

- Develop awareness of eating habits, activity and parenting behavior.
- Identification of problem behaviors.
- Problem-solving and modification of problem behaviors.
- Weekly goal-setting for children and parents on dietary, activity and self-esteem/parenting goals
- Positive reward systems
- Record-keeping
- Weight checks

➤ Assess Readiness



“On a scale from 0 to 10 how ready are you to consider (option chosen above)?”

0 1 2 3 4 5 6 7 8 9 10

- ✚ Straight question: “Why a 5?”
- ✚ Backward question: “Why a 5 and not a 3?”
- ✚ Forward question: “What would it take to move you from a

Stage of Readiness	Key Questions
Not Ready: 0 – 3 ▪ Raise Awareness ▪ Elicit Change Talk ▪ Advise and Encourage	▪ Would you be interested in knowing more about reaching a healthy weight? ▪ How can I help? ▪ What might need to be different for you to consider a change in the future?
Unsure: 4 – 6 ▪ Evaluate Ambivalence ▪ Elicit Change Talk ▪ Build Readiness	▪ Where does that leave you now? ▪ What do you see as your next steps? ▪ What are you thinking / feeling at this point? ▪ Where does _____ fit into your future?
Ready: 7 – 10 ▪ Strengthen Commitment ▪ Elicit Change Talk ▪ Facilitate Action Planning	▪ Why is this important to you now? ▪ What are your ideas for making this work? ▪ What might get in the way? How might you work around the barriers? ▪ How might you reward yourself along the way?

3. Other Healthcare provider Role

3.1 Nurses:

Identify pediatric patients and assess nutritional Risk score by performing Nutritional screening and refer the patients with Iron deficiency Anemia.

3.2 Physicians:

Identify the pediatric patients at risk for Iron deficiency Anemia and place referral for diet consultation and indicating the reason for referral.

3.3 Pharmacist:

Monitors for drugs allergy, side effects and interactions.

3.4 Sociologist /psychologist

Counseling for psychosocial problems for the children and caretakers referred by the doctors and dietitians.

4 .Participant Role

Follow dietary advices

Take prescribed drugs regularly

5 .Patient Reassessment Criteria

As per patient needs and doctors referral

6. Definitions:

Nutrition Care Process (NCP) is a systematic approach to providing high quality nutrition care. The NCP consists of four distinct, interrelated steps:

1. Nutrition Assessment
2. Nutrition Diagnosis
3. Nutrition Intervention
4. Nutrition Monitoring and Evaluation

1 Nutrition Assessment

The Dietitian collects and documents information such as food or nutrition-related history; biochemical data, medical tests and procedures; anthropometric measurements, nutrition-focused physical findings and client history. Usual types of data gathered for the nutrition assessment include food and nutrition-related history, anthropometric measurements, biochemical data, medical tests and procedures, nutrition-focused physical examination findings and inpatient or outpatient history. Other sources include, but not limited to, the following

2 . Nutrition Diagnosis

Data collected during the nutrition assessment guides the Dietitian in selection of the appropriate nutrition diagnosis (i.e., naming the specific problem). To diagnose a nutritional problem, the Dietitian organizes the assessment data, clusters nutrition signs and symptoms, and compares them with the defining characteristics of suspected nutrition diagnoses. The nutrition diagnosis is then expressed using standardized nutrition diagnostic terms and the etiologies,

signs, and symptoms describing each potential diagnosis. There are three distinct parts to a nutrition diagnostic statement, also called a PES Statement .

(A) P: Problem

The nutrition diagnosis describes alterations in the status of the patient. A diagnostic label may be accompanied by a descriptor such as “altered,” “excessive,” or “inadequate”.

(B) E: Etiology

Etiology contributes to the existence or maintenance of pathophysiological, psychosocial, situational, developmental, cultural or environmental problems. Major and minor etiologist may result from medical, genetic or environmental factors. The etiology is preceded by the words “related to”. Identifying the etiology will lead to the selection of a nutrition intervention aimed at resolving the underlying cause of the nutrition problem, whenever possible.

(C) S: Signs and symptoms

The defining characteristics are typical clusters of signs and symptoms that provide evidence that a nutrition diagnosis exists. Signs are the observations of a trained clinician. Symptoms are changes reported by the patient. In the PES statement, the signs and symptoms are preceded by the words “as evidenced by”.

A well-written nutrition diagnostic statement should have the following characteristics: clear and concise,

specific to a patient, limited to a single patient problem, accurately related to one etiology, based on signs and symptoms from the assessment data, and measurable.

3. Nutrition Intervention

The Dietitian then selects the nutrition intervention that will be directed to the root cause (or etiology) of the nutrition problem and aimed at alleviating the signs and symptoms of the diagnosis. This step involves purposefully planned action(s) designed with the intent of changing a nutrition-related behavior, risk factor, environmental condition or aspect of health status

Sources of data and tools for nutrition intervention include, but are not limited to, the following:

- (1.1) Evidence-Based Nutrition Practice Guidelines or guidelines from other professional organizations
- (1.2) Evidence Analysis Library or other secondary evidence sources
- (1.3) Current research literature
- (1.4) Results of outcome-management studies or quality improvement projects

Nutrition intervention consists of two interrelated processes, planning and implementing described as follows:

(1) Planning

The planning phase includes formulating and determining a plan of action. In this step, the Dietitian may identify nutrition diagnoses for immediate treatment and nutrition diagnoses for which treatment should be delayed until a more favorable environment is available or more resources exist. The Dietitian makes nutrition recommendations based on the inpatient or outpatient individualized recommended dietary intake of energy and/or selected foods or nutrients based on current reference standards and dietary guidelines; health condition and nutrition diagnosis. The Dietitian collaborates with the patient throughout the planning step, defining an intervention plan and strategies (time and frequency of care, duration and follow-up) that are focused on the etiology of the problem and are known to be effective based on the best current knowledge and evidence.

(2.) Implementation

The implementation phase is considered the action phase of the NCP.

During implementation, the Dietitian is responsible for collaborating with the patient and other caregivers to carry out the nutrition plan of care, communicating and modifying the nutrition care plan as needed, ensuring and verifying the plan of care is being implemented

The Dietitian uses critical thinking skills to set goals and prioritize them, to define the nutrition prescription or basic plan of care, to make interdisciplinary connections, and to match intervention strategies with the patient's need, preferences, values, and nutrition diagnoses. The Dietitian supervises and revises strategies based on changes in condition or response to intervention goals.

6.7 Nutrition Monitoring and Evaluation

The final step of the process is monitoring and evaluation, which the Dietitian uses to determine if the patient has achieved, or is making progress toward the planned goals. Data sources and tools to measure the outcomes for nutrition monitoring and evaluation include, but are not limited to, the following:

(1.1) Self-monitoring data or data from other records, including but not limited to forms, spreadsheets, and computer programs

(1.2) Anthropometric measurements, biochemical data, medical tests, and procedures

(1.3) Nutrition-related history, including food and nutrient intake

(1.4) Nutrition-related physical signs and/or symptoms

(1.5) Patient surveys, pre-tests, post-tests, and/or questionnaires; and

(1.6) Mail or telephone follow-up

(8) There are three distinct and interrelated processes to the monitoring and evaluation step of the NCP.

(8.1) Monitoring progress

It includes checking the understanding and compliance of patient with the nutrition plan of care, determining if the intervention is being implemented as prescribed, providing evidence that the plan or intervention strategy is or is not changing behavior or status of the patient, identifying other positive or negative outcomes, gathering information, indicating reasons for lack of progress, and supporting conclusions with evidence.

(8.2) Measuring outcomes

The Dietitian determines outcome indicators that are relevant to the nutrition diagnosis or signs or symptoms, nutrition goals, medical diagnosis, and outcomes and quality management goals. Nutrition outcomes and progress toward resolution of the nutrition diagnosis should be included within the Dietitian's follow-up documentation with one of the following descriptors:

- Resolved (nutrition problem no longer exists)
- Improvement shown (nutrition problem still exists)
- Unresolved (no improvement shown), or
- No longer appropriate (change in condition)
- Evaluating outcomes

Evaluating outcomes encompasses comparing current findings with previous status, intervention goals, and/or reference standards.

Water Recommended intakes for children from birth – 18 years old

Total water L / d	
Life stage group	
Infant	
0-6 months	0.7(from mother milk or formula)
7- 12 month	0.8
Children	
1-3 y	1.3
4-8 y	1.7
Males	
9 -14	2.3
14 -18	2.3

Table from ADA pocket guide to Pediatric Nutrition Assessment

National Sleep Foundation's Sleep Duration Recommendations :

Age	Recommended	May be appropriate	Not recommended
Newborns	14 to 17 hours	11 to 13 hours	Less than 11 hours

0-3 months		18 to 19 hours	More than 19 hours
Infants	12 to 15 hours	10 to 11 hours	Less than 10 hours
4-11 months		16 to 18 hours	More than 18 hours
Toddlers	11 to 14 hours	9 to 10 hours	Less than 9 hours
1-2 years		15 to 16 hours	More than 16 hours
Pre-schoolers	10 to 13 hours	8 to 9 hours	Less than 8 hours
3-5 years		14 hours	More than 14 hours
School-aged Children	9 to 11 hours	7 to 8 hours	Less than 7 hours
6-13 years		12 hours	More than 12 hours
Teenagers	8 to 10 hours	7 hours	Less than 7 hours
14-17 years		11 hours	More than 11 hours
Young Adults	7 to 9 hours	6 hours	Less than 6 hours
18-25 years		10 to 11 hours	More than 11 hours
Adults	7 to 9 hours	6 hours	Less than 6 hours
26-64 years		10 hours	More than 10 hours
Older Adults	7 to 8 hours	5 to 6 hours	Less than 5 hours
≥ 65 years		9 hours	More than 9 hours

The recommendations are the result of multiple rounds of consensus voting after a comprehensive review of published scientific studies on sleep and health. The expert panel included six sleep experts and experts from the following stakeholder organizations:

- American Association of Anatomists - American Academy of Pediatrics
- American College of Chest Physicians - American Geriatrics Society
- American Neurological Association - American Physiological Society

- American Psychiatric Association
- American Thoracic Society
- Gerontological Society of America
- Human Anatomy and Physiology Society
- Society for Research in Human Development
- American Congress of Obstetricians and Gynecologists

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Physical activity :

The AHA's Recommendations for Physical Activity in Children



The American Heart Association Recommendations for Physical Activity in Kids

At least 60 minutes of moderate- to vigorous-intensity aerobic activity **Every day**



© 2016 Learn more at heart.org/KidsActivityRecommendations.

Physical inactivity is a major risk factor for developing coronary artery disease. It also increases the risk of stroke and such other major cardiovascular risk factors as obesity, high blood pressure, low HDL ("good") cholesterol and diabetes. The American Heart Association recommends that children and adolescents participate in at least 60 minutes of moderate to vigorous physical activity every day.

Just like in adults, increased physical activity has been associated with an increased life expectancy and decreased risk of cardiovascular disease. Physical activity produces overall physical, psychological and social benefits.

Inactive children are likely to become inactive adults.

Physical activity helps with:

- controlling weight
- reducing blood pressure
- raising HDL ("good") cholesterol
- reducing the risk of diabetes and some kinds of cancer
- improved psychological well-being, including gaining more self-confidence and higher self-esteem

Physical activity should be increased by reducing sedentary time (e.g., watching television, playing computer video games or talking on the phone).

Physical activity should be fun for children and adolescents.

Parents should try to be role models for active lifestyles and provide children with opportunities for increased physical activity.

All children, even less-coordinated ones, need to be physically active. Activity may be particularly helpful for the physical and psychological well-being of children with a weight problem.

AHA Recommendation

All children age 2 and older should:

Participate in at least 60 minutes of enjoyable, moderate-intensity physical activities every day that are developmentally

appropriate and varied.

If your child or children don't have a full 60-minute activity break each day, try to provide at least two 30-minute periods or four 15-minute periods in which they can engage in vigorous activities appropriate to their age, gender and stage of physical and emotional development.

http://www.heart.org/HEARTORG/HealthyLiving/HealthyKids/ActivitiesforKids/The-AHAs-Recommendations-for-Physical-Activity-in-Children_UCM_304053_Article.jsp#.WbjKnfMjGpo

Youth Physical Activity Guidelines

Children and adolescents should accumulate a minimum of 60 minutes of physical activity daily as part of transportation, physical education, sport, free play and planned exercise. The activities should be a combination of moderate and vigorous intensity. Moderate intensity is defined as activity that increases breathing, sweating, and heart rate and vigorous intensity substantially increases breathing, sweating, and heart rate

Types of Physical Activity

Activities for youth should be developmentally appropriate, offer variety, and be enjoyable. Examples of activities that may be classified as aerobic include bicycle riding, walking, running, games, dancing, soccer, and swimming.

Note that there is little need for healthy children and adolescents to monitor their heart rate during the activity period.

Children and adolescents should also participate in activities that promote muscle strength on two or three days per week. Examples of activities for young children include climbing, jumping, tumbling and gymnastics, and a variety of games. Older children and adolescents can participate in supervised strength training programs provided the focus is on developing proper exercise technique. Good form and mechanics should be stressed. Examples of appropriate activities include body weight calisthenics (i.e. push-ups, pull-ups) and strength exercises with dumbbells, medicine balls and elastic bands

Traditional games and fitness activities that require participants to run fast, jump high, change direction or maintain balance can develop and reinforce needed movement skills. Jumping rope, animal races, obstacle courses, scavenger hunts and hopscotch can get youth moving in fun activities.

Sedentary inactivity is a strong contributor to overweight and lack of physical fitness. Sedentary activities such as television viewing, computer and telephone use, and inactive video games should be discouraged and limited to < 2 hours per day.

Special Considerations for Children and Adolescents

- Youth are not simply miniature adults and have specific needs regarding physical activity. Their body systems are growing and developing. Adult exercise and conditioning programs are not appropriate for youth. High stress or continuous repetitive movements should be completed with caution, as this kind of exercise has a potential for injury.
- Provide youth with positive feedback and encourage an active lifestyle.
- Children and youth should be exposed to and encouraged to participate in a variety of physical activities, games and sports.
- Youth should learn the proper skills and exercise techniques from a qualified professional in order to prevent injury.
- Youth have immature thermoregulatory systems and care should be given to make sure they are properly hydrated and exercise in comfortable environments.
- Youth who cannot accumulate at least 60 minutes of physical activity per day should over time gradually increase their frequency and duration of activity until they can reach this activity goal.
- Youth with diseases or disabilities should have their activity program tailored to their specific needs.
- Nutritional requirements vary during the growing years and should be adequate for normal growth and maturation and match the energy and nutritional requirements associated with physical activity.

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<https://www.acsm.org/docs/default-source/brochures/physical-activity-in-children-and-adolescents.pdf>

15. Revision History

New Policy	Edition Date:
Remarks (if any)	

Revised Policy	Date of Revision:
Date of 1st Edition:	Revision Number:

Policy and Procedure Status	Change	Reference Section

16. Performance Indicator: Numbers of obese and overweight children been counselled in primary health care and hospitals after doctor referral.

17. Search words:



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[adolescents.pdf](#)

- 9- https://ihcw.aap.org/Documents/Assessment%20%20and%20Management%20of%20Childhood%20Obesity%20Algorithm_FINAL.pdf

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