Complete Summary

GUIDELINE TITLE

Dietary recommendations for children and adolescents: a guideline for practitioners: consensus statement from the American Heart Association.

BIBLIOGRAPHIC SOURCE(S)

Gidding SS, Dennison BA, Birch LL, Daniels SR, Gilman MW, Lichtenstein AH, Rattay KT, Steinberger J, Stettler N, Van Horn L. Dietary recommendations for children and adolescents: a guide for practitioners: consensus statement from the American Heart Association. Circulation 2005 Sep 27;112(13):2061-75. [177 references] PubMed

GUIDELINE STATUS

This is the current release of the guideline.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

- Atherosclerotic heart disease
- Cardiovascular disease and risk factors including dyslipidemia, hypertension, diabetes mellitus, physical inactivity, and obesity

GUIDELINE CATEGORY

Counseling
Prevention

CLINICAL SPECIALTY

Cardiology
Family Practice
Nutrition
Pediatrics
Preventive Medicine

INTENDED USERS

Dietitians
Health Care Providers
Physicians
Public Health Departments

GUIDELINE OBJECTIVE(S)

- To provide dietary and physical activity recommendations for healthy children
- To discuss the current content of children's diets
- To review the adverse health consequences of increased intakes of calories (relative to energy expenditure), saturated and *trans* fat, and cholesterol
- To provide age-specific guidelines for implementation of the recommended diet, including the period from before birth to 2 years of age

TARGET POPULATION

Infants, children, and adolescents, with emphasis on the following age groups:

- Birth to 2 years
- Age 2 to 6 years
- Ages 6 years and above

INTERVENTIONS AND PRACTICES CONSIDERED

1. Promotion of cardiovascular health among children and adolescents with regard to diet composition, total calorie intake, and physical activity
2. Interventions to improve implementation of diet and physical activity recommendations for specific age groups
3. Public health strategies for improving children's diets

MAJOR OUTCOMES CONSIDERED

- Risk of developing cardiovascular disease
- Low-density lipoprotein (LDL) cholesterol levels
- Blood pressure
- Rates of obesity-related comorbidities

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review
Review of Published Meta-Analyses

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Expert peer review of the American Heart Association (AHA) Scientific Statements is conducted at the AHA National Center. For more on AHA statements and guidelines development, visit http://www.americanheart.org/presenter.jhtml?identifier=3023366.

This statement was approved by the American Heart Association Science Advisory and Coordinating Committee on July 22, 2005.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Dietary Recommendations

The general dietary recommendations of the American Heart Association (AHA) for those aged 2 years and older stress a diet that primarily relies on fruits and vegetables, whole grains, low-fat and nonfat dairy products, beans, fish, and lean meat. These general recommendations echo other recent public health dietary guidelines in emphasizing low intakes of saturated and *trans* fat, cholesterol, and added sugar and salt; energy intake and physical activity appropriate for the maintenance of a normal weight for height; and adequate intake of micronutrients. The tables below titled "AHA Pediatric Dietary Strategies for Individuals Aged >2 Years: Recommendations to All Patients and Families" and "Tips for Parents to Implement AHA Pediatric Dietary Guidelines" provide strategies for implementing healthy cardiovascular nutrition. The recently published *Dietary Guidelines for Americans* (for those 2 years of age and older) and American Academy of Pediatrics Nutrition Handbook provide important supporting reference information with regard to overall diet composition, appropriate caloric intakes at different ages, macronutrients, micronutrients, portion size, and food choices. Table 3 of the original guideline document provides daily estimated calorie and serving recommendations for grains, fruits, vegetables, and milk/dairy products by age and gender. Consistent with the *Dietary Guidelines for Americans*, 2005, nutrient and energy contributions from each food group are calculated according to the nutrient-dense forms of foods in each group (e.g., lean meats and fat-free milk), with the exception of the guidelines for 1-year-old children, which included 2% fat milk. For youth 3 years of age and older, calorie estimates are based on a sedentary lifestyle. More physically active children and adolescents will require additional calories. This table is provided as a starting point for dietary counseling; recommendations will need to be individualized in clinical practice. Table 4 of the original guideline document provides daily recommended intakes of sodium, potassium, and fiber. More complete guidelines for infants, particularly with regard to the transition from breast/formula-feeding to table foods, will be discussed below.

AHA Pediatric Dietary Strategies for Individuals Aged >2 Years: Recommendations to All Patients and Families
• Balance dietary calories with physical activity to maintain normal growth. • 60 minutes of moderate to vigorous play or physical activity daily • Eat vegetables and fruits daily; limit juice intake. • Use vegetable oils and soft margarines low in saturated fat and *trans* fatty acids instead of butter or most other animal fats in the diet.

AHA Pediatric Dietary Strategies for Individuals Aged >2 Years: Recommendations to All Patients and Families
• Eat whole grain breads and cereals rather than refined grain products. • Reduce the intake of sugar-sweetened beverages and foods. • Use nonfat (skim) or low-fat milk and dairy products daily. • Eat more fish, especially oily fish, broiled or baked. • Reduce salt intake, including salt from processed foods.

Tips for Parents to Implement AHA Pediatric Dietary Guidelines
• Reduce added sugars, including sugar-sweetened drinks and juices. • Use canola, soybean, corn oil, safflower oil, or other unsaturated oils in place of solid fats during foot preparation. • Use recommended portion sizes on food labels when preparing and serving food. • Use fresh, frozen, and canned vegetables and fruits and serve at every meal; be careful with added sauces and sugar. • Introduce and regularly serve fish as an entrée. • Remove the skin from poultry before eating. • Use only lean cuts of meat and reduced-fat meat products. • Limit high-calorie sauces such as Alfredo, cream sauces, cheese sauces, and hollandaise. • Eat whole grain breads and cereals rather than refined products; read labels and ensure that "whole grain" is the first ingredient on the food label of these products. • Eat more legumes (beans) and tofu in place of meat for some entrees. • Breads, breakfast cereals, and prepared foods, including soups, may be high in salt and/or sugar; read food labels for content and choose high-fiber, low-salt/low-sugar alternatives.

Emphases different from the past include the allowance of a more liberal intake of unsaturated fat and a focus on ensuring adequate intakes of omega-3 fatty acids. There is an emphasis on foods that are rich in nutrients and that provide increased amounts of dietary fiber. The AHA continues to recommend diets low in saturated and *trans* fats. Healthy foods include fruits, vegetables, whole grains, legumes, low-fat dairy products, fish, poultry, and lean meats. Fruits, vegetables, and fish are often inadequately consumed by children and adolescents. Because the major sources of saturated fat and cholesterol in children's diets are full-fat milk and cheese and fatty meats, use of low-fat dairy products and lean cuts of meat in appropriate portion sizes will be critical in meeting dietary needs and nutrient requirements.

Fish is an important food with growing evidence of potential benefit. However, consumers may have difficulty in distinguishing among several health messages about fish consumption. Although strong data associate cardiovascular disease prevention with increased fish consumption, there are also concerns about potential polycarbonate phenols (PCBs) and mercury contamination. The Food and Drug Administration (FDA) and AHA stress that seafood is an important part of a healthy diet and advocate consumption of a wide variety of fish and shellfish. Current FDA recommendations with regard to limiting fish intake pertain to women who may become pregnant or are already pregnant, nursing mothers, and

young children. The FDA recommends that people in those categories avoid shark, swordfish, king mackerel, and tilefish because they contain high levels of mercury. Five of the most commonly eaten varieties of fish are low in mercury (shrimp, canned light tuna, salmon, pollack, and catfish). The AHA continues to recommend 2 servings of fish weekly. Recent evidence suggests that commercially fried fish products, likely because they are relatively low in omega-3 fatty acids and high in *trans* fatty acids (if hydrogenated fat is used for preparation), do not provide the same benefits as other sources of fish.

Discretionary Calories

The obesity epidemic has prioritized consideration of the complex issue of matching appropriate energy intake to energy expenditure. One approach is the concept of discretionary calories illustrated in Figure 1 of the original guideline document. Total caloric intake is the sum of essential calories, the total energy intake necessary to meet recommended nutrient intakes, and discretionary calories, the additional calories necessary to meet energy demand and for normal growth. The figure shows essential calories and discretionary calories; these increase with age and increasing levels of physical activity. There is a large difference in the discretionary calorie allowance among sedentary, moderately active, and active children, with more physically active children needing more energy from food to maintain normal growth. For young sedentary children, the amount of total energy intake that can come from foods used purely as a source of energy, approximately 100 to 150 calories, is less than that provided by a usual portion size of most low-nutrient-dense snacks and beverages. With increasing activity, this discretionary calorie amount may increase to 200 to 500 calories, depending on the age and gender of the child and the level of physical activity. The message portrayed by Figure 1 of the original guideline document is clear: To be sedentary, have a nutritionally adequate diet, and avoid excessive caloric intake in contemporary society is difficult. The challenge to healthcare providers and public health professionals is to translate the complex science-based energy balance message from Figure 1 into effective practice and public health policy. Consuming diets that include primarily nutrient-dense forms of the foods listed in Table 3 of the original guideline document, participating in regular moderate to vigorous physical activity most days of the week for at least 1 hour per day, and limiting video screen time to less than 2 hours per day will help accomplish this goal.

Scientific Support for Current Dietary Recommendations

Refer to the original guideline document for a discussion on the scientific support for current dietary recommendations.

What Children Currently Eat

It is important to understand the gap between current dietary practices and recommended diets for infants, children, and adolescents. Sufficient population-based data exist to identify the magnitude of the problem confronting those interested in improving cardiovascular health in youth. Areas to consider include appropriateness of total caloric intake, eating patterns, balance of foods/beverages chosen from each food group, and intake of specific nutrients.

Published data evaluate each of these areas with age and gender as important associated considerations.

Refer to the original guideline document for further information on what children currently eat.

Implementation of Dietary Recommendations Including Considerations for Specific Age Groups

This section reviews age-specific pediatric research on cardiovascular and general nutrition. Although in some areas there is a reasonable body of work about which to make useful judgments, in many areas studies have significant methodological limitations: small sample size, confounding by a variety of factors (including cultural factors), and difficulty of using classic randomized trial designs to answer pertinent research questions. Nevertheless, the current dietary pattern of contemporary children mandates change. The recommendations provided herein are based on expert consensus of emerging evidence. Their purpose is to improve the nutritional quality, amount, and pattern of food consumption by children and their families. Although the narrative emphasizes nutrition to improve cardiovascular risk, it is recognized that optimal nutrition for overall health and normal growth is the preeminent goal.

Parent, Guardian, and Caregiver Responsibilities for Children's Nutrition

- Choose breastfeeding for first nutrition; try to maintain for 12 months.
- Control when food is available and when it can be eaten (nutrient quality, portion size, snacking, regular meals).
- Provide social context for eating behavior (family meals, role of food in social intercourse).
- Teach about food and nutrition at the grocery store, when cooking meals.
- Counteract inaccurate information from the media and other influences.
- Teach other care providers (e.g., daycare, babysitters) about what you want your child to eat.
- Serve as role models and lead by example; "do as I do" rather than "do as I say."
- Promote and participate in regular daily physical activity.

Refer to the original guideline document for a discussion on how family- and culture-specific dietary practices can influence the diet.

Birth to 2 Years

It is important for parents or parents-to-be to obtain a healthy weight because children whose mothers are obese early in pregnancy are more likely to be overweight as young children. A similar effect is seen in children whose parents are or become obese during their childhood. To ensure optimal growth of the fetus, pregnant women must optimize their nutrition and weight gain during pregnancy, according to the Institute of Medicine guidelines. Excessive maternal weight gain has been associated with a 2- to 3-fold increased risk that the mother will be overweight after a pregnancy. This may increase subsequent offspring risk during adolescence for obesity, impaired glucose tolerance, impaired insulin

secretion, and type 2 diabetes. Studies of maternal nutrition, for example, assessments of protein and calcium intake, suggest that maternal diet during pregnancy may influence offspring's blood pressure. However, evidence is insufficient to make specific recommendations about nutrition during pregnancy based on future cardiovascular disease.

Human milk is uniquely superior for infant feeding and is the reference against which other infant feeding strategies must be measured. Breast milk is rich in both saturated fat and cholesterol but low in sodium. There has been substantial work on the relationship of breast-feeding to both future cardiovascular events and cardiovascular risk factors. Although pooling estimates from these studies is difficult because of differences in exposure and outcome assessment, recent meta-analyses have suggested no meaningful impact of breast-feeding on subsequent cardiovascular or all-cause mortality in adulthood. Other systematic reviews, however, suggest benefits of breastfeeding, particularly in the prevention of future obesity. Several studies suggest that breastfeeding leads to lower blood pressure later in childhood. Although breastfeeding is associated with higher blood cholesterol levels at 1 year of age, it may also result in lower blood cholesterol levels in adults. Rapid weight gain during the first 4 to 6 months of life is associated with future risk of overweight; studies suggest that partially breastfed and formula-fed infants consume 20% more total calories per day than do exclusively breastfed infants. Physicians should identify infants who are gaining weight rapidly and/or whose weight-to-length percentile exceeds the 95th percentile to help correct overfeeding if present.

The period from weaning to consumption of a mature diet, from 4 to 6 months to approximately 2 years of age, represents a radical shift in pattern of food consumption (see Figure 2 of the original guideline document), but there has been very little research on the best methods to achieve optimal nutritional intakes during this transition. Infants mature from receiving all nutrition from a milk-based diet to a diet chosen from the range of adult foods, in part self-selected and in part provided by caregivers. Transition to other sources of nutrients should begin at 4 to 6 months of age to ensure sufficient micronutrients in the diet, but the best methods for accomplishing this task are essentially unknown. Current feeding practices and guidelines are influenced by small-scale studies of infant feeding behavior, idiosyncratic parental behavior, and popular opinion.

The table below titled "Improving Nutritional Quality After Weaning" provides a number of strategies to improve general and cardiovascular nutrition during this transitional stage. When normal growth is present, overfeeding may result from arbitrarily increasing amounts fed to achieve specific portion sizes per meal rather than allowing infants and toddlers to self-regulate. New healthy foods may need to be introduced repeatedly, as many as 10 times to establish taste preferences.

Improving Nutritional Quality after Weaning
• Maintain breastfeeding as the exclusive source of nutrition for the first 4 to 6 months of life. • Delay the introduction of 100% juice until at least 6 months of age and limit to no more than 4 to 6 oz/d; juice should only be fed from a cup. • Respond to satiety clues and do not overfeed; infants and young children can usually self-regulate total caloric intake; do not force children to finish meals if not hungry as they often vary caloric intake from meal to meal.

Improving Nutritional Quality after Weaning
• Introduce healthy foods and continue offering if initially refused; do not introduce foods without overall nutritional value simply to provide calories.

Age 2 to 6 Years

At this age, recommendations for diet content are similar to those for older individuals. Challenges here relate to providing quality nutrient intake and avoiding excess caloric intake. Dairy products are a major source of saturated fat and cholesterol in this age group, and therefore a transition to low-fat milk and other dairy products is important. Sweetened beverages and other sugar-containing snacks are a major source of caloric intake. The table below titled "Improving Nutrition in Young Children" provides a list of strategies for managing nutrition in young children. Parents should remember that they are responsible for choosing foods that are eaten and when and where they are eaten. The child is responsible for whether or not he or she wants to eat and how much. Two natural parental impulses, pressuring children to eat and restricting access to specific foods, are not recommended because they often lead to overeating, dislikes, and paradoxical interest in forbidden items.

Healthcare providers must provide useful advice to parents, but they are constrained by time pressures in the typical health maintenance office visit. In addition to the information in the table below, advice on caloric/energy values of food, particularly nutrient-poor foods, can be provided in a relatively short period of time. At office visits, body mass index (BMI) percentile can be plotted, the appropriateness of weight gain in the last year can be assessed from standard growth curves, and recommendations for optimal weight gain in the next year can be given. Blood pressure screening and cholesterol measurement, if indicated, are begun in this age range.

Improving Nutrition in Young Children
• Parents choose meal times, not children. • Provide a wide variety of nutrient-dense foods such as fruits and vegetables instead of high-energy-density/nutrient-poor foods such as salty snacks, ice cream, fried foods, cookies, and sweetened beverages. • Pay attention to portion size; serve portions appropriate for the child's size and age. • Use nonfat or low-fat dairy products as sources of calcium and protein. • Limit snacking during sedentary behavior or in response to boredom and particularly restrict use of sweet/sweetened beverages as snacks (e.g., juice, soda, sports drinks). • Limit sedentary behaviors with no more than 1 to 2 hours per day of video screen/television and no television sets in children's bedrooms. • Allow self-regulation of total caloric intake in the presence of normal BMI or weight for height. • Have regular family meals to promote social interaction and role model food-related behavior.

Age 6 Years and Above

Counseling of older children and adolescents must be individualized to accommodate the range of contemporary lifestyles; less success is achieved at older ages. Current dietary practices and readiness to change must be understood before family-based intervention is attempted. Parental role modeling is important in establishing children's food choices. Depending on their own food choices, parents can be either positive or negative role models.

Public Health Issues

Modern life extends the umbrella of social responsibility for provision of appropriate nutrition and nutrition knowledge beyond the home to government, the health professions, schools, the food industry, and the media. It is beyond the scope of this document to evaluate the large public health effort related to overweight and nutrition now being undertaken. Some important areas are highlighted below. Because there is little scientific information to guide current policy directed at changing eating behaviors, it is strongly recommended that evaluation, safety, and efficacy tools be incorporated into policy implementation.

Schools have become a battleground for fighting the obesity epidemic. Cafeterias are under attack for serving unhealthy food, yet the food provided is constrained by budgetary and regulatory issues largely external to public health concerns. United States Department of Agriculture (USDA) guidelines require school food programs to provide minimum quantities of specific nutrients over a 3- to 7-day span but do not address maximum food amounts. Vending machines and competing nutrient-poor foods provide excess calories but also provide revenue to support school programs. The table below titled "Strategies for Schools" summarizes some strategies currently being implemented in many locales.

Strategies for Schools
• Identify a "champion" within the school to coordinate healthy nutrition programs. • Establish a multidisciplinary team including student representation to assess all aspects of the school environment using the School Health Index (Centers for Disease Control and Prevention) or similar assessment. • Identify local, regional, and national nutrition programs; select those proven effective (http://www.ActionForHealthyKids.org). • Develop policies that promote student health and identify nutrition issues within the school (http://www.nasbe.org/HealthySchools/healthy_eating.html). • Work to make predominantly healthful foods available at school and school functions by influencing food and beverage contracts, adapt marketing techniques to influence students to make healthy choices, and restrict in-school availability of and marketing of poor food choices. • Maximize opportunities for all physical activity and fitness programs (competitive and intramural sports); utilize coaches/teachers as role models. • Lobby for regulatory changes that improve a school's ability to serve nutritious food. • Ban food advertising on school campuses.

State and local governments are now becoming active in the effort to control obesity on a wide variety of fronts. For example, several states have adopted legislation mandating school staff report to parents the BMI status of their children. Changes in food labeling, taxes on certain types of foods, restrictions on foods provided to children in government-sponsored programs, and requiring restaurants to provide nutrition information are examples of regulations under consideration. Strategy types are summarized in the table below titled "Types of Legislation under Consideration to Improve Children's Nutrition." Given the widening discrepancy between recommended dietary guidelines and current dietary intake, a reevaluation of federal agricultural policies may be warranted. Strategies for food subsidies and taxation should reflect health goals. Foods made available and served through public nutrition programs must be consistent with current recommendations.

Types of Legislation under Consideration to Improve Children's Nutrition
• Measurement of BMI by school staff for health surveillance and/or to report information to parents • Restriction of certain types of food and beverages available on school grounds • Taxation of specific foods or sedentary forms of entertainment • Establishment of local school wellness policies using a multidisciplinary team of school staff and community volunteers (mandated for schools participating in federal reimbursable school lunch, breakfast, or milk programs) • Food labeling regulations, including appropriate descriptions of portion sizes (e.g., a medium-sized sugar-containing drink should be 6 to 8 oz) • Regulation of food advertising directed at children

Therapeutic Lifestyle Changes for Treatment of Hypertension and Hypercholesterolemia

There are currently established consensus guidelines for the role of diet in the management of children with established cardiovascular risk factors. Cut points for diagnosing dyslipidemia and hypertension are provided in the table below titled "Consensus Guidelines for Diagnosis of Hypertension and Dyslipidemia in Children." The Fourth Pediatric Report of the National High Blood Pressure Education Program recommends a diet consistent with the current recommendations for children with hypertension. For overweight children, weight loss is the initial therapeutic strategy. The Dietary Approaches to Stop Hypertension (DASH) study has recently shown that implementation of a diet rich in fruits, vegetables, nonfat dairy products, and whole grains can effectively lower blood pressure in adults with hypertension. Although there are no comparable clinical trial data in children, there is no reason to suspect that the DASH diet would not be safe to implement in older children and adolescents as long as protein and calorie needs are met.

Consensus Guidelines for Diagnosis of Hypertension and Dyslipidemia in Children	
Hypertension	**Guideline**
Prehypertension	Systolic or diastolic blood pressure >90th percentile for age and gender or 120/80 mm Hg, whichever is less
Stage 1 hypertension	Systolic or diastolic blood pressure >95th percentile for

Consensus Guidelines for Diagnosis of Hypertension and Dyslipidemia in Children	
Hypertension	**Guideline**
	age and gender on 3 consecutive visits or 140/90 mm Hg, whichever is less
Stage 2 hypertension	Systolic or diastolic blood pressure >99th percentile + 5 mm Hg for age and gender or 160/110 mm Hg, whichever is less
Total cholesterol • Borderline • Abnormal	• ≥170 mg/dL • ≥200 mg/dL
Low-density lipoprotein (LDL) cholesterol • Borderline • Abnormal	• ≥100 mg/dL • ≥130 mg/dL
High-density lipoprotein (HDL) cholesterol • Abnormal	• <40 mg/dL
Triglycerides • Abnormal	• ≥200 mg/dL

There has not been an update of the Report of the Expert Panel on Blood Cholesterol Levels in Children and Adolescents published since its publication in 1992, but the National Cholesterol Education Program (NCEP) generally recommends restriction of saturated fat intake to <7% of total calories and restriction of cholesterol intake to <200 mg/d for treatment of elevated low-density lipoprotein (LDL) cholesterol levels. There are now data from randomized trials demonstrating that such diets are safe in children as young as 7 months of age. Efficacy is variable, however, and unless the diet is extremely high in saturated fat before changes are made, it is unlikely that diet alone will be sufficient to achieve target levels for LDL cholesterol in those with genetic dyslipidemias and LDL cholesterol ≥190 mg/dL. Increased intake of soluble fiber is recommended as an adjunct to the reduced intakes of saturated fatty acids and cholesterol. Recently plant sterols and stanols have been used, often in margarines, to lower LDL cholesterol through inhibition of cholesterol absorption. Adult studies have shown reductions of 4% to 11% without adverse events. One randomized controlled trial in children showed that 20 g/d of plant sterol-containing margarine lowered LDL cholesterol 8%. These products may be used, although caution is recommended with regard to the potential for decreased absorption of fat-soluble vitamins and beta-carotene. Formal recommendation of their use for children awaits clinical trial data.

Summary

This scientific statement updates nutrition recommendations for the promotion of cardiovascular health among children. Recommendations have been made with regard to diet composition, total caloric intake, and physical activity. Implementation requires that children and all other members of their households actively make the recommended changes. Adverse recent trends in children's diets have been noted. Cardiovascular nutrition issues surrounding the first 2 years of life have been addressed. Strategies to improve implementation of the recommended diet have been presented. A brief overview of public health issues related to nutrition is included.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of evidence supporting the recommendations is not specifically stated.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Good nutrition, a physically active lifestyle, and absence of tobacco use contribute to lower risk prevalence and either delay or prevent the onset of cardiovascular disease.

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

Whereas the scientific base for understanding the potential harm and benefit of current dietary practices and the relationship to risk factors is strong, the scientific base for recommended interventions is weaker for several reasons: limited number, statistical power, and scope of intervention studies; limited efficacy of attempted interventions; and lack of generalizability of studies of feeding behaviors at younger ages. Historically, most have had small sample size and have not had ethnic diversity among participants. Nonetheless, given the current obesity epidemic, sufficient natural history and prevalence data exist to justify intervention, although continued evaluation is necessary to identify optimal strategies.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

Implementation strategies are described in the "Major Recommendations" field.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Gidding SS, Dennison BA, Birch LL, Daniels SR, Gilman MW, Lichtenstein AH, Rattay KT, Steinberger J, Stettler N, Van Horn L. Dietary recommendations for children and adolescents: a guide for practitioners: consensus statement from the American Heart Association. Circulation 2005 Sep 27;112(13):2061-75. [177 references] PubMed

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2005 Sep 27

GUIDELINE DEVELOPER(S)

American Heart Association - Professional Association

SOURCE(S) OF FUNDING

American Heart Association

GUIDELINE COMMITTEE

Writing Group

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Authors: Samuel S. Gidding, MD, *Chair*; Barbara A. Dennison, MD, *Cochair*; Leann L. Birch, PhD; Stephen R. Daniels, MD, PhD; Matthew W. Gilman, MD; Alice H. Lichtenstein, DSc; Karyl Thomas Rattay, MD; Julia Steinberger, MD; Nicolas Stettler, MD; Linda Van Horn, PhD, RD

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

The American Heart Association (AHA) makes every effort to avoid any actual or potential conflicts of interest that may arise as a result of an outside relationship or a personal, professional, or business interest of a member of the writing panel. Specifically, all members of the writing group are required to complete and submit a Disclosure Questionnaire showing all such relationships that might be perceived as real or potential conflicts of interest.

Writing Group Disclosures

Writing Group Member	Employment	Research Grant	Other Research Support	Speakers Bureau/Honoraria	Ownership Interest	Consultant/Ac Board
Samuel Gidding	Nemours Foundation	None	None	None	None	None
Barbara Dennison	New York State Department of Health	National Institute of Diabetes and Digestive and Kidney Diseases--grantee USDA--Improving Human Nutrition--grantee	None	None	None	Bassett Health Research Scie Mead Johns Nutritionals Consultar Toddler/Chil Panel; America Association Consultant; Uni of North Caro Consultar
Stephen Daniels	Children's Hospital Cincinnati	None	None	None	None	None
Linda Van Horn	Northwestern University--Feinberg School of Medicine	None	None	None	None	*Journal of t American Die Association*--Ec Chief
Julia Steinberger	University of Minnesota	None	None	None	None	American Phytotherapy R Lab--Consul
Alice Lichtenstein	Tufts University	None	None	None	None	None
Leann Birch	Pennsylvania State University	National Institute of Child Health &	None	None	None	Institute of Me Committee Prevention

Writing Group Member	Employment	Research Grant	Other Research Support	Speakers Bureau/Honoraria	Ownership Interest	Consultant/Ad Board
		Human Development--Grantee; Dairy Management Inc--Grantee; USDA-CSREES--Grantee (coinvestigator)				Childhood Obe Children and Y Chair
Nicolas Stettler	University of Pennsylvania School of Medicine	None	None	None	None	European Soci Pediatric Rese Member; Intern Epidemiolog Association--Me World Hea Federation--Me Swiss Pedia Society--Mem Swiss Medical S -Member; Am Society for Nut Sciences--Mem American Soci Clinical Nutrit Member; No American Asso for the Stud Obesity--Mem Children Are Messengers: Ch the Health Mes International S on Hypertensi Blacks--Advi Committee Me Community H Centers, Child Project, U Department of and Human Ser Consultant; I Origins of Adult Working Gro National Child Study--Core Me Society for Pe Research--Mem Comprehensive Nutrition Policy Force, US Depa

Writing Group Member	Employment	Research Grant	Other Research Support	Speakers Bureau/Honoraria	Ownership Interest	Consultant/Ad Board
						of Agriculture/ Consultant; Na High Blood Pre Education Prog Blood Pressu Children a Adolescents; In of Medicine Con on Nutrien Relationship Seafood
Matthew Gillman	Harvard University	None	None	None	None	None
Karyl Rattay	Nemours Health and Prevention Services	None	None	None	None	None

CREES indicates Cooperative State Research, Education, and Extension Service. This table represents the relationships of writing group members that may be perceived as actual or reasonably perceived conflicts of interest as reported on the Disclosure Questionnaire that all members of the writing group are required to complete and submit. A relationship is considered "significant" if (1) the person receives $\geq$$10,000 during any 12-month period or $\geq$5% of the person's gross income or (2) the person owns $\geq$5% of the voting stock or share of the entity or owns $\geq$$10,000 of the fair market value of the entity. A relationship is considered "modest" if it is less than "significant" under the preceding definition.

Reviewer Disclosures

Reviewer	Employment	Research Grant	Other Research Support	Speakers Bureau/Honoraria	Ownership Interest	Consultant/Adviso Board
Frank Greer	University of Wisconsin--Madison	None	None	None	None	None
Nancy F. Krebs	The Children's Hospital	None	None	None	None	None
Kristie Lancaster	New York University	None	None	None	None	None
William Neal	West Virginia University	None	None	None	None	None
Theresa A. Nicklas	Baylor College of Medicine	USDA; National Institutes of Health	Dairy Management Inc; National Cattlemen's Beef	National Dairy Council Speakers Bureau; National Cattlemen's Beef Association Speakers Bureau	None	Brands Global Advisory Council o Health, Nutrition ar Fitness; US Potato Board's Scientific Advisory Panel;

Reviewer	Employment	Research Grant	Other Research Support	Speakers Bureau/Honoraria	Ownership Interest	Consultant/Advisc Board
			Association; Mars, Inc			Cadbury Scientific Advisory Committe Grain Foods Foundation Scientif Advisory Board
This table represents the relationships of reviewers that may be perceived as actual or reasonably perc interest as reported on the Disclosure Questionnaire that all reviewers are required to complete a						

ENDORSER(S)

American Academy of Pediatrics - Medical Specialty Society

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available from the American Heart Association Web site.

Print copies: Available from the American Heart Association, Public Information, 7272 Greenville Ave, Dallas, TX 75231-4596; Phone: 800-242-8721

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

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