American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN®

THE COMPLETE AND AUTHORITATIVE GUIDE

CARING FOR YOUR SCHOOL-AGE CHILD

AGES 5-12

NEW AND REVISED THIRD EDITION

SHELLY VAZIRI FLAIS, MD, FAAP, Editor-in-Chief

Caring for Your School-Age Child

This invaluable volume was prepared under the editorial direction of pediatrician Shelly Vaziri Flais, MD, FAAP, and draws on the contributions and practical wisdom of more than one hundred pediatric experts. Written in a warm, accessible style, this book gives you the information you need to safeguard your child's most precious asset: his or her health.

In *Caring for Your School-Age Child* you'll find:

- Age-specific advice for children ages 5 to 7 years, 8 to 10 years, and 11 to 12 years of age throughout the book
- Enhanced and extended information on medical, mental health, and behavior conditions
- Parent advice to help children develop resilience and life skills as they grow
- New media chapter with valuable parenting advice regarding use of screen time, electronic devices, internet use and safety, and more
- New chapter on emergency preparedness, hospital care, and money management skills for your child

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- A guide to your child's personal, physical, behavioral, and social development, including the stages of puberty
- Guidance for parents on being involved in your child's schooling, from starting school to developing good homework habits and reinforcing learning
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- Current AAP policy on important child health issues
- The best ways to encourage good nutrition and physical fitness
- Advice on effective discipline and optimal nurturing

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Caring for Your School-Age Child

Ages 5 to 12

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Illustrations

All illustrations are by Jeanne Brunick except for illustrations featured on pages 55, 312, and 340. Those were created by Anthony Alex LeTourneau.

PLEASE NOTE

The information contained in this book is intended to complement, not substitute for, the advice of your child's pediatrician. Before starting any medical treatment or medical program, you should consult with your own physician, who can discuss your individual needs with you and counsel you about symptoms and treatment.

The information and advice in this book apply equally to children of both sexes (except where noted). To indicate this, we have chosen to alternate between masculine and feminine pronouns throughout the book.

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The American Academy of Pediatrics constantly monitors new scientific evidence and makes appropriate adjustments in its recommendations. For example, future research and the development of new childhood vaccines may alter the regimen for the administration of existing vaccines. Therefore, the schedule for immunizations outlined in this book is subject to change. These and other potential situations serve to emphasize the importance of always checking with your pediatrician for the latest information concerning the health of your child. For additional information on caring for your child, their needs and well-being, visit HealthyChildren.org.

This book is dedicated to
all the people who recognize that children
are our greatest inspiration in the present
and our greatest hope for the future

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Foreword

The American Academy of Pediatrics (AAP) welcomes you to the third edition of *Caring for Your School-Age Child: Ages 5 to 12*.

The American Academy of Pediatrics is an organization of 67,000 primary care pediatricians, pediatric medical subspecialists, and pediatric surgical specialists, dedicated to the health, safety, and well-being of infants, children, adolescents, and young adults. This updated edition of *Caring for Your School-Age Child: Ages 5 to 12* is part of the Academy's ongoing education efforts to provide parents and caregivers with high-quality information on a broad spectrum of children's health issues.

What distinguishes this book on the middle years of childhood from others in bookstores and on library shelves is that it has been developed and extensively reviewed by physician members of the American Academy of Pediatrics. An eight-member editorial board developed the initial material with the assistance of more than one hundred contributors and reviewers. Because medical information is constantly changing, every effort has been made to ensure that this book contains the most up-to-date findings. Readers can visit the AAP's official website for parents at healthychildren.org to keep current on the latest information related to child health and guidance on parenting.

It is the Academy's hope that this book will become an invaluable resource and reference guide for parents and caregivers. We believe it is the best comprehensive source of information on matters of children's health and well-being. We are confident that parents and caregivers will find the book extremely valuable, and encourage its use along with the advice and counsel of our readers' own pediatricians, who will provide individual guidance and assistance related to the health of their children.

Colleen A. Kraft, MD, FAAP
President
American Academy of Pediatrics

Introduction

Your School-Age Child

WHEN CHILDREN REACH the middle years of childhood, many parents breathe a sigh of relief. The infancy, toddlerhood, and preschool years—a busy time when children grow so dramatically and require constant attention—have passed. At the same time, adolescence seems far off in the future. Yet the school years are formative years of great growth and transition for kids. During these middle years of childhood, the child learns more about navigating the outside world, yet still requires a stable, nurturing home environment. As parents, our job is to help nurture our kids' self-empowerment, resilience, and life skills, all the while providing a secure home base to return to.

The middle years of childhood are years of enormous social growth. Between the ages of 5 and 12, children's intellectual competence develops dramatically, and they become noticeably better at logical thinking, reasoning, and problem-solving. With these skills in hand, they begin to try out in the outside world what they have learned at home. These years offer children opportunities to see how the skills, behavior, beliefs, and values that serve them at home can work in the company of new friends and social situations.

The middle years are complex years, when children's self-esteem is tested and is reinforced daily. Children must "find themselves" and be-

come more independent, while simultaneously gaining acceptance among their friends and retaining a secure place within their families.

The habits and behavior patterns that children develop during these years will strongly influence their long-term health and well-being, success at school and work, and future relationships. This book is written to assist parents, caregivers, teachers, and others to help children take advantage of the experiences these years provide—to build a firm foundation of healthy behavior, emotional well-being, and academic and social skills for their adolescence and their adult lives. The role of a parent is not to anticipate and solve all our children's problems for them; rather, our role is to help nurture those skills within our children so that they have the tools to resolve issues themselves.

Since you have chosen to read this book, you already have some of the characteristics necessary to guide a child through the middle years—namely, awareness and interest. Children have an innate desire to explore, to learn, to grow, and to do their best, whatever the situation. Parents have that same determination as they go about raising their children, but just like their children, parents need information, advice, and encouragement in order to succeed. There is no one-size-fits-all approach to parenting; rather, a lot of parenting skills develop through trial and error and by learning from experience.

The information in this book is provided by pediatricians, members of the American Academy of Pediatrics, who are national experts in their fields. They have studied child health and development, watched and learned from the tens of thousands of families for whom they have cared, and are parents themselves.

Families Today

Everyone knows that a child's experience within his or her family today continues to evolve. Grandparents, cousins, uncles, and aunts are as likely to be many miles away as they are to be living around the corner. Today, some children live with both of their parents, some live with only one parent, and some live in households with stepparents. Daily routines are dictated as much by the work schedule of the parents as by the needs and wishes of the family, and there seems to be less time just to be a family—spending time together simply to enjoy each other's company. Also vying for family time is the prevalence of screens (smartphones, tablets, and the like); while technology seemingly makes connections easier than ever before, it can interfere with connections within the family.

Growing Up in a Family

The changes and complexities in family life demand that we pay attention to families, for they remain the place where children grow up. During the preschool years families are like incubators, providing children with a safe place where they can feel loved and cared about and discover who they are. In the middle years families provide a working model in which children can observe and practice relationships with other people. Families also provide a supportive environment in which children can find help in understanding, coping with, and finding their place in the world around them.

Children's relationships with their parents evolve during these years. You and your child will spend many fewer of your waking hours together now. Monitoring your child's activities and behavior, and teaching him new skills, will become more of a hands-off process for you, and your child must develop strategies for managing his own behavior.

Increased Independence

During the middle years, children first venture into the world alone, physically unaccompanied by their families. Schools are a place of great importance in the lives of children. They are the site of new social contacts with both adults and other children, as well as new expectations for the child. By participating in school activities and organizations, children develop friendships that for the first time are unrelated to their families. They will form new connections with others, but will also face unfamiliar social behaviors.

To succeed and grow amid shifting interests and allegiances, children must learn about themselves as players in a social game and must discover how best to get along in this new arena. Their expanding self-awareness becomes increasingly stable and comprehensive. They develop standards and expectations for their own behavior, and become more independent and self-sufficient. While they try on new roles and attitudes in order to learn about themselves, they still will need to be able to turn to their families, especially to their parents, for guidance and stability.

Recurring Themes

There is much that parents can do and say that will help their children nurture the tools they need as future adults. First and foremost, parents need to model the values and behavior they wish their children to adopt, and direct their children into situations that reinforce and reward them. Whether it is responding to people

less fortunate than themselves or choosing what foods to eat, children's behavior is in part an imitation of behavior they have observed.

Second, parents need to learn how to communicate with their children and to find opportunities to practice these skills. Simply *listening* is a fundamental communication skill. Parents must listen to their children, actively trying to hear what messages they are attempting to convey. The better that parents understand their children, the better able they will be to work together to meet challenges and solve problems when they arise. Good parents are those who have made the effort to know their children well, and have succeeded. Children whose parents know and understand them will have fewer personal and social problems.

In addition to active listening, successful communication is based on mutual respect, shared experiences, and open expression of thoughts and feelings. By paying attention to each child's personal skills and uniquely individual character, parents will find much to admire and respect.

Third, parents must support their children and be an advocate for them in many settings. Parents should be involved in their children's worlds and should help them learn resilience and problem-solving skills for themselves.

Throughout this book, we offer advice on how these parenting skills can be acquired and applied.

How to Use This Book

Sometimes you simply want to understand your child (or someone else's child) better, or to feel reassured that you are doing all right. At other times you want help with a specific problem. The better you understand child development generally, and your child specifically, the better equipped you will be to work together on a problem.

This book has different kinds of chapters to meet these different needs. Some chapters provide background information about school-age children, their development, behavior, health, schools, and the social issues they confront. These chapters take a little longer to read, but the information they contain can be applied to many situations. By reading them, you also will learn about expected child growth, development, and behavior. Other chapters address specific problems that commonly occur during a child's middle years. You can turn to these for advice about a problem you and your child (or you and your student) are facing. In addition, you can find more information about medical conditions in Part VIII, "Medical, Mental Health, and Behavior Issues."

Parenting is a natural process that can be enhanced by learning about your child and understanding your own feelings and inclinations. No two children are alike, and there is no one-size-fits-all parenting strategy. It is our hope that the information and advice in this book will assist your family to support the health and well-being of your child.

PART I

Nutritional and Physical Fitness

~ 1 ~

Maintaining Your Child's Health

YOU, YOUR CHILD, and your child's pediatrician have equally important roles to play in maintaining your child's health, preventing illness and injury during childhood, and helping establish habits that will promote health and well-being for a lifetime.

Choosing a Pediatrician

When seeking quality medical care for your children, where should you turn? Most parents rely on a pediatrician, a physician (MD, DO) who completed four years of medical school and then three years of residency training in general pediatrics, specializing in the care of children. Pediatricians have special training in the health and illnesses of children through the age of adolescence, and most are certified by the American Board of Pediatrics after passing an initial comprehensive examination covering all areas of health related to infants, children, and young adults, as well as continuing their medical education to maintain board certification.

By your child's middle years, you probably have already found a pediatrician with whom you are happy. However, the occasion may arise where you need to find a new doctor—perhaps you have moved to a new city, or your pediatrician has retired.

In circumstances like these, try to obtain a referral from your present pediatrician. He or she may know a colleague in the city where you are moving, or one who is taking over the retiree's practice. Friends and family members might also recommend one or more pediatricians for you to consider.

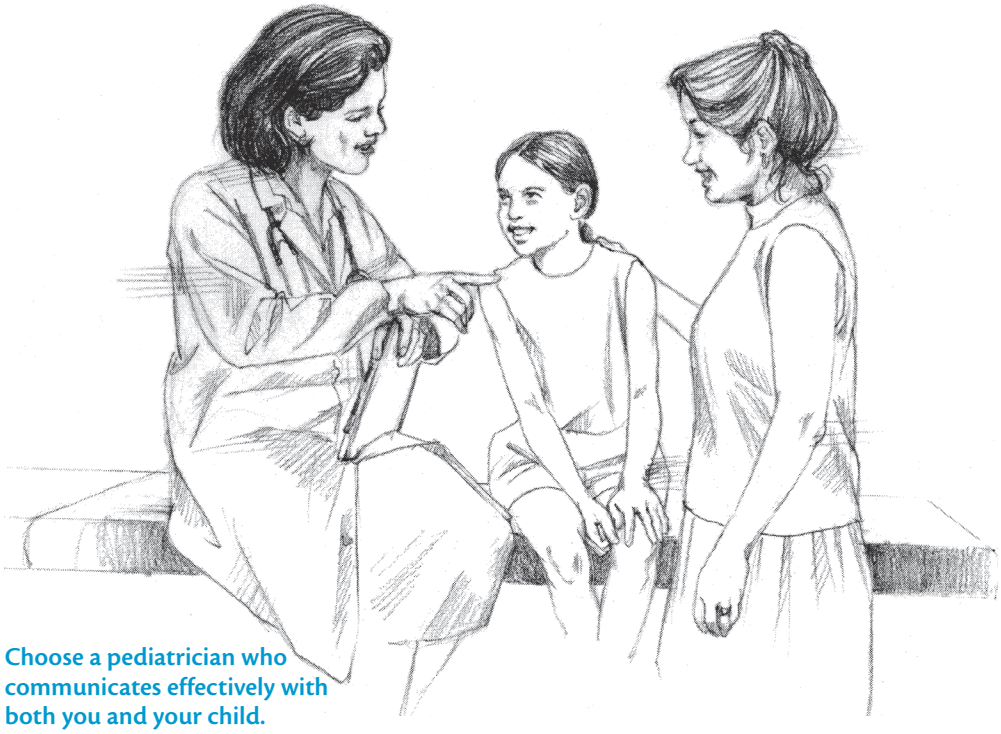
There are other good sources of names of qualified pediatricians:

- Find a pediatrician or pediatric specialist at HealthyChildren.org, the official parenting website of the American Academy of Pediatrics.
- Most local/county medical societies provide referral services to pediatricians in their area who are taking new patients.
- If you are located near a major medical center, community hospital, or teaching hospital, contact its department of pediatrics for the names of doctors in your area.

Interviewing Pediatricians

With a list of doctors in hand, you can learn more about your options by investigating the website of each pediatrician's practice. You should be able to learn more about the doctor's background and training, as well as general office procedures. If you are impressed with what you hear, arrange for an interview during which you can meet the doctor and ask some additional questions. It may be more convenient to do this interview by telephone. Here are some things to consider when choosing a pediatrician:

- What medical school did the pediatrician attend, and where did he or she undergo postgraduate and residency training?
- What are the doctor's present hospital appointments? If it becomes necessary for your child to be hospitalized, where would he be admitted? Would your pediatrician be managing your child's hospital stay, or does the hospital use in-house pediatric hospitalists (hospital specialists)?
- Is the pediatrician's office conveniently located? Is it easily accessible by car or public transportation? Is there accessible parking?



Choose a pediatrician who communicates effectively with both you and your child.

- Are the office hours convenient for your own schedule? If you are a working parent, you may desire evening or weekend hours.
- What is the doctor's policy on taking and returning phone calls? Is there a nurse in the office who can answer routine questions? Who answers emergency calls after hours—for example, overnight or on weekends?
- Is the doctor in a group practice with other physicians? Does another physician cover for the doctor at times?
- How often will the pediatrician see your child for checkups and immunizations?
- Do you sense a genuine interest by the doctor in the problems of *your* child, including particular health disorders he may have?
- Do both the physician and the office staff appear amicable and courteous? Do they demonstrate compassion and patience? Or do you feel rushed in the office, as though the doctor is eager to move on to the next patient?

American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN®

Recommendations for Preventive Pediatric Health Care

Bright Futures/American Academy of Pediatrics

Bright Futures
prevention and health promotion for infants, children, adolescents, and their families™

Each child and family is unique; therefore, these Recommendations for Preventive Pediatric Health Care are designed for the care of children who are receiving competent parenting, have no manifestations of any important health problems, and are growing and developing in a satisfactory fashion. Developmental, psychosocial, and chronic disease issues for children and adolescents may require frequent counseling and treatment visits separate from preventive care visits. Additional visits also may become necessary if circumstances suggest variations from normal.

These recommendations represent a consensus by the American Academy of Pediatrics (AAP) and Bright Futures. The AAP continues to emphasize the great importance of continuity of care in comprehensive health supervision and the need to avoid fragmentation of care.

Refer to the specific guidance by age as listed in the *Bright Futures Guidelines* (Hagan JF, Shaw JS, Duncan PM, eds. *Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents.* 4th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2017).

The recommendations in this statement do not indicate an exclusive course of treatment or standard of medical care. Variations, taking into account individual circumstances, may be appropriate.

	INFANCY								EARLY CHILDHOOD							MIDDLE CHILDHOOD						ADOLESCENCE										
AGE[1]	**Prenatal**[2]	**Newborn**[3]	**3-5 d**[4]	**By 1 mo**	**2 mo**	**4 mo**	**6 mo**	**9 mo**	**12 mo**	**15 mo**	**18 mo**	**24 mo**	**30 mo**	**3 y**	**4 y**	**5 y**	**6 y**	**7 y**	**8 y**	**9 y**	**10 y**	**11 y**	**12 y**	**13 y**	**14 y**	**15 y**	**16 y**	**17 y**	**18 y**	**19 y**	**20 y**	**21 y**
HISTORY Initial/Interval	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MEASUREMENTS																															
Length/Height and Weight		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Head Circumference		●	●	●	●	●	●	●	●	●	●	●																			
Weight for Length		●	●	●	●	●	●	●	●	●	●																				
Body Mass Index[5]												●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Blood Pressure[6]		★	★	★	★	★	★	★	★	★	★	★	★	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
SENSORY SCREENING																															
Vision[7]		★	★	★	★	★	★	★	★	★	★	★	★	●	●	●	●	★	●	★	●	★	●	★	★	●	★	★	★	★	★
Hearing		●[8]	●[9] →			★	★	★	★	★	★	★	★	★	●	●	●	★	●	★	●	←		●[10]	→	←	●	→	←		●	→
DEVELOPMENTAL/BEHAVIORAL HEALTH																															
Developmental Screening[11]								●			●		●																		
Autism Spectrum Disorder Screening[12]											●	●																			
Developmental Surveillance		●	●	●	●	●	●		●	●		●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Psychosocial/Behavioral Assessment[13]		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Tobacco, Alcohol, or Drug Use Assessment[14]																					★	★	★	★	★	★	★	★	★	★	★
Depression Screening[15]																						●	●	●	●	●	●	●	●	●	●
Maternal Depression Screening[16]				●	●	●	●																								
PHYSICAL EXAMINATION[17]		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
PROCEDURES[18]																															
Newborn Blood		●[19]	●[20] →																												
Newborn Bilirubin[21]		●																													
Critical Congenital Heart Defect[22]		●																													
Immunization[23]		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Anemia[24]						★			●	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★
Lead[25]							★	★	● or ★[26]		★	● or ★[26]		★	★	★	★															
Tuberculosis[27]				★			★		★			★		★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★
Dyslipidemia[28]												★			★		★		★	←	● →	★	★	★	★	★	←			●	→	
Sexually Transmitted Infections[29]																						★	★	★	★	★	★	★	★	★	★
HIV[30]																						★	★	★	★	←		● →		★	★	★
Cervical Dysplasia[31]																															●
ORAL HEALTH[32]							●[33]	●[33]	★		★	★	★	★	★	★	★														
Fluoride Varnish[34]							←				●			→																	
Fluoride Supplementation[35]							★	★	★		★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★					
ANTICIPATORY GUIDANCE	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

1. If a child comes under care for the first time at any point on the schedule, or if any items are not accomplished at the suggested age, the schedule should be brought up-to-date at the earliest possible time.
2. A prenatal visit is recommended for parents who are at high risk, for first-time parents, and for those who request a conference. The prenatal visit should include anticipatory guidance, pertinent medical history, and a discussion of benefits of breastfeeding and planned method of feeding, per "The Prenatal Visit" (http://pediatrics.aappublications.org/content/124/4/1227.full).
3. Newborns should have an evaluation after birth, and breastfeeding should be encouraged (and instruction and support should be offered).
4. Newborns should have an evaluation within 3 to 5 days of birth and within 48 to 72 hours after discharge from the hospital to include evaluation for feeding and jaundice. Breastfeeding newborns should receive formal breastfeeding evaluation, and their mothers should receive encouragement and instruction, as recommended in "Breastfeeding and the Use of Human Milk" (http://pediatrics.aappublications.org/content/129/3/e827.full). Newborns discharged less than 48 hours after delivery must be examined within 48 hours of discharge, per "Hospital Stay for Healthy Term Newborns" (http://pediatrics.aappublications.org/content/125/2/405.full).
5. Screen, per "Expert Committee Recommendations Regarding the Prevention, Assessment, and Treatment of Child and Adolescent Overweight and Obesity: Summary Report" (http://pediatrics.aappublications.org/content/120/Supplement_4/S164.full).
6. Blood pressure measurement in infants and children with specific risk conditions should be performed at visits before age 3 years.
7. A visual acuity screen is recommended at ages 4 and 5 years, as well as in cooperative 3-year-olds. Instrument-based screening may be used to assess risk at ages 12 and 24 months, in addition to the well visits at 3 through 5 years of age. See "Visual System Assessment in Infants, Children, and Young Adults by Pediatricians" (http://pediatrics.aappublications.org/content/137/1/e20153596) and "Procedures for the Evaluation of the Visual System by Pediatricians" (http://pediatrics.aappublications.org/content/137/1/e20153597).
8. Confirm initial screen was completed, verify results, and follow up, as appropriate. Newborns should be screened, per "Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs" (http://pediatrics.aappublications.org/content/120/4/898.full).
9. Verify results as soon as possible, and follow up, as appropriate.
10. Screen with audiometry including 6,000 and 8,000 Hz high frequencies once between 11 and 14 years, once between 15 and 17 years, and once between 18 and 21 years. See "The Sensitivity of Adolescent Hearing Screens Significantly Improves by Adding High Frequencies" (http://www.jahonline.org/article/S1054-139X(16)00048-3/fulltext).
11. See "Identifying Infants and Young Children With Developmental Disorders in the Medical Home: An Algorithm for Developmental Surveillance and Screening" (http://pediatrics.aappublications.org/content/118/1/405.full).
12. Screening should occur per "Identification and Evaluation of Children With Autism Spectrum Disorders" (http://pediatrics.aappublications.org/content/120/5/1183.full).
13. This assessment should be family centered and may include an assessment of child social-emotional health, caregiver depression, and social determinants of health. See "Promoting Optimal Development: Screening for Behavioral and Emotional Problems" (http://pediatrics.aappublications.org/content/135/2/384) and "Poverty and Child Health in the United States" (http://pediatrics.aappublications.org/content/137/4/e20160339).
14. A recommended assessment tool is available at http://www.ceasar-boston.org/CRAFFT/index.php.
15. Recommended screening using the Patient Health Questionnaire (PHQ)-2 or other tools available in the GLAD-PC toolkit and at http://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/Mental-Health/Documents/MH_ScreeningChart.pdf.
16. Screening should occur per "Incorporating Recognition and Management of Perinatal and Postpartum Depression Into Pediatric Practice" (http://pediatrics.aappublications.org/content/126/5/1032).
17. At each visit, age-appropriate physical examination is essential, with infant totally unclothed and older children undressed and suitably draped. See "Use of Chaperones During the Physical Examination of the Pediatric Patient" (http://pediatrics.aappublications.org/content/127/5/991.full).
18. These may be modified, depending on entry point into schedule and individual need.

(continued)

KEY: ● = to be performed ★ = risk assessment to be performed with appropriate action to follow, if positive ← ● → = range during which a service may be provided

(continued)

19. Confirm initial screen was accomplished, verify results, and follow up, as appropriate. The Recommended Uniform Newborn Screening Panel (http://www.hrsa.gov/advisorycommittees/mchbadvisory/heritabledisorders/recommendedpanel/uniformscreeningpanel.pdf), as determined by The Secretary's Advisory Committee on Heritable Disorders in Newborns and Children, and state newborn screening laws/regulations (http://genes-r-us.uthscsa.edu/sites/genes-r-us/files/nbsdisorders.pdf) establish the criteria for and coverage of newborn screening procedures and programs.
20. Verify results as soon as possible, and follow up, as appropriate.
21. Confirm initial screening was accomplished, verify results, and follow up, as appropriate. See "Hyperbilirubinemia in the Newborn Infant ≥35 Weeks' Gestation: An Update With Clarifications" (http://pediatrics.aappublications.org/content/124/4/1193).
22. Screening for critical congenital heart disease using pulse oximetry should be performed in newborns, after 24 hours of age, before discharge from the hospital, per "Endorsement of Health and Human Services Recommendation for Pulse Oximetry Screening for Critical Congenital Heart Disease" (http://pediatrics.aappublications.org/content/129/1/190.full).
23. Schedules, per the AAP Committee on Infectious Diseases, are available at http://redbook.solutions.aap.org/SS/Immunization_Schedules.aspx. Every visit should be an opportunity to update and complete a child's immunizations.
24. See "Diagnosis and Prevention of Iron Deficiency and Iron-Deficiency Anemia in Infants and Young Children (0–3 Years of Age)" (http://pediatrics.aappublications.org/content/126/5/1040.full).
25. For children at risk of lead exposure, see "Low Level Lead Exposure Harms Children: A Renewed Call for Primary Prevention" (http://www.cdc.gov/nceh/lead/ACCLPP/Final_Document_030712.pdf).
26. Perform risk assessments or screenings as appropriate, based on universal screening requirements for patients with Medicaid or in high prevalence areas.
27. Tuberculosis testing per recommendations of the AAP Committee on Infectious Diseases, published in the current edition of the AAP *Red Book: Report of the Committee on Infectious Diseases*. Testing should be performed on recognition of high-risk factors.
28. See "Integrated Guidelines for Cardiovascular Health and Risk Reduction in Children and Adolescents" (http://www.nhlbi.nih.gov/guidelines/cvd_ped/index.htm).
29. Adolescents should be screened for sexually transmitted infections (STIs) per recommendations in the current edition of the AAP *Red Book: Report of the Committee on Infectious Diseases.*
30. Adolescents should be screened for HIV according to the USPSTF recommendations (http://www.uspreventiveservicestaskforce.org/uspstf/uspshivi.htm) once between the ages of 15 and 18, making every effort to preserve confidentiality of the adolescent. Those at increased risk of HIV infection, including those who are sexually active, participate in injection drug use, or are being tested for other STIs, should be tested for HIV and reassessed annually.
31. See USPSTF recommendations (http://www.uspreventiveservicestaskforce.org/uspstf/uspscerv.htm). Indications for pelvic examinations prior to age 21 are noted in "Gynecologic Examination for Adolescents in the Pediatric Office Setting" (http://pediatrics.aappublications.org/content/126/3/583.full).
32. Assess whether the child has a dental home. If no dental home is identified, perform a risk assessment (https://www.aap.org/RiskAssessmentTool) and refer to a dental home. Recommend brushing with fluoride toothpaste in the proper dosage for age. See "Maintaining and Improving the Oral Health of Young Children" (http://pediatrics.aappublications.org/content/134/6/1224).
33. Perform a risk assessment (https://www.aap.org/RiskAssessmentTool). See "Maintaining and Improving the Oral Health of Young Children" (http://pediatrics.aappublications.org/content/134/6/1224).
34. See USPSTF recommendations (http://www.uspreventiveservicestaskforce.org/uspstf/uspsdnch.htm). Once teeth are present, fluoride varnish may be applied to all children every 3–6 months in the primary care or dental office. Indications for fluoride use are noted in "Fluoride Use in Caries Prevention in the Primary Care Setting" (http://pediatrics.aappublications.org/content/134/3/626).
35. If primary water source is deficient in fluoride, consider oral fluoride supplementation. See "Fluoride Use in Caries Prevention in the Primary Care Setting" (http://pediatrics.aappublications.org/content/134/3/626).

Summary of Changes Made to the Bright Futures/AAP Recommendations for Preventive Pediatric Health Care

(Periodicity Schedule)

This schedule reflects changes approved in February 2017 and published in April 2017.
For updates, visit www.aap.org/periodicityschedule.
For further information, see the *Bright Futures Guidelines*, 4th Edition, *Evidence and Rationale chapter* (https://brightfutures.aap.org/Bright%20Futures%20Documents/BF4_Evidence_Rationale.pdf).

CHANGES MADE IN FEBRUARY 2017

HEARING

- Timing and follow-up of the screening recommendations for hearing during the infancy visits have been delineated. Adolescent risk assessment has changed to screening once during each time period.
- Footnote 8 has been updated to read as follows: "Confirm initial screen was completed, verify results, and follow up, as appropriate. Newborns should be screened, per 'Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs' (http://pediatrics.aappublications.org/content/120/4/898.full)."
- Footnote 9 has been added to read as follows: "Verify results as soon as possible, and follow up, as appropriate."
- Footnote 10 has been added to read as follows: "Screen with audiometry including 6,000 and 8,000 Hz high frequencies once between 11 and 14 years, once between 15 and 17 years, and once between 18 and 21 years. See 'The Sensitivity of Adolescent Hearing Screens Significantly Improves by Adding High Frequencies' (http://www.jahonline.org/article/S1054-139X(16)00048-3/fulltext)."

PSYCHOSOCIAL/BEHAVIORAL ASSESSMENT

- Footnote 13 has been added to read as follows: "This assessment should be family centered and may include an assessment of child social-emotional health, caregiver depression, and social determinants of health. See 'Promoting Optimal Development: Screening for Behavioral and Emotional Problems' (http://pediatrics.aappublications.org/content/135/2/384) and 'Poverty and Child Health in the United States' (http://pediatrics.aappublications.org/content/137/4/e20160339)."

TOBACCO, ALCOHOL, OR DRUG USE ASSESSMENT

- The header was updated to be consistent with recommendations.

DEPRESSION SCREENING

- Adolescent depression screening begins routinely at 12 years of age (to be consistent with recommendations of the US Preventive Services Task Force [USPSTF]).

MATERNAL DEPRESSION SCREENING

- Screening for maternal depression at 1-, 2-, 4-, and 6-month visits has been added.
- Footnote 16 was added to read as follows: "Screening should occur per 'Incorporating Recognition and Management of Perinatal and Postpartum Depression Into Pediatric Practice' (http://pediatrics.aappublications.org/content/126/5/1032)."

NEWBORN BLOOD

- Timing and follow-up of the newborn blood screening recommendations have been delineated.
- Footnote 19 has been updated to read as follows: "Confirm initial screen was accomplished, verify results, and follow up, as appropriate. The Recommended Uniform Newborn Screening Panel (http://www.hrsa.gov/advisorycommittees/mchbadvisory/heritabledisorders/recommendedpanel/uniformscreeningpanel.pdf), as determined by The Secretary's Advisory Committee on Heritable Disorders in Newborns and Children, and state newborn screening laws/regulations (http://genes-r-us.uthscsa.edu/sites/genes-r-us/files/nbsdisorders.pdf) establish the criteria for and coverage of newborn screening procedures and programs."
- Footnote 20 has been added to read as follows: "Verify results as soon as possible, and follow up, as appropriate."

NEWBORN BILIRUBIN

- Screening for bilirubin concentration at the newborn visit has been added.
- Footnote 21 has been added to read as follows: "Confirm initial screening was accomplished, verify results, and follow up, as appropriate. See 'Hyperbilirubinemia in the Newborn Infant ≥35 Weeks' Gestation: An Update With Clarifications' (http://pediatrics.aappublications.org/content/124/4/1193)."

DYSLIPIDEMIA

- Screening for dyslipidemia has been updated to occur once between 9 and 11 years of age, and once between 17 and 21 years of age (to be consistent with guidelines of the National Heart, Lung, and Blood Institute).

SEXUALLY TRANSMITTED INFECTIONS

- Footnote 29 has been updated to read as follows: "Adolescents should be screened for sexually transmitted infections (STIs) per recommendations in the current edition of the AAP *Red Book: Report of the Committee on Infectious Diseases*."

HIV

- A subheading has been added for the HIV universal recommendation to avoid confusion with STIs selective screening recommendation.
- Screening for HIV has been updated to occur once between 15 and 18 years of age (to be consistent with recommendations of the USPSTF).
- Footnote 30 has been added to read as follows: "Adolescents should be screened for HIV according to the USPSTF recommendations (http://www.uspreventiveservicestaskforce.org/uspstf/uspshivi.htm) once between the ages of 15 and 18, making every effort to preserve confidentiality of the adolescent. Those at increased risk of HIV infection, including those who are sexually active, participate in injection drug use, or are being tested for other STIs, should be tested for HIV and reassessed annually."

ORAL HEALTH

- Assessing for a dental home has been updated to occur at the 12-month and 18-month through 6-year visits. A subheading has been added for fluoride supplementation, with a recommendation from the 6-month through 12-month and 18-month through 16-year visits.
- Footnote 32 has been updated to read as follows: "Assess whether the child has a dental home. If no dental home is identified, perform a risk assessment (https://www.aap.org/RiskAssessmentTool) and refer to a dental home. Recommend brushing with fluoride toothpaste in the proper dosage for age. See 'Maintaining and Improving the Oral Health of Young Children' (http://pediatrics.aappublications.org/content/134/6/1224)."
- Footnote 33 has been updated to read as follows: "Perform a risk assessment (https://www.aap.org/RiskAssessmentTool). See 'Maintaining and Improving the Oral Health of Young Children' (http://pediatrics.aappublications.org/content/134/6/1224)."
- Footnote 35 has been added to read as follows: "If primary water source is deficient in fluoride, consider oral fluoride supplementation. See 'Fluoride Use in Caries Prevention in the Primary Care Setting' (http://pediatrics.aappublications.org/content/134/3/626)."

- How are visits for acute illnesses handled? Can you make an appointment on short notice if your child needs to see the pediatrician because of a sore throat or an infection, for example?

- Does the doctor communicate clearly, using straightforward language (not medical jargon) to explain illnesses and treatments, and does the doctor make an effort to ensure that all your questions are answered?

- What are the doctor's usual fees for sick visits, routine examinations, and immunizations? What is the office policy regarding the processing of insurance forms?

- In what managed care programs does the doctor participate?

- Does the pediatrician's office serve as its patients' "medical home"? If your child should ever develop a complex illness that necessitates the care of one or more specialists, will your pediatrician coordinate care among all the specialists providing treatment?

Managed Care

Many Americans receive their healthcare in managed care plans. These plans, typically offered by employers and state Medicaid programs, provide services through health maintenance organizations (HMOs) or preferred provider organizations (PPOs). The plans have their own networks of pediatricians and other physicians, and if you or your employer change from one managed care plan to another, you may find that the pediatrician you have had a relationship with is not part of the new network. Once you have a pediatrician you like, ask what plans she is in, and see if you can join one of them if there's a need to switch from one HMO or PPO to another.

Managed care plans attempt to reduce their costs by having doctors control patient access to certain healthcare services. Your pediatrician may act as a "gatekeeper," needing to give approval before your child can be seen by a pediatric medical subspecialist or surgical specialist. Without this approval, you'll have to pay for part or all of these services out of pocket.

To help you maneuver effectively through your managed care plan, here are some points to keep in mind:

- To determine what care is provided in your managed care plan, carefully read the materials provided by the plan (often called a certificate of coverage). If you have questions, talk to a plan representative or your employer's

Keeping Medical Records

Because you might change pediatricians from time to time, it's useful to keep accurate medical records of your child's health. Your records should include the following information:

- **Physicians.** Include the name and address of your child's previous pediatrician.
- **Hospitalizations.** List dates, illnesses, and treatments.
- **Immunizations.** Include the dates on which they were administered.
- **Your child's height and weight.** Height and weight are measured at each well-child visit with the pediatrician.
- **Special care.** If your child has received treatment for particular diseases or conditions, note these, the age at which they began, and what therapies were used.
- **Screening tests.** Include the results of tests done to evaluate your child's vision, hearing, lead levels, and other aspects of health.
- **Family history.** List health conditions that run in your extended family—including allergies, asthma, diabetes, heart disease, and high blood pressure—that might be important for your pediatrician to know about.

benefits manager. All plans limit some services (e.g., mental health services, home health services), so find out what's covered and what's not.

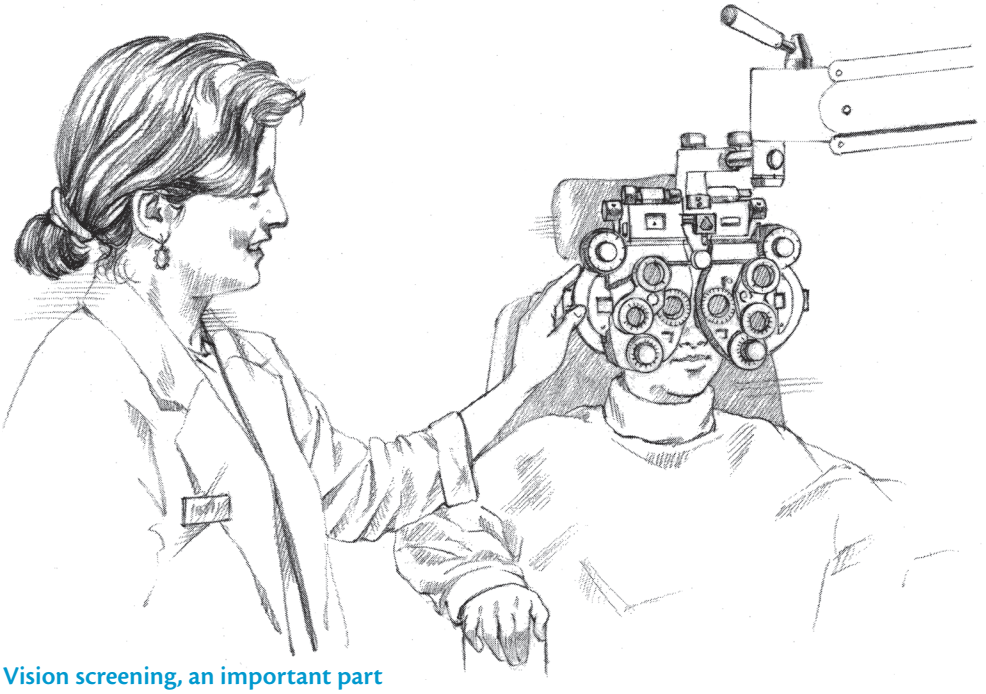
- When you are part of a managed care plan, primary and preventative care visits usually will be covered, including well-child checkups, treatment for illnesses or injuries, and immunizations. In many plans, you will have a co-payment—a fixed charge that you pay—for each primary care visit.

- Once you've chosen a pediatrician, it's best to stay with her. But if you feel the need to switch, all plans allow you to select another doctor from among those who are part of their network. The plan administrator can give you information on how to make this change. Some plans allow you to switch only during certain periods, called open enrollment.

- If you feel that your child needs to see a pediatric subspecialist, work with your pediatrician to find one who is part of your plan, and obtain approval to schedule an appointment with her. Check your plan contract for details about whether your insurer will pay at least a portion of these costs. Also, if hospital care is needed, seek your pediatrician's guidance in selecting a hospital in your plan that specializes in the care of children. Most hospital procedures and surgeries require prior approval.

- Know in advance what emergency services are covered, since you won't always have time to contact your pediatrician. Most managed care plans will pay for emergency room care in a true emergency, so in a life-threatening situation, go immediately to the nearest hospital. In general, follow-up care (e.g., removing stitches) should be done in your pediatrician's office.

- To file a complaint—for example, if coverage of certain procedures is denied—start by expressing your concern to your pediatrician. If she is unable to resolve the problem, contact your plan's member service representative or your employer's employee benefits manager about filing a com-



Vision screening, an important part of your child's checkups, may reveal the need for further vision testing.

plaint. If a claim has been denied, you typically have fifteen to thirty days to file an appeal, and you could receive a decision about the appeal within thirty to ninety days of the request. If you still are dissatisfied, you may decide to seek help from the office of your state insurance commissioner, or you can take legal action.

Resolving Problems

Your child can continue to be treated by a pediatrician through adolescence. However, no matter how carefully you have made your choice of a pediatrician, sometimes the chemistry between doctor and patient or between doctor and parent may become less than ideal. After several office visits you may decide that your expectations are not being met. In these instances, make an effort to discuss the problem with the pediatrician. Most difficulties can be smoothed out and resolved. On occasion, you might make a decision to switch physicians if the relationship continues to be unsatisfactory.

When to See Your Pediatrician

The American Academy of Pediatrics recommends that your middle-years child have a routine well-child examination every year. During these doctor's visits, your physician will conduct a number of evaluations, such as measurement of height, weight, and blood pressure, a check of vital functions, a vision and hearing screening, and a complete physical examination. The doctor will ensure that your child's immunizations are up to date, and ask about your child's diet, exercise habits, and sleep patterns. He or she can also refer you to other health professionals; for example, children should receive regular dental checkups twice a year, and if a pediatrician detects eye problems during routine screening, he or she may refer your child to an ophthalmologist for further evaluation and care.

YOUR PEDIATRICIAN IS interested not only in your child's physical health but also in his or her mental and emotional well-being. It is appropriate to discuss such concerns as your child's school experiences, relationships with peers, family transitions or difficulties, and daily stresses.

Health Maintenance

There are many preventative measures that your family can take to reduce your child's risk of illness and injury. As always, encourage your child to use good per-

Yearly Well-Child Visit with Your Pediatrician
(ALSO KNOWN AS HEALTH SUPERVISION VISIT)

Children ages 5–7 years: Annual visits to the pediatrician allow the doctor to monitor prepubertal growth, ensure vaccines are up to date, and assess social and school acclimation.

Children ages 8–10 years: Children this age need annual visits with their doctor. Girls may be showing early signs of puberty. Vaccines prevent infections and disease, and a child's emotional and social development is discussed.

Children ages 11–12 years: These are particularly exciting years for school-age children. At this age kids should see their pediatrician every year. Schools will likely require physical forms and sports forms, and your pediatrician will recommend disease-preventing vaccines based on age and assess your child's growth as she approaches or begins puberty.

sonal hygiene habits: bathing regularly, routinely washing hands before eating and after going to the bathroom to prevent the spread of infectious diseases, brushing teeth at least twice a day, and flossing once a day.

Immunizations

The success of modern vaccines is one of the truly extraordinary accomplishments of medical science. Immunizations are the greatest public health advancement of the twentieth century. In earlier generations many school-age children contracted communicable diseases such as polio and whooping cough (pertussis), frequently with devastating consequences. Some children died; others were left with permanent impairments, perhaps dependent on a wheelchair. But the development of vaccines has made many of these childhood illnesses relatively rare and has thus improved the lifetime health and well-being of millions of people. These immunizations help children build their own defenses against infectious diseases by forming infection-fighting substances called antibodies, which kill the invading bacteria or viruses.

Unfortunately, some parents have become complacent about their children's im-

munizations. They have erroneously presumed that these serious diseases have disappeared or have been eradicated. Some parents are concerned by reports of possible side effects associated with certain vaccines. Despite the accessibility of information on the internet, parents need to be able to distinguish quality health information from inaccurate claims that are not backed by scientific investigation. Anecdotes circling on social media platforms do not trump scientific research findings.

The risks of not receiving immunizations are immense. As a responsible parent, *you need to ensure that your child receives all of the currently recommended vaccines*. Today's vaccines are extensively tested and safe, and they generally produce only mild side effects (such as fever or localized redness at the injection site). Severe adverse reactions are extremely rare. See the vaccine schedule on page 634 for more information.

For maximum effectiveness, immunizations should be administered at specific times to protect those particular ages. Based on recommendations from the Centers for Disease Control and Prevention and the American Academy of Pediatrics, your pediatrician can advise you as to when your child should receive immunizations.

Many of the recommended immunizations are given in the infant and toddler years, prior to starting school. On or after the fourth birthday, prior to entering school, children should receive booster doses of diphtheria, tetanus, and pertussis (DTaP); polio; measles, mumps, and rubella (MMR); and varicella (chicken pox) vaccines. If your school-age child has not received these booster immunizations, they should be given promptly. An additional Tdap (tetanus, diphtheria, and pertussis) booster is recommended at age 10, and then every ten years. At age 11 years, the meningococcal and human papilloma virus (HPV) vaccine series are recommended, with a meningococcal booster at 16 or 17 years.

Because scientific research continues to develop new and improved ways to protect children from serious diseases, immunization guidelines will continue to evolve. Talk with your pediatrician about her recommendations for your child. Here are some of the current recommendations for middle childhood:

- **MMR booster.** Every child should have an initial measles, mumps, and rubella vaccine at 12 months of age, with a second booster dose given at 4 to 6 years of age. In recent years, physicians have become particularly concerned about outbreaks of measles. Measles is the most infectious of the vaccine-preventable diseases, and outbreaks of measles are an unfortunate result of a decrease in immunization rates in a community, putting children, especially infants too young to receive certain vaccines and those who medically cannot receive vaccines (such as a child receiving chemotherapy or who has undergone organ transplantation), at risk.

- **Pneumococcal vaccine.** This vaccine can prevent meningitis and pneumonia caused by *Streptococcus pneumoniae* bacteria. Previously healthy chil-

dren can develop a serious illness from these bacteria. Thanks to the success of this vaccine, research has shown that *Streptococcus pneumoniae* is no longer the most common cause of ear infections and pneumonia. All babies, toddlers, and young children should receive multiple doses of the pneumococcal vaccine that covers thirteen different serotypes (PCV13). Children above the age of 2 years with certain conditions or diseases are more vulnerable and thus should be vaccinated with pneumococcal polysaccharide (PPSV23). These high-risk children include those with chronic lung disease or sickle cell disease, or those who have had their spleens removed (either because of an accident or as part of the treatment for certain illnesses). This pneumococcal inoculation also is advised for children whose immune system is suppressed, either because of cancer treatments or because of medications that have weakened their immunity.

- **Influenza vaccination.** An annual flu shot each fall is recommended for all children above the age of 6 months. Influenza can cause serious illness or even death in previously healthy children. The flu vaccine is especially recommended for those whom an infection by the influenza virus would be particularly severe, including those with heart disease, an impaired immune system, chronic lung disease (including asthma and cystic fibrosis), and abnormalities of hemoglobin, the substance that carries oxygen in the blood. The siblings and parents of these children also should be vaccinated.

- **Chicken pox (varicella) vaccination.** A vaccine to protect against chicken pox is recommended for all healthy children between 12 and 18 months of age who have never had the disease, with a booster dose after the fourth birthday. Certain children are at a higher risk of developing severe problems from varicella infection, including children who are under one year of age, have weak immune systems, have eczema and other skin conditions, or are adolescents. Children over age 13 who have not had varicella (chicken pox) should receive two doses of the vaccine, one month apart.

- **Hepatitis B vaccine.** A vaccine series to prevent hepatitis B is recommended to be given to children during their first year of life. Hepatitis B is a viral illness that affects the liver. Infected children can have no symptoms or a mild illness; however, hepatitis B, especially if long-standing, can progress to severe liver disease and can lead to the development of liver cancer. The virus can be passed from mother to infant at the time of birth or from one household member to another via saliva. It can be spread through contact with infected blood from contaminated needles or contaminated surgical or dental instruments. Teenagers can also contract this disease through sexual intercourse.

Most children in their middle years will have received hepatitis B immunization during infancy. Children who have not been vaccinated may begin the three-dose series during any childhood visit to their pediatrician. Because adolescence is a time of increased risk of contracting hepatitis B, it is important that children are completely immunized by age 13. The second dose is ordinarily given at least one month after the first, and the third dose is administered at least four months after the first dose and at least two months after the second.

- **Human papilloma virus (HPV) vaccine.** HPV is a virus that can cause genital and oral warts in both males and females, and can lead to cervical, oropharyngeal (mouth and pharynx), and other cancers. Many parents wonder why an 11-year-old requires a vaccine that protects against an infection spread by sexual contact; parents should know that research studies have shown that the HPV vaccine gives a much stronger immune boost when given to 11- and 12-year-olds, rather than waiting until after 15 or 16 years of age. Rates of HPV nationally have declined significantly thanks to the success of the vaccine. If this vaccine is given starting at 11 years of age, two doses spaced six months apart are needed. A third dose is needed if the child is over the age of 15 years.

- **Meningococcal vaccine.** An initial dose is recommended at 11 years with a booster at 16 years. This vaccine helps prevent meningitis, an infection of

WHERE WE STAND

The American Academy of Pediatrics believes that the benefits of immunizations far outweigh the risks incurred by childhood diseases, as well as any risks from the vaccines themselves. The AAP believes that immunizations are the safest and most cost-effective way of preventing disease, disability, and death, and it urges parents to ensure that their children are immunized against dangerous childhood diseases in a timely fashion.

The middle school years provide an opportunity to protect against certain infections that can impact the rest of your child's life—for example, the human papilloma virus. Scheduling regular health maintenance visits with your pediatrician ensures that you will learn about the most up-to-date, recommended immunizations to keep your child healthy for decades to come.

the fluid surrounding the brain and spinal cord. Meningococcal disease can be devastating, resulting in permanent disability or death.

- **Hepatitis A vaccine.** Children above the age of 12 months should receive two doses of hepatitis A vaccine spaced six months apart. Hepatitis A is a liver virus that is spread via the fecal-oral route—in other words, by eating contaminated food. Domestic outbreaks can occur with fruit or other produce, and international travelers are strongly recommended to receive this vaccine.

- **Tetanus, diphtheria, and acellular pertussis vaccine (Tdap).** Infants and toddlers receive a different version of this vaccine, and children 10 years and older should receive a dose every ten years. Tetanus causes infection by contaminated soil, most commonly with puncture wounds, and can cause debilitating illness.

Your Child's Teeth

Good oral hygiene is very important. A child in the middle years who ignores the day-to-day care of his teeth—including brushing them at least twice a day and flossing once a day—runs the risk of tooth decay, toothaches, and lost teeth.

Your child may need some help brushing until he is between ages 7 and 10. Even if his intentions are good, he may not have the dexterity to clean his teeth well. You might consider an electric toothbrush for additional motion and keeping a child's interest. Ideally, the teeth should be brushed within five to ten minutes after eating. Also, for long-term dental health, your child needs to care for his gums as well; he should be taught to floss regularly, preferably once a day, in order to help prevent periodontal (gum) disease in adulthood.

A tartar-control toothpaste can help keep plaque from adhering to your child's teeth. Also, fluoride in the toothpaste can strengthen the exposed outer enamel of the child's teeth and help prevent cavities. Fluoride also has been added to the water supply in most cities. If your own tap water has less than the recommended levels of this nutrient, or if your home uses well water, your pediatrician may suggest that you add fluoride to your child's diet beginning at age 6 months, often as part of a vitamin supplement.

Your dentist may also suggest placing sealants on your child's molars. Sealants may need to be reapplied during adolescence. With a combination of sealants and fluoride treatment, the incidence of cavities can be reduced by 90 percent.

Diet can also play a role in healthy teeth. In particular, minimize your child's contact with high-sugar and sticky sweets and other carbohydrates. Gummy-type

fruit snacks, or even gummy vitamins, can get stuck in teeth and contribute to dental decay. Cut back on snacking on sweets between meals, when these foods are more likely to linger in the mouth without brushing.

Make sure your child has dental checkups twice a year for cleaning, as well as for X-rays as recommended by your dentist. Parents may choose to utilize a pediatric dentist, a dentist with special interest and expertise in children's dentistry. Regular preventive appointments will significantly decrease your child's chances of having to undergo major dental treatment. Also, contact your dentist whenever your child complains of a toothache. This pain could be a sign of a decayed tooth. Until the dentist can see your child, treat the pain with acetaminophen by mouth.

Erupting permanent teeth cause the roots of baby teeth to be reabsorbed so that by the time they are loose there is little holding them in place besides a small amount of tissue. Baby teeth ordinarily are shed first at about age 6 when the incisors, the middle teeth in front, become loose. Molars, in the back, are usually shed between ages 10 and 12, and are replaced with permanent teeth by about age 13. Children usually wiggle their teeth loose with their tongues or fingers, eager to hide them under their pillow for the Tooth Fairy. If your child wants you to pull out the already-loose tooth, grasp it firmly with a piece of tissue or gauze and

remove it with a quick twist. Occasionally, if a primary tooth is not loosening sufficiently on its own, your child's dentist may suggest extracting it.

Around the time of puberty, parents begin to worry about whether their child has an adequate bite and whether his teeth are symmetrical. Your dentist is an excellent source of information about whether a consultation with an orthodontist is advisable.

Children ages 5–7 years: Ensure that children brush their teeth morning and evening, ideally after meals. Kids this age brush better when dental care is fun—a reluctant brusher may benefit from an electric toothbrush meant for kids that lights up for the length of time needed to brush. Dental visits every six months are an important aspect of good oral care. Cavities of baby teeth *can* impact later dental health.

Children ages 8–10 years: While more independent, children between 8 and 10 still require parental monitoring and guidance. Ensure your kids have developed a flossing habit; kids' flossers, plastic single-use flossing devices, help small hands maintain this healthy habit.

Children ages 11–12 years: Kids in this age group may require orthodontia, which makes proper oral care all the more important. Your dental and orthodontic teams will have special instructions on how to properly clean orthodontic work. Twice-a-year visits to the dentist continue to be important.

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Nutrition

PROPER NUTRITION IS one of the most important influences on your child's well-being. A varied, balanced diet—containing vitamins, minerals, protein, carbohydrates, and healthy fats—promotes growth, energy, and overall health. Food preferences are developed early in life, mostly during early and middle childhood. The earlier you encourage healthful food choices for your child, the better his lifelong eating habits will be.

From early on, your child learns from your example and watches you for clues to proper food choices. She will copy many of your habits, likes, and dislikes. During the middle years, the model you provide at home will be extremely important in both guiding and reinforcing good eating habits. However, as children begin to spend many hours a day away from home, in school and with friends, a variety of social and other factors influence what and when children eat. As they hurry to catch the school bus in the morning, they may speed through breakfast. For lunch at school—despite schools' efforts to offer healthy choices—your child might choose high-fat or sugar-laden foods that do not contribute to a balanced diet, or pack processed, simple carbohydrate-rich foods from home. If available, they may choose soft drinks rather than milk, or a candy bar instead of fresh fruit.

The most important step a family can take in order to eat healthfully is to prepare simple meals together at home. Cooking at home is well worth the time investment of planning, buying groceries, and actual meal preparation. Families who cook together pass along healthy eating habits to their children. Food cooked at home often has less fat and salt than food from a fast-food drive-through lane or a restaurant. Kids reinforce their math and science lessons from school by cooking, and learn important life skills of meal preparation. By 10, 11, and 12 years of age, children should have more independence in the kitchen and be able to prepare a simple meal or sandwich for themselves.

Monitoring Nutritional Needs

In general, it is the parents' job to determine *what* and *when* the child eats, and the child is in the best position to decide *how much* to eat. Normally, healthy and active children's bodies do a good job of "asking" for just the right amount of food, although their minds may lead them astray when choosing which foods to eat. You can easily overestimate the amount of food your child actually needs, especially during the younger years of middle childhood. Children this age typically do not need adult-size servings of food. It is best to avoid making mealtimes a battleground, as well as avoid any rules about "cleaning" one's dinner plate by eating everything on it. Mealtime should be a pleasant and social time to not only nourish the body but also nurture communication and relationships within the family to reconnect after a busy day of school, work, and activities.

Regular checkups with your pediatrician are one way for you to monitor your child's nutrition. There is rarely a reason for you to count calories for your children, since they tend to control their intake quite well. As the middle years progress, children's total energy needs will increase and thus their food intake will rise, especially as they approach puberty. Between ages 7 and 10, both boys and girls consume about 1,600 to 2,400 calories per day, although caloric needs obviously vary considerably even under normal circumstances. Most girls experience a significant increase in their growth rate between ages 10 and 12 and will take in about 200 calories more each day, while boys go through their growth spurt about two years later and increase their food intake by nearly 500 calories a day. During this time of rapid growth, they will probably require more total calories and nutrients than at any other period in their lives—from calcium (to encourage bone growth) to protein (to build body tissue).

Appetites can vary, even from day to day, depending on factors such as that day's activity level. Every child's caloric needs are different. A child also may go through what some call "food jags" where one day she eats more protein and another day is focused on fruits, for example. One meal or one day may not be nutritionally complete, but the week as a whole may still have good representation

from a variety of food groups. Sweets and higher-fat choices should not be forbidden; rather, they should be a special "once-in-a-while" treat, served in moderation using appropriate portion sizes.

Picky Eaters

Some children simply do not eat as much as their peers. Their appetite may not be as large, or they may be selective or "finicky" eaters, unwilling to even taste certain types of foods. Appetites may fluctuate as your child grows. Even within the same family, brothers and sisters may vary considerably in the amounts and types of food they desire. Generally, children increase their food consumption considerably as they enter the growth spurts associated with puberty; until then, however, a child's appetite may be unpredictable.

Some children are less open to trying new foods than others. Most important is exposing your children to a variety of tastes and flavors from a young age. If the family is having a certain meal for dinner, that should serve as the main meal. Avoid the temptation to be a short-order cook and prepare a separate meal for your selective eater, as this perpetuates the picky eater cycle. Try introducing new foods as part of familiar foods that your child already enjoys. Look at cookbooks together, grocery shop together, and involve your child in the meal preparation process. Many kids end up nibbling on vegetables as they are being prepped for the main meal. Children who participate in the cooking process in an age-appropriate way are more likely to try new foods. By letting kids work in the kitchen, smelling and tasting new foods, you can help kids feel more comfortable trying new foods, which can help build healthy habits and teach them to make healthier food choices too.

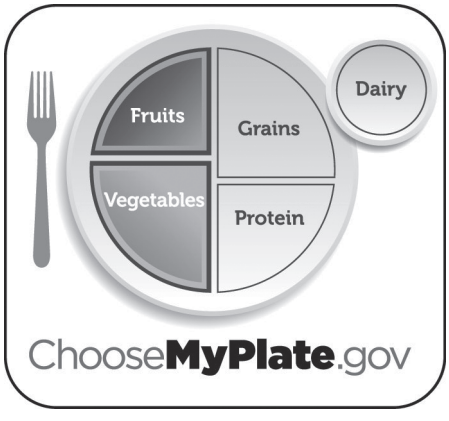
Avoid rewards or strong, coercive encouragement for trying something new. If you introduce foods in a confrontational way, you and your child may become caught up in a battle, and your child will likely resist these foods even more as a way of asserting her independence. Offering rewards for particular foods may give your child the impression that the food would otherwise be undesirable.

As frustrating as your child's picky eating habits may be, keep in mind that you, too, may have foods you like and dislike. It is important for parents to remain calm at mealtimes, as drama at the dinner table will only perpetuate the problem. A daily multivitamin may put some of your fears to rest and help you relax and enjoy mealtimes more, which will help your child feel comfortable experimenting with new foods.

Healthy Food Choices

Variety and Portions

Your child should consume a variety of fruits and vegetables, grains, proteins, and dairy. Each food group supplies important nutrients, including vitamins and minerals. The USDA has replaced the former "food pyramid" format with the Choose My Plate format (ChooseMyPlate.gov; see graphic below), which visually shows the ideal distribution and portions of foods for a typical meal, representing all five food groups. Half of the plate should consist of fruits and vegetables, a quarter should be protein, a quarter should be grains (preferably whole grains), and a side of dairy rounds out the meal.



Teach your child the importance of eating a variety of foods from the five major food groups, in appropriate portion sizes.

- **Vegetables:** 3–5 servings per day. A serving may consist of 1 cup of raw leafy vegetables or ½ cup of other vegetables, raw or cooked.
- **Fruits:** 2–4 servings per day. A serving may consist of ½ cup of sliced fruit or a medium-size whole fruit, such as an apple, banana, or pear.
- **Bread, cereal, or pasta:** 2–3 servings per day. Aim for whole grains whenever possible for the added fiber. Each serving should equal 1 slice of bread, ½ cup of rice or pasta, or 1 ounce of cereal.
- **Proteins:** 2–3 servings of 2–3 ounces of cooked lean meat, poultry, or fish per day. A serving in this group may also consist of ½ cup of cooked beans or 1 egg.

- **Dairy products:** 2–3 servings per day of 1 cup of low-fat milk or yogurt, or 1½ ounces of cheese.

- **Water:** Proper hydration is important! Often thirst can mimic the feeling of hunger. Ensure kids are drinking plenty of water throughout the day, regardless of the season or activity levels. School-age kids should bring refillable water bottles to school and sip throughout the day. Many schools have installed automatic water bottle fillers similar to those found in airports.

Fiber

Fiber is a carbohydrate component of plant foods that is usually indigestible. It is found in foods like fruits, vegetables, whole-grain breads, cereals, brown rice, beans, seeds, and nuts. A diet high in fiber has been linked with a reduction of chronic gastrointestinal problems, including colon cancer, irritable bowel syndrome, and diverticulitis. Fiber also helps ease constipation—providing bulk that can promote regular frequency of bowel movements, soften the stools, and decrease the time it takes food to travel through the intestines.

Protein

Your child requires protein for the proper growth and functioning of his body, including building new tissues and producing antibodies that help battle infections. Without essential amino acids (the building blocks of protein), children would be much more susceptible to serious diseases. Protein-rich plants—such as dried beans and peas (legumes), grains, seeds, and nuts—can be used as valuable sources of protein. Other protein-rich foods include meat, fish, milk, yogurt, cheese, and eggs. These animal products contain high-quality protein and a full array of amino acids.

Bear in mind, however, that red meat and shellfish not only are rich in protein and an important source of iron but are higher in fat and cholesterol as well. Thus, your child should consume them only in moderate amounts. Select lean cuts of meat and trim the fat before cooking. Likewise, remove skin from poultry and excess fat from fish before serving.

Healthy Fats

Dietary fats are a concentrated source of energy, providing essential fatty acids that are necessary for a variety of bodily processes such as metabolism, blood clotting, and vitamin absorption. However, high fat intake—particularly a diet

Healthy Family Eating Habits

Family eating habits determine what your child will learn to eat and enjoy.

- Keep fresh fruits and vegetables readily available. Parents can maintain a stocked fruit bowl in the kitchen with apples, bananas, and oranges in sight as a visual reminder, ready for snacking. Clementines are easy for school-age kids to peel independently. Grapes, washed and ready to eat, are another example of a healthy grab-and-go snack. Kids can enjoy fruit and vegetable snacks freely through the day without limitations.
- Serve whole-grain bread and cereals.
- Skim or 1 percent milk is preferable to 2 percent or whole milk.
- Limit high-calorie toppings that do not provide additional nutritive value, including butter, sour cream, and gravy.
- Serve lean meats, such as chicken, turkey, fish, lean beef cuts (lean hamburger, top loin, top round, eye of round), and lean pork cuts (tenderloin, loin, chops, ham). Cut away visible fat and remove the skin from poultry.
- Choose frozen fruit bars, angel food cake, or frozen yogurt instead of richer, creamier desserts.
- When cooking, use nonstick vegetable sprays to cut down on added fat.
- Baking, broiling, poaching, grilling, and steaming are good methods of preparing meat, fish, and poultry. Limit the use of extra butter and oils when preparing or serving vegetables.
- Serve vegetable-based and broth-based soups. Choose low-fat milk when making cream soups.

high in *saturated* fats—can cause problems. Saturated fats are usually solid at room temperature and are found in fatty meats (such as beef, pork, ham, veal, and lamb) and many dairy products (whole milk, cheese, and ice cream). They can contribute to the buildup of atherosclerotic plaques in blood vessels and lead to coronary artery disease later in life. A diet rich in saturated fats also can increase blood cholesterol, particularly in people who have inherited a tendency toward high cholesterol levels.

As a general guideline, fats should make up less than 30 percent of the calories in your child's diet, with no more than about one-third of those fat calories coming from saturated fat and the remainder from unsaturated (that is, polyunsaturated or monounsaturated) fats. Oils and fats derived from animal origin are saturated. Avocados and almonds are a good source of heart-healthy monounsaturated fats.

Sugar

Sugar serves an important function for our bodies as the fuel to provide energy for our bodily processes and daily activities. Sugar includes not only the simple table sugars that most of us think of when we hear the word "sugar," but also honey, molasses, and high fructose corn syrup. Sugar naturally occurs in produce, most notably in fruit and berries (where it accounts for the sweet taste) but also in vegetables and milk. Most of us, kids included, prefer the sweet taste of sugar, and modern diets arguably contain too much sugar. Unfortunately, many processed foods, including snack bars and convenience packets of instant oatmeal, include a surprising amount of sugar.

The problem with excessive daily sugar intake is that the excess of calories from sugar can contribute to weight gain, obesity, and a pre-diabetic state (a beginning stage of diabetes; for more on type 2 diabetes, see page 589). Often a diet with excessive sugar is also lacking in other nutrients such as whole grains. How to limit daily sugar intake? A simple step is to avoid juice and soft drinks on a regular basis by limiting their availability to special occasions. Portion control is also smart: when having an ice cream treat, for example, prepare smaller serving sizes by using smaller bowls. Often we are surprised when reading a product's nutrition label by what is considered a true "single serving" amount.

Salt

Researchers have found a relationship between dietary salt and high blood pressure in some individuals and population groups. High blood pressure can contribute to heart attacks and strokes in older adults. The habit of using extra salt is an

acquired one. As much as possible, serve your child foods low in salt. In the kitchen, minimize the amount of salt you add to food during its preparation, using herbs, spices, or lemon juice instead. Also, take the salt shaker off the dinner table, or at least limit its use by your family.

Because of the preservative properties of salt, processed foods and fast foods often contain large amounts of it. Salt-rich foods may include processed cheese, instant puddings, canned vegetables, canned soups, hot dogs, cottage cheese, salad dressings, pickles, certain breakfast cereals and snack bars, potato chips, and other snacks.

Vitamin Supplements

Vitamins and minerals are important elements of your child's nutritional requirements. Because the human body itself is unable to produce adequate amounts of many vitamins, they must be obtained from the diet. The body needs these vitamins in only tiny amounts, and in a balanced diet they are usually present in sufficient quantities in the foods your child eats. For these reasons, supplements are rarely needed in middle childhood.

For some children, however, pediatricians may recommend a daily supplement. If your child has a poor appetite or erratic eating habits, or if she consumes a selective diet such as a vegan diet containing no dairy products, a vitamin supplement should be considered. Chewable tablets are available for children who have difficulty swallowing pills. Gummy vitamins can contribute to tooth decay; if these are used, make sure your child brushes her teeth afterward. A daily multivitamin can also help parents feel more relaxed at mealtimes, which will in turn help kids feel more comfortable about trying new foods.

Over-the-counter supplements are generally safe; nonetheless, they are drugs. If

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The American Academy of Pediatrics believes that healthy children receiving a normal, well-balanced diet do not need vitamin supplementation over and above the recommended dietary allowances. Megadoses of vitamins—for example, large amounts of vitamins A, C, or D—can produce toxic symptoms, ranging from nausea and rashes to headaches, and sometimes to even more severe adverse effects. Talk with your pediatrician before giving vitamin supplements to your child.

taken in excessive amounts (in tablets, capsules, or combined with other supplements), some supplements—particularly the fat-soluble vitamins (A, D, E, and K)—can be toxic. Always consult your pediatrician before giving your child supplements. And don't leave a bottle of vitamins on the table as though they were a condiment like salt or pepper; taking vitamins should be done with careful consideration.

Vitamins and minerals found in actual food are more bioavailable to your child's body than those found in a supplement, meaning that it is easier for the body to utilize them. As much as possible, maximize the vitamins your child receives in her regular meals.

Vitamin A promotes normal growth, healthy skin, and tissue repair, and aids in night and color vision. Rich sources include yellow vegetables, dairy products, and liver.

B vitamins promote red blood cell formation and assist in a variety of metabolic activities. They are found in meat, poultry, fish, soybeans, milk, eggs, whole grains, and enriched breads and cereals.

Vitamin C strengthens connective tissue, muscles, and skin, hastens the healing of wounds and bones, and increases resistance to infection. Vitamin C is found in citrus fruits, strawberries, tomatoes, potatoes, Brussels sprouts, spinach, and broccoli.

Vitamin D promotes tooth and bone formation and regulates the absorption of minerals like calcium. Sources include fortified dairy products, fortified orange juice, fish oils, and egg yolks. Sunlight also contributes to dietary sources of vitamin D, stimulating the conversion of a naturally occurring compound in the skin to an active form of the vitamin; however, the risks of sunlight exposure leading to skin cancer outweigh the benefits, so obtaining vitamin D from the diet or vitamin supplementation is the best course of action.

Especially during periods of rapid growth, **iron** is essential for the production of blood and the building of muscles. When iron levels are low, your child may demonstrate symptoms such as irritability, listlessness, depression, and an increased susceptibility to infection. However, a deficiency of iron is much more common in adolescence than in middle childhood. Once girls begin menstruation, they need much more iron than boys do. The best sources of iron include beef, turkey, pork, and liver. Beans and prunes also contain modest amounts of iron. Some cereals and flour are enriched with iron.

As your child matures, **calcium** is necessary for healthy bone development. An inadequate calcium intake during childhood can not only affect present growth but could also contribute to the development of weakened and porous bones (osteoporosis) later in life. Low-fat milk, cheese, yogurt, and sardines are excellent sources of calcium. Some vegetables, such as broccoli, also contain modest amounts of calcium.

Age-Appropriate Kitchen Tasks

There is no better way to get your kids involved in family mealtimes than including them in food preparation. Research shows that kids who regularly eat meals with their family develop good communication skills, are less likely to abuse alcohol and illicit drugs, get better grades in school, and are less likely to be obese. Increased involvement in kitchen preparation is all about baby steps; Rome wasn't built in a day, and kids need to develop cooking skills with smaller tasks at younger ages. In the short term, involving children in meal preparation may seem like *more* work, to clean up the inevitable spills and messes. Teach your kids to clean as they go, though, and over the years their skills will develop and will be more than worth the investment of initiating cooking skills from an early age.

When it comes to kids and kitchen skills, every child is different. While some kids may be able to progress more quickly, consider your individual child's development and maturity to determine the most appropriate tasks and steps.

Children ages 5–7 years: Can you say salad? Kids in this age range can help tear lettuce for salads, mix salad dressing, toss the salad, and set the table. Children in early elementary school grades can wash fruits and vegetables, pick herb leaves off stems, use a salad spinner, and use a citrus juicer for lemons, oranges, and limes. Whisking, stirring, kneading, mashing, rolling with a rolling pin, and spreading glaze with a pastry brush are all fun for kids this age. Kids can sprinkle salt, use a pepper grinder, and break eggs with adult help. Kids this age generally are not ready for true knife usage; some families allow kids this age to use a plastic knife instead, which can get the job done safely.

Children ages 8–10 years: Most children in this age group can perform the above tasks in addition to new tasks, such as measuring ingredients with measuring spoons and cups, and can learn the difference between measuring wet and dry ingredients. With close adult supervision, kids can learn beginner knife skills to slice bread, chop vegetables, and slice fruits, as well as grate and peel produce. A rolling pizza cutter is a great idea to help younger kids learn easy cutting; if you have multiple kids, consider buying more than one for simultaneous use. Kids can help pound chicken layered in plastic wrap. Kids this age should learn the importance of keeping raw meats and poultry separated from produce (e.g., using separate

cutting boards) as a way of minimizing bacterial risks and food poisoning. Kids this age can slice and scoop avocado, grate cheese, form patties and evenly sized cookies, use a can opener (a no-sharp-edges can opener is much safer), and scoop batter into muffin tins.

Children ages 11–12 years: Older children can and should have increased responsibilities in the kitchen, including all the above tasks as well as mastering new tasks. The goal for this age group is to advance kitchen skills to the point of working independently (with an adult present nearby who can assist in case of emergency). Good beginner stovetop preparation skills include making simple dishes such as grilled cheese sandwiches and scrambled eggs. Before increasing a child's independence, ensure your child has good stovetop and oven safety techniques (e.g., turns pot handles toward the back of the stovetop to avoid spills), has appropriate knife safety skills, and unplugs electrical appliances when not in use. One of the final kitchen tasks to learn is how to drain a pot of cooked pasta in the sink, being mindful of the burn risks of steam; this step should be modeled and assisted for quite some time before independence.

Reading Food Labels

When grocery shopping, shopping the perimeter of the store is a way to eat healthfully. The perimeter or outside edges of the store is where fresh produce, meats, and dairy are kept; the center aisles are reserved for the prepackaged, processed foods. The best foods to eat—for example, fresh apples—do not require a label with nutritional information on them.

Read product labels to learn the amounts of fat, cholesterol, sodium, vitamins, and minerals, and the percentage of calories from fat. Pay close attention to portion sizes, which can sometimes cause confusion. For example, breakfast cereal packages often provide the nutritional content of the cereal when combined with half a cup of milk; thus, the serving may seem nutritious due to the addition of milk, even though the cereal itself provides little nutritional value. Keep in mind that because these listed portion sizes are arbitrary, they may not be equivalent to the portions actually consumed by your own family. When comparing different products, make sure the portion sizes on the labels are equal, or do some quick refiguring of your own.

Encourage children to choose healthy snacks (especially fruits and vegetables).

Choosing Healthy Snacks

Many children arrive home from school and head straight to the refrigerator for a snack. Thirst can often feel similar to hunger, so a glass of water is a great first step when returning home after school or activities; drinking water will help curb an excessive appetite. Healthy snacks round out kids' nutritional requirements and provide as much as one-fourth of their calories. In general, occasional snacks will not ruin appetites for regular meals, as long as the snack is not eaten shortly before they sit down to lunch or dinner. Snacks are another opportunity for parents to provide healthy food choices to their children while reinforcing good eating habits—learning to get hungry, rather than eating to feel full all the time.

"Snacks" should not mean only processed, packaged foods; think of them as mini meals with similar nutrient portions as a regular meal. Remember that what is brought home from the grocery store is what will get eaten; if you feel your child excessively prefers a particular processed snack, leave it off your shopping list for a while. There is a difference between special once-in-a-while foods and routine healthy snack options. When snacking, children often reach for the closest

Healthy Snacks for Any Mood

Your child's snacking moods may vary, but he can still consistently maintain healthy snacking habits. Encourage plenty of water throughout the day. For instance, if his snacking mood is:

Thirsty: Water! All of us, kids and adults alike, should drink more water. Other good hydration choices include cold skim or low-fat milk, or water with lemon.

Smooth: Yogurt, banana, papaya, mango, cottage cheese, or a fruit smoothie. For an easy fruit smoothie, blend 1 cup of skim milk, three ice cubes, your favorite fresh fruit, and a dash of vanilla or honey, cinnamon, and nutmeg in a blender.

Crunchy: Raw vegetables (asparagus, bell pepper, broccoli, cabbage, carrots, cauliflower, celery, zucchini), apples, corn on the cob, unbuttered popcorn, puffed-rice cakes, or wheat crackers.

Juicy: Fresh fruit (berries, cantaloupe, grapes, grapefruit, kiwi, nectarine, orange, peach, plum, watermelon, tomato, pear) or frozen juice pops.

Fun: Fruit, frozen grapes, frozen bananas, fruit kabobs.

Really hungry: Hard-boiled eggs, granola, oatmeal, sandwich, cereal with milk, bran muffin, peanut butter or soy nut butter on crackers or bread, nuts, cheese.

convenient food at hand. If your cupboard has cookies in it, that is probably what your child will eat. However, if there are healthier items in the refrigerator or on the kitchen table, your child will become accustomed to snacking on these foods instead. The healthiest and simplest choices are fruits and raw vegetables that require little if any preparation. Encourage your child to make healthy snacks a habit by keeping fruit and cut vegetables (carrots, cucumbers, celery, peppers, broccoli) washed, prepped, and handy. Kids enjoy helping with these preparation steps; for more information on this, see the box above.

Children in the older range of the middle years (10, 11, 12 years) also can learn

some simple cooking techniques. As they prepare snacks for themselves, you can teach them to differentiate between more and less healthy choices. However, be sure they learn appropriate safety precautions for the use of a stove, oven, microwave, or other cooking appliance. For more on age-appropriate kitchen tasks, see the box on pages 28–29.

Cooking with Your Children

One of the best ways to familiarize your child with good food choices is to encourage her to cook with you. Let her get involved in the entire process, from planning the menus to shopping for ingredients to the actual food preparation and its serving.

Particularly in her first few efforts at helping in the kitchen, let her select recipes that she and other family members have enjoyed in the past, so she can see what's involved in preparing them. For more on age-appropriate kitchen tasks, see the box on pages 28–29.

In assigning tasks to your child, keep in mind that they need to be age-appropriate. For instance, you wouldn't give a 6-year-old a sharp knife to chop vegetables, although she can certainly wash the lettuce. Nor would you let her remove a hot, heavy casserole pot from the oven, although she can carefully open the oven door for you. Here are some other guidelines to keep in mind:

- Make certain that you or another adult is in the kitchen at all times when your child is helping out.
- When your child pares vegetables, show her how to point sharp edges away from her to avoid accidents.
- Explain how she should weigh and measure ingredients.
- When cooking on the stovetop, make sure that pot handles are turned inward so children can't accidentally knock them off the stove.
- Teach your child the importance of using oven mitts or potholders when touching hot saucepans and other items.
- Shut off the oven and stovetop burners when you're finished cooking.

Cooking at Home Compared to Eating Out

Between work, school, activities, and more, families are busy and cannot always cook at home. Unfortunately, traditional, fast-casual, and fast-food restaurant meals tend to be relatively high in calories, salt, and total fat. Meals prepared at home are typically the healthier option.

Families can use time-saving strategies to prepare meals at home despite a hectic family schedule. Batch meal prep on the weekend is one idea: prepare more than one meal so that it is ready for the hectic weekday. Slow cookers are a useful tool: put ingredients together in the morning and have a prepared meal ready later in the evening. Adding fresh ingredients at the end of the cooking process can liven up a slow cooker meal. Alternatively, pressure cookers can cook meals in a fraction of the time of traditional cooking methods. Use the internet or cookbooks from your public library for new meal ideas to add into your family rotation, and share the cookbooks with your kids for additional inspiration and suggestions.

Children learn most from watching the adults in their world and how they lead by example. Parents should model and encourage healthy eating habits that a child can maintain for decades to come. Practice balance, variety, and moderation in your own and your family's diet, and your children are likely to follow suit.

~ 3 ~

Healthy Nutrition and Specific Considerations

Childhood Obesity: An Epidemic

Studies show that today's children tend to be heavier than their counterparts were a generation ago, and that over 15 percent of America's school-age children are now overweight. Obesity can contribute to physical problems such as high blood pressure and diabetes, limit a child's athletic abilities, and impair self-esteem.

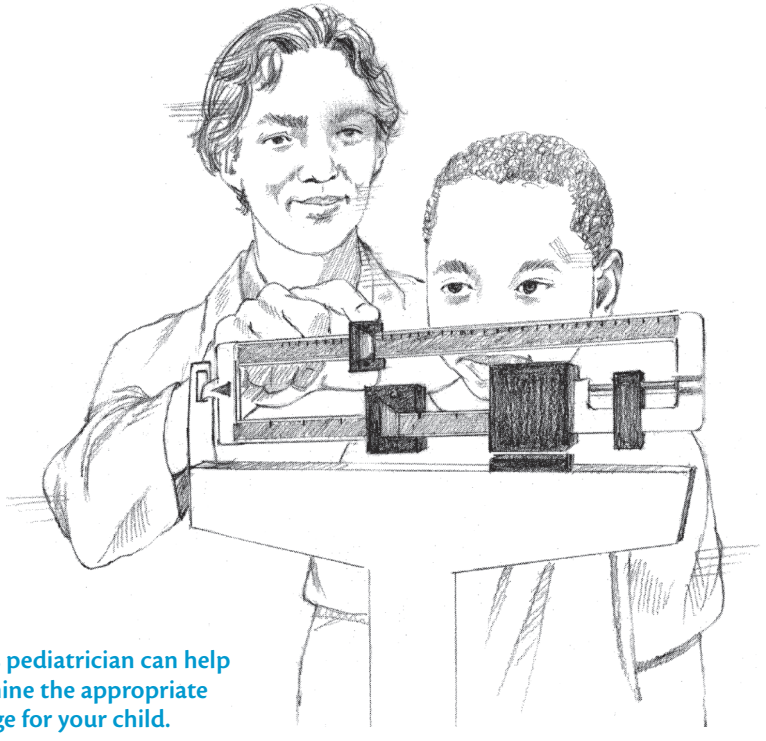
The Body Mass Index (BMI) is a helpful tool to monitor your child's weight at annual visits with the pediatrician. It is a number calculated using the child's weight and height. HealthyChildren.org, the parenting website of the American Academy of Pediatrics, has a BMI calculator available for parents. Growth charts and BMI tell only part of the story because neither method directly measures a child's body fat. That said, subtle shifts and increases in the BMI over the childhood years can indicate that adjustments need to be made in both a child's level of daily activity and her diet. A healthy BMI varies by age; in general, if your child's BMI is less than the 5th percentile or greater than the 85th percentile, your pediatrician will want to discuss this with your family. Generally speaking, a BMI above the 85th percentile means the child is overweight. At times, however, some children who are ath-

letic or muscular may have a higher BMI without having excess fat. Most children with a BMI above the 95th percentile have an excess amount of body fat, however.

What is a reasonable approach to maintain a healthy weight and BMI, or tackle a rising BMI? First, you need to determine if your child is overweight. Talk with your pediatrician, who will consult growth charts to determine the most appropriate target weight range for your child. This ideal range will depend on a number of factors, including your child's sex, age, height, and body build.

Children tend to gain weight at a fairly steady rate through the middle years, with an increase in weight gain and growth during and just prior to puberty. Parents and their children should not become alarmed by this increase in weight. Usually the goal is not necessarily to *lose* weight; rather, it is to *maintain* weight as the child's height increases.

Various factors can influence the likelihood of a child's becoming overweight. A child who is physically inactive is more likely to have a weight problem. Too much screen time (videogames, time spent online social networking, television, etc.) means more time the child is sedentary and less time he is running, playing, and moving muscles (for more information on media use, see page 315). Family genetics play a role as well, and if your family's meals tend to emphasize high-calorie foods, that can cause excess weight gain. Although certain metabolic and



Your child's pediatrician can help you determine the appropriate weight range for your child.

endocrine disorders may contribute to obesity, they are the cause in only about 5 percent of obese children.

Stress can also play a role in some overweight problems. Children often have little control over their lives, and thus have fewer options with which to respond to emotional peaks and valleys. They may be prone to changing the way they eat as their moods and behavior change—for instance, when they are bored, anxious, or depressed.

If your child's BMI is increasing each year, do not ignore the problem. A sedentary lifetime of poor eating habits can increase your child's chances of developing serious diseases that could shorten his life span. Together, you and your child should set realistic goals. In middle childhood, actual weight loss may not be an appropriate objective for many overweight children. The goals you agree upon should not be principally about weight, but rather about *healthy living*—eating appropriate amounts and kinds of food, exercising, and dealing with personal and social factors that encourage poor lifestyle habits. Working together as a family is a great idea. A team approach to more physical movement and improved food choices, as well as agreeing to limit the availability of juice, soda, and other "treat" foods, helps all family members improve their health. Kids always learn best by having a good example set for them.

As part of a comprehensive program, your pediatrician may suggest the *maintenance* of current weight, keeping your child's weight at its present level while he continues to grow in height, thus causing him to slim down. However, for children who are more than 40 percent overweight for their age, sex, and height, your doctor may recommend a comprehensive plan, including dietary changes aimed at small increments of weight loss. Obese children should avoid fad diets and instead consume a variety of foods relatively low in calories but high in nutritional value. Foods like vegetables, fruits, fish, and poultry fit this description. While you can limit portion sizes, do not severely restrict your child's caloric intake or you may run the risk of impeding normal growth.

Support your child by modeling your own good eating habits. Ensure that the foods brought home from the grocery store are healthy options. Cook low-calorie meals for the entire family. You cannot expect your child to successfully change his eating and exercise habits on his own, particularly if others in the household are not setting good examples. Your goal should be to help him learn and adopt healthier *lifetime* eating habits that can keep his weight permanently under control.

A key step in maintaining a healthy BMI is for your child and entire family to become more physically active. The best step of all is to increase time spent simply playing outdoors. Regular exercise can play an important role in the maintenance of a healthy weight over the long term. You can become a good role model for physical activity, even involving your child in your own exercise program, perhaps bicycling, swimming, or brisk walking as a family. Encourage your child to

exercise, knowing that as he becomes more physically fit, his overall sense of well-being and his feelings of self-worth are likely to improve.

Physical activity and movement should be *fun* for school-age kids. Formal youth sports programs can be a great source of exercise; however, for most kids, more free time playing outdoors will do the trick. Do not feel the need to invest financially in sports teams; family walks after meals, limiting screen time (no screen time until all homework is completed and time spent playing outside), and setting a timer on screens, television, or other media use are good strategies families should employ.

Families can even make increasing daily movement a friendly competition; there are many low-cost pedometers available, and family members can "compete" to see who can track the most activity each day. Keeping activity *fun* is a key step to nurturing physical fitness as a lifetime healthy habit, not just a temporary measure.

What About a Formal Weight Loss Program?

Many community hospitals and specialized clinics offer formal weight loss programs for children. For some obese children, these programs may be worth considering. The best candidates are children who are at least 30 to 40 percent overweight and who are in basically good health, without any significant physical or psychological problems. Families must be willing to provide support and help their offspring implement and follow through on the eating and exercise plans that are recommended.

When you're evaluating a particular weight loss program, keep in mind that the most effective ones tend to be those that help children adopt long-term, lifestyle-based behavioral strategies. Doing so in a group setting not only provides support but helps your child develop her social skills too. These programs also should help a child increase her physical activity.

As children enter a program, they should be assessed by a variety of health professionals. The best weight loss programs include one or more registered dietitians or qualified nutritionists, exercise physiologists, pediatricians or family physicians, and psychiatrists or psychologists. A pediatrician should document that the child has sufficient excess weight to warrant her participation and to confirm that she has no significant underlying health problems. A nutritionist or registered dietitian should determine what the child's nutritional habits are and create a personalized eating plan. A psychologist or other mental health professional should evaluate your child to identify any existing psychological difficulties, as well as to determine whether family problems may be interfering with the child's efforts at weight control.

Once your child begins participation in a formal weight loss program, her

success will require you to make certain aspects of the program part of your family's day-to-day life—from making sensible food choices to encouraging the entire family to become more physically active together. Also, with guidance from the program's staff, encourage your child to set reasonable, short-term (week-by-week) goals that she has a high likelihood of achieving. Changes in eating and exercising—and the accompanying improvements in weight—should be slow and gradual.

Rewards (ideally not money or material items, but rather experiences) should

Elements of a Weight Control Program

Here are some sensible guidelines for healthy weight management:

- Have your child participate in daily vigorous physical activity, sufficient to increase his heart rate and make him sweat. Free time spent playing outdoors is best. It does not need to be a specific amount of continuous time; ten-minute bursts sprinkled through the day can actually be an easier goal to set and maintain. He can try fast walking, jogging, bicycling, and skating. Team sports are fun, but not all team sports are vigorous enough to be sufficient alone for weight management.
- Monitor your child's diet by writing down what he eats and drinks. Review this record together each day, and find foods that he could eliminate by substituting healthier choices. Add more vegetables and fiber to his diet, and use fruits as desserts rather than cake, pie, cookies, pudding, and ice cream. Watch the portion size of each serving, and avoid second helpings.
- Support your child's efforts by eliminating undesirable foods from the household. "Cleaning up" the food environment is critical. Keeping high-calorie foods in the house for special occasions or for other family members is cruel and will undermine the child's efforts.
- As a parent, positive praise goes a lot further than negative reinforcement. You are not the "food police," and thus you should not remind, nag, or scold your child. If you yourself practice healthier habits and keep undesirable foods out of the house, it will make it easier for the entire family to do together.

be given immediately upon achieving the goals rather than setting them off in the distance (such as a visit to the amusement park next month, or a trip next summer). The best rewards are those that provide the child with additional, enjoyable times with the family, such as outings and sports activities.

High Blood Cholesterol Levels

Atherosclerosis (fatty plaque formation and hardening of the arteries) has initial stages in childhood that progress as a child grows into adulthood. The physiological processes that cause plaques to form on the walls of the arteries, clogging the arteries and thus interfering with blood flow, begin in childhood. Blood cholesterol levels may be one indicator of this ongoing disease process.

High levels of total cholesterol and of low-density lipoprotein (LDL or "bad") cholesterol are associated with a higher risk of atherosclerosis. *Low* levels of high-density lipoprotein (HDL or "good") cholesterol are also associated with developing atherosclerosis, while having increased amounts of this HDL cholesterol is protective. Though high blood levels of LDLs promote the deposit of cholesterol and other fatty substances in the walls of the arteries, HDLs act as scavengers in the bloodstream, removing the cholesterol that could damage the arteries.

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The American Academy of Pediatrics recommends that all children between 9 and 11 years old be screened for high blood cholesterol levels. Other children may also need cholesterol testing during the school years:

- Children whose parents have had a heart attack by their 50s
- Children whose families have high cholesterol
- Children whose family history is not known
- Children who show signs of heart disease such as obesity or high blood pressure

Cholesterol Levels in Children and Adolescents		
Classification	**Total Cholesterol[a]**	**Low-Density Lipoprotein[a]**
Acceptable	< 170	< 110
Borderline	170–199	110–129
High	> 200	> 130
[a] Milligrams per 100 ml of blood		

The treatment of high cholesterol depends on if it is inherited from the family or is due to lifestyle patterns such as diet and exercise. Detecting cholesterol issues early is important to begin treatment and minimize the chances of long-term problems.

Food Allergies

For information about living with food allergies, see page 484.

Vegetarians and Vegans

In recent years, vegetarianism has grown in popularity for both nutritional and ethical reasons. Vegetarian diets tend to be high in fiber and polyunsaturated fat, and low in cholesterol and calories. If your family or child is following a vegetarian diet, you need to guard against nutritional deficiencies. There are various degrees of vegetarianism, and the strictness of the diet will determine whether your child is vulnerable to nutritional shortcomings.

Following are the common categories of vegetarians. Although none eat meat, poultry, or fish, there are other areas in which they vary:

- **Lacto-ovo-vegetarians** consume eggs, dairy products, and plant foods.
- **Lacto-vegetarians** eat dairy products and plant foods but not eggs.
- **Vegans** eat only plant foods, no eggs or dairy products.

Children can be well nourished on all three types of vegetarian diet, but nutritional balance is difficult to achieve if dairy products and eggs are completely eliminated. Vegetarians sometimes consume insufficient amounts of calcium and vitamin D if they remove milk products from their diet. Because of the lack of meat products, vegetarians sometimes have an inadequate iron intake. They may also consume insufficient amounts of vitamin B_{12}, zinc, and other minerals. If their caloric intake is also extremely low, this could cause a delay in normal growth and weight gain.

Vegetarians may also lack adequate protein sources. As a result, you need to ensure that your child receives a good balance of essential amino acids. As a general guideline, his protein intake should come from more than one source, combining cereal products (wheat, rice) with legumes (dry beans, soybeans, peas), for example; when eaten together, they provide a higher quality mixture of amino acids than if either is consumed alone.

Other planning may be necessary. To ensure adequate levels of vitamin B_{12}, you might serve your child commercially prepared foods fortified with this vitamin. While calcium is present in some vegetables, your child may still need a calcium supplement if he does not consume milk and other dairy products. Alternative sources of vitamin D might also be advisable if there is no milk in the diet. Your pediatrician may recommend iron supplements, too, although your child can improve his absorption of the iron in vegetables by drinking citrus juice at mealtime.

Nutrition and Sports

Even in middle childhood some kids who participate in competitive sports are looking for an edge that might make them run a little faster or throw a little harder. Often they will turn to nutrition for help. However, there is no magical food or supplement that can transform an average athlete into a superstar. No matter what age your child is, optimal performance depends more on a balanced diet, sufficient nutrients to meet the demands of physical activity, and adequate rest. Sports activities may require increases in:

- **Caloric (energy) intake.** Without adequate calories your child may feel weak and fatigued, and her athletic performance may suffer. To raise caloric consumption, your child should rely primarily upon carbohydrates (potatoes, rice, pasta, beans, bread), which are excellent sources of energy during exercise.

- **Protein intake.** The protein needs of an athlete may be only a little higher than those of a more sedentary individual. Even so, some evidence suggests

that a small increase in protein, in conjunction with exercise, may be important when trying to increase muscle mass and lean tissue. Often, simply by increasing caloric intake in a well-balanced diet, a child will obtain any additional protein she may require. In general, protein supplementation is discouraged for children, as it may burden a growing child's kidneys.

- **Fluid intake.** During exercise, you perspire and can lose fluid that must be replaced to prevent dehydration and overheating. Children should drink plenty of water before exercising, and then drink again every ten to twenty minutes during exercise itself, even if they are not thirsty. This is particularly important when exercising in hot weather.

  Fluid intake needs can vary widely from child to child, based on his or her body size, level of physical activity, and the weather. These requirements generally range from 1½ to 3 quarts per day of fluid; your child should drink an extra 8 to 12 ounces of water for every half hour of strenuous physical activity.

Thanks to persuasive advertising, many children and coaches believe that commercially prepared electrolyte or sports drinks have some advantages over water. These drinks do provide some replacement for the salts and sugars that are lost with vigorous exercise. However, they may be high in sugar, which can sometimes cause cramps, nausea, and diarrhea. Water is usually the best choice.

If your child is involved in a sport where his weight is important—perhaps wrestling or gymnastics—he might be drawn to unhealthy weight management strategies, perhaps adopting a crash diet, taking laxatives, or consuming special supplements. Wrestlers, for example, in an attempt to "make weight," may be tempted to fast, which is potentially harmful. You might choose to consult your child's pediatrician or a registered dietitian to evaluate the adequacy of your child's diet. The doctor will probably advise against rapid reduction in body weight.