Third Edition

Pediatrics

Edited by
Mohsen Ziai, M.D.

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To the memory of my great mentors,
Mohammad Gharib, M.D., and Charles A. Janeway, M.D.,
two legendary clinicians and educators

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Preface

Recent advances have necessitated substantial changes in the scope as well as in the contents of this new edition of *Pediatrics*. The task of providing the student and practitioner with sufficient information in a relatively small text has not been easy and would have been impossible without the assistance of many distinguished contributors. Much of the text has been revised or rewritten. The format has been completely changed to make the book more attractive and readable.

Robert E. Cooke, M.D., one of the editors of the last two editions, has remained a source of guidance and inspiration for me. I will always remain indebted to him for his support and encouragement during the preparation of the previous editions. My daughter Niloofar, a medical student, and my wife Nahid, once a medical student, have read much of the manuscript. They, along with many former students and residents, have made important suggestions. My special thanks go to Bernadine Weeg, who has devoted so much of her attention to this project. The efficient secretarial assistance of Joan Tudisco, Kim Bauer, Andrea Miller, Tina Yannarell, Macel Thompson, and Jean Burris in the preparation of the manuscript has been indispensable. Bernie Todd Smith, Chief Librarian at Rochester General Hospital, and her staff, Katherine Saetta and Thomas Mead, have supplied the voluminous reference material, and Jeff Blackman and his staff in the department of medical illustration at Rochester General Hospital are responsible for many of the new illustrations. The continuous support of Fred Belliveau and Lin Richter Paterson as well as their staff at Little, Brown has been a source of encouragement. I am especially grateful to Carol Snarey and George D. McKinnon. It is sincerely hoped that the students and practitioners will find the book useful in their efforts to promote child health.

M. Z.

Pediatrics

Notice. *The indications and dosages of all drugs in this book have been recommended in the medical literature and conform to the practices of the general medical community. The medications described do not necessarily have specific approval by the Food and Drug Administration for use in the diseases and dosages for which they are recommended. The package insert for each drug should be consulted for use and dosage as approved by the FDA. Because standards for usage change, it is advisable to keep abreast of revised recommendations, particularly those concerning new drugs.*

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The Pediatrician, the Child, and the Family

The Well Child and the Physician

Infancy and childhood have implicit in them the beauty of growth and development and the anticipation of the future—the exquisite blend of nature and nurture, the genetic endowment and the impact of environment.

Pediatrics devotes its attention fully as much to the well child as to the sick child. It strives to preserve well-being or to achieve it when it is lacking, mindful of the present, anticipating the adult to be. The achievement of optimal health is an immediate target of the anticipatory years. The definition of *optimal*, of course, is primarily cultural, and *normal* is an elusive quality varying in the eye of the physician and with the circumstance of the individual patient.

We all, however, use the concept of the normal child, defining the concept in pieces if not in the whole, and we no longer restrict the concept to physical growth and organic development. It encompasses intellectual progress, emotional balance, and social adjustment. The concept underlies a perhaps pretentious goal, that of uniting all these components into a whole, permitting happy progress for the child, seeking the development of a competent, relatively independent being who, for the moment, is quite dependent in a setting of parents, family, and community, each defined by its varying customs and prejudices.

The role of the pediatrician in working toward the above goal is shaped and ordered by the consent and cooperation of others. The physician's directives may be implemented only with the support of parents and school, and the pediatrician must be willing to offer support to these others who play a much larger role in the lives of most children. The physician may begin to assist the youth more directly to establish independence and personal identity during the time of middle and late adolescence. It is, however, but assistance, and it gives promise of a successful intervention only to the extent that the physician is able to recognize and to constructively acknowledge the other powerful factors in the patient's life.

Prenatal Period

The physical environment of a child may be said to begin at the moment of conception, but, in fact, it stretches back

into infinity. Conception, however, can be reasonably accurately dated, and sometime between this accidental, casual, or planned event and the delivery of the baby, the pediatrician should encourage at least one prenatal visit for expectant primiparous mothers and the fathers. Such a visit gives the chance to explore the hereditary background, to establish rapport, and to inquire into any deviation from normal in the pregnancy. First-time parents are generally excited and apprehensive. The discussion should be open but might include the material needs of the infant—clothing, bedding, bathing, and feeding. Feeding is always of particular significance. Breast feeding is obviously the method of choice the world around, but to make it always an inflexible demand would be a mistake. The mother who breast feeds her infant resentfully and because of pressure from family or physician will most likely have an irritable infant with poor weight gain. The circumstance should not be forced. It is better to have a contented mother who bottle feeds than an unhappy one wrestling with a hungry baby at an inadequate breast. However, most women anticipate nursing with joy and require only positive reinforcement from family, friends, and health professionals. The deprived families of the developing areas of the world need special services to assure proper advice concerning nutrition and health education.

The prenatal visit affords the opportunity to assess the temperament and character of the parents. An inquiry into their childhood experiences and feelings is often predictive of their responses to the expected child. This total picture will enable the physician to modify approaches to the problems of an individual child in a particular family setting. The decision concerning nursing, for example, is much facilitated in such an interview. Small brochures or booklets that describe what can be expected of the baby during the first weeks or months of life can complement such interviews prenatally and postnatally, but they cannot substitute for the live interaction of parent and health professional.

Neonatal Period

The initial approach to the newborn infant requires, first, the assessment of the child and the determination of normality and the discovery of abnormality, and, second, the communication of that information to the parents. Then, too, one must offer instruction about the baby and respond to questions. A happy outcome for this interaction requires empathy and a sense of this impressive moment in the life of the family. It requires the conscious effort for good rapport if there is to be an important immediate impact and if satisfactory continuous communication is to be achieved with the family.

The physician must, if problems are discovered, be honest yet sympathetic. It is not necessary to be harshly blunt or determinedly objective all the time. However, deception will taint the relationship and undermine confidence. The parents must be given continuing support as they absorb the initial blow, come to understand it, grieve for the loss that the problem with their child imposes, and establish life under the constraints of that problem.

First Year

Contact with the family is ordinarily most frequent during the first year of a child's life. The first-time parent may be somewhat more dependent and insecure; indeed, educational or social advantage does not assure security. Each of us needs direction and the reassurance of competence when the parent's role is assumed.

In particular, one must be ready to protect and support the self-esteem of the woman who becomes unsuccessful at breast feeding. The physician should make the point that the early weeks at the breast are the most important emotionally but that the mother may consider the use of supplementary bottles, early introduction of solid foods, or early weaning with deliberate caution but without guilt or a sense of failure.

Circumstances such as this require access to the pediatrician. Some prefer a set telephone hour for discussion of routine care and minor problems. Indeed, a weekly call by the mother can be helpful during the first month at home, and a home visit at least once during this period has important value for teaching the physician about the family and establishing communication and a base for support. Follow-up office visits during the first year have a number of purposes:

1. To examine carefully for undiscovered congenital anomalies or for early signs of developmental abnormality. A check list, assigning certain tasks to each visit, can help prevent omissions or oversights.
2. To assess growth and development, using measurement of the head size, height, and weight and inquiry into the developmental milestones (Chaps. 3, 4). Social and cultural pressures are a major source of difficulty, for example, neighborhood competition over the size and weight of contemporary babies. It may be difficult to persuade a mother or grandmother that each child has a constitutional ideal and that one child may quite accept-

ably weigh as little as 8 kg at 1 year and another as much as 12 kg. Height and weight charts depicting normal upper and lower limits are available and are valuable educational aids (see Chap. 3). The estimate of the developmental progress of the infant is obviously vital to the early discovery of problematic states. Each such problem has prepossessing importance, but some are easier to find than others. It is difficult, for example, with "soft" signs to appreciate early that disabling but elusive condition inaptly named minimal brain damage (see Chaps. 3, 4).

3. To counsel concerning the infant's diet. A wide range of variations is possible, but the diet must fulfill the criteria of freedom from pathogens, adequacy in nutritional elements, and sufficiency without excess of vitamins. Poorly tolerated foods must be withdrawn. For example, it may be wise to postpone the introduction of prominent allergenic foods (e.g., wheat, eggs, and orange juice) and occasionally even to recommend a substitute for cow's milk for those children with a strong family history of allergy. Some pediatricians advocate beginning the use of a cup at 5 or 6 months and encourage the child's hand feeding whenever the child seems so inclined. It is a common practice in developing countries to continue breast feeding for 2 years or more since this may be the only source of animal protein for many infants. Socioeconomic factors that delay the introduction of solid foods until late in the first year need to be considered, and cultural factors should be allowed full play within the constraints imposed by the basic needs of the infant. There need certainly be no rush to introduce solid foods, and there is a need to be cautious about excessive parental devotion to particular regimens.
4. To administer immunizing agents that are regionally appropriate. Immunization against diphtheria, whooping cough, tetanus, poliomyelitis, and measles should be included for all normal children in all countries. Booster shots should be planned at proper intervals. In addition, BCG (antituberculosis immunization) and typhoid and yellow fever series are essential in many areas (see Chap. 19 for discussion of immunizations).
5. To provide the parents with an opportunity to ask questions and to discuss problems. A relaxed environment, attentive listening, and a few judicious remarks will provide much useful exchange regarding the parent-child interaction and sociocultural attitudes.
6. To educate regarding the prevention and treatment of accidents and injury. This is in many areas the principal source of morbidity and mortality in children past the age of 2 years.

One can recognize the expression of certain temperaments during the first year. Patterns of reaction and response are being formed that can persist for better or worse throughout life. Frequently these budding characteristics may not be tolerable to parents. Among the most valuable and enduring contributions of the physician are to foster the parents' understanding of the child's behavior, to channel strengths in positive directions, and to ameliorate handicaps to the extent possible so that they do not impede progress toward realistic goals and ambitions. This is not psychotherapy; it is true mental hygiene. Good rapport with the family can be of incalculable assistance at this level of support and primary prevention.

1 to 3 Years of Age

The child from 1 to 3 years is an active, seemingly tireless, explorer, striving to examine and to define the world through personal initiative and the use of all of the senses. Accidents and poisonings are common. A discussion with the mother about the potential of aspiration of foreign objects and ingestion of noxious agents is essential; advice regarding prevention of serious falls and street accidents, a must.

Pedal locomotion focuses the attention of parents on the legs and feet of children of this age. Concern about bowlegs, knock knees, and flatfeet is frequently expressed. Most such conditions, perceived as abnormal, are truly phases in development, and many more are of constitutional heritage rather than signs of disease such as rickets. Shoe wedges and other manipulative devices are often unnecessarily prescribed. These interventions cannot substitute for sound education and explanation. Forbearance and rapport make good allies.

Speech is a major developmental feature. The child who is not using phrases at 2 to 2½ years of age becomes suspect for possible difficulties. Hearing problems must be considered early and appropriately investigated in any instance of retarded speech.

The office examination is frequently a wrestling match at this age. The parent's lap rather than table should be relied on so that the child may feel more at ease. Reason, threats, or bribes are not very effective. It is just as well, therefore, for the parent to restrain firmly when necessary and for the doctor to complete the examination swiftly.