

Pediatric Swallowing and Feeding

ASSESSMENT AND MANAGEMENT



Early Childhood Intervention Series

EDITED BY

*Joan C. Aruedson
Linda Brodsky*

Pediatric Swallowing and Feeding

Assessment and Management



Edited by

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and

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Foreword



When recent changes in social policy regarding at-risk infants and young children are considered in conjunction with advances in theoretical conceptualizations and associated research, it is clear that early childhood intervention is emerging as a unique and dynamic area of scientific inquiry across multiple disciplines. The purpose of the Early Childhood Intervention Series is to provide state-of-the-art information with respect to interventions, focusing on families and their infants and young children who are at-risk for or have diagnosed disabilities. As readers will readily recognize, this is no small task; the “art” of effective intervention practices is continually subject to refinement and improvement of existing practices as well as the introduction of entirely new ideas and approaches. As is the case with most topics subject to a rapid surge in scholarly attention, new findings and ideas are often steps ahead of their practical application, creating what many have come to regard as a research-to-practice gap. Books in this series have been designed and prepared with an eye toward reducing this gap and assisting early childhood intervention personnel in becoming consumers of current theoretical and empirical information. The topics in the series are wide ranging. Through explicit examples and discussion, each of the books offers a wealth of practical information to assist us in providing the most effective interventions for families and their infants and young children.

Pediatric Swallowing and Feeding: Assessment and Management focuses on an area of utmost concern in many young infants and young children with disabilities. The editors/authors, Drs. Arvedson and Brodsky, cogently organize and present a comprehensive, interdisciplinary text on this critical area in health care. Contributed chapters from colleagues representing various medical and rehabilitative disciplines assist in providing the reader with a total management perspective. As in many areas of early childhood intervention, it is becoming increas-

ingly clear that effective management of pediatric swallowing and feeding problems requires the collective expertise of a team of specialists. No single discipline can adequately address all of the needs of this medically and developmentally complex issue. By providing a wealth of practical information against the backdrop of a management team, this book goes beyond merely stating that interdisciplinary teams are important. It is one of those rare books that accomplishes a host of purposes and will prove an invaluable resource to personnel from many disciplines.

M. Jeanne Wilcox, Ph.D.
Series Editor

Preface



Breathing and eating are the most important survival functions for any living being. Breathing is automatic and usually does not require active effort by the infant. Eating, on the other hand, requires that food be given or sought. It provides the first need the human infant has for communication with other human beings. Later on, the seeking of food becomes one of the foundations for cognitive processes on which a lifetime of learning will continue.

Although basic to survival, eating is not a simple process. It requires that food be found, ingested, swallowed, and finally digested. If any one of these processes is disrupted, a person will be exposed to malnutrition, poor growth, delayed development, and loss of general health and well-being. Thus, at the risk of stating the obvious, normal eating is of paramount importance.

Recent advances in medicine have provided many children and their families with enhanced neonatal survival. An unfortunate by-product is that many surviving infants suffer neurologic damage and, hence, require alternative strategies for the management of such basic physiologic processes as eating, breathing, and communicating. This book is an outgrowth of these needs.

Oral-motor function and swallowing encompass most of the processes that relate to development of normal feeding and eating patterns. This book opens with an introduction to the problem by putting it into the framework of a *multidisciplinary* problem that needs to be handled with an *interdisciplinary* approach. The following chapter contains relevant anatomy, embryology, and physiology to provide sufficient background for study of the subject. Medical aspects of swallowing and eating disorders are described in the chapters on neurodevelopmental assessment, gastroenterology, and airway.

Understanding nutrition is extremely important and is dealt with separately. Posture and body control, as well as methods for food intake, are discussed by an occupational therapist. The core of the text is in the chapters on clinical assessment, laboratory assessment, and management issues for children with swallowing disorders.

Two chapters dealing with special topics follow: drooling and the feeding of children with craniofacial anomalies. Case studies throughout the book, as well as in the final chapter, highlight salient points.

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Dedication



We would like to dedicate this book to
our families

Peter, Stephen, and Mark Arvedson

and

Saul, Jeremy, Dana, and Rebecca Greenfield

Who were so supportive and from
whom we took so much time to
complete it.

Joan Arvedson, Ph.D.

Linda Brodsky, M.D.
(aka Linda Greenfield)

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LINDA BRODSKY ■
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■ CHAPTER 1

Introduction: Rationale for Interdisciplinary Care

Medical and technological progress over the past three decades has resulted in the survival of many infants and young children who previously would not have lived. Although many children and their families have benefited greatly, an increasing number of children are being born prematurely at low birth weight and very low birth weight and will be confronted with significant medical problems. Unfortunately, some of these infants will have mental retardation, cerebral palsy, chronic pulmonary problems, and/or neurological impairments. Consequently, new strategies are needed to address such problems, heretofore encountered infrequently. Some of the most striking problems are related to oral-motor function and swallowing, feeding, and communication. Thus, medical and technological advances have resulted in new problems for which we must seek solutions in the 1990s and beyond.

After the establishment of adequate breathing, meeting the nutritional needs of all infants and children is the highest priority for caregivers. To accomplish this successfully, several important factors need to be considered. These factors include functioning of the oral-motor mechanisms involved in swallowing, overall health (including respiratory, gastrointestinal, and neurologic), nutrition, sensory integration, and tone. The early emergence of communication skills also becomes an integral part of this process but is often overlooked. Feeding patterns

reflect early development and are a basis for later communication skills. Furthermore, feeding and swallowing disorders have an impact on not only the physical but also on the emotional well-being of the individual.

Effective management of a medically complex child depends on the expertise of many, often competing specialists. An interdisciplinary approach is necessary to maximize the child's health and development. An *interdisciplinary* approach refers to interaction of a group of professionals, bringing expertise useful in the solution of a complex medical problem. Interdisciplinary management is based on several interrelated concepts. First is the desire to communicate in a collegial fashion with others to solve problems. Second is the development of a group philosophy for both evaluation and treatment. Respect for other team members' expertise is important as well. An organized structure with a clearly defined leader is needed. Finally, a shared fund of knowledge is critical and results in creative problem solving and fruitful research. Thus, it is advocated that an interdisciplinary approach be adopted by professionals at institutions evaluating and treating compromised children.

Many types of settings can accommodate interdisciplinary team assessment and treatment. Most teams function in an out-patient clinic setting, or in-patient oral-motor function and feeding (swallowing) teams serve this function. Alternative names for these teams can include Feeding Clinic, Nutrition Clinic, or Dysphagia Clinic. The core team members usually include a developmental pediatrician or pediatric neurologist, nutritionist, occupational therapist, nurse, and an oral-motor specialist, such as a speech-language pathologist. Other consultants for specific problems may include a gastroenterologist, pulmonologist, otolaryngologist, radiologist, and/or a psychologist.

The interdisciplinary team leader may vary from one institution to another. However, in most instances, the team is headed by a physician with significant interest in neurologic or upper GI problems. The primary oral-motor swallow therapist can be either a speech-language pathologist and/or an occupational therapist, and all teams benefit from the ideal of having both.

Oral-motor and swallowing specialists may function in an in-patient hospital setting, an out-patient department, or a variety of educational and/or residential settings. Families may be followed through a center or home-based educational program. These services have been mandated by federal legislation that guarantees a free and appropriate educational program for all handicapped children. The amendment known as Public Law 99-457 to the original **Education for All Handicapped Children Act of 1975** has added the mandate for service of children who are at-risk for developmental problems from birth to 3 years of age. The 1975 law guaranteed appropriate education for all