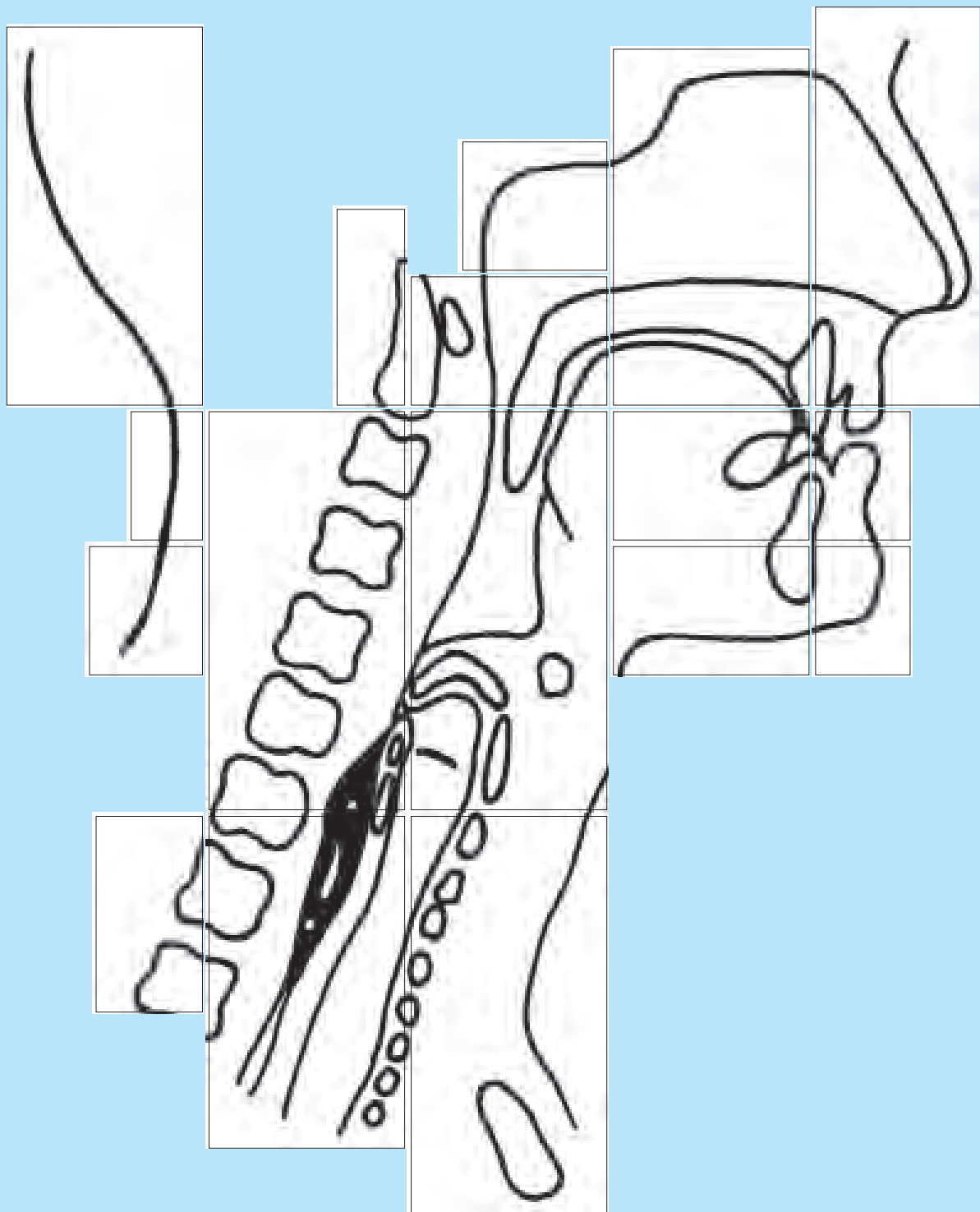


Guidelines for Feeding and Swallowing Programs in Schools



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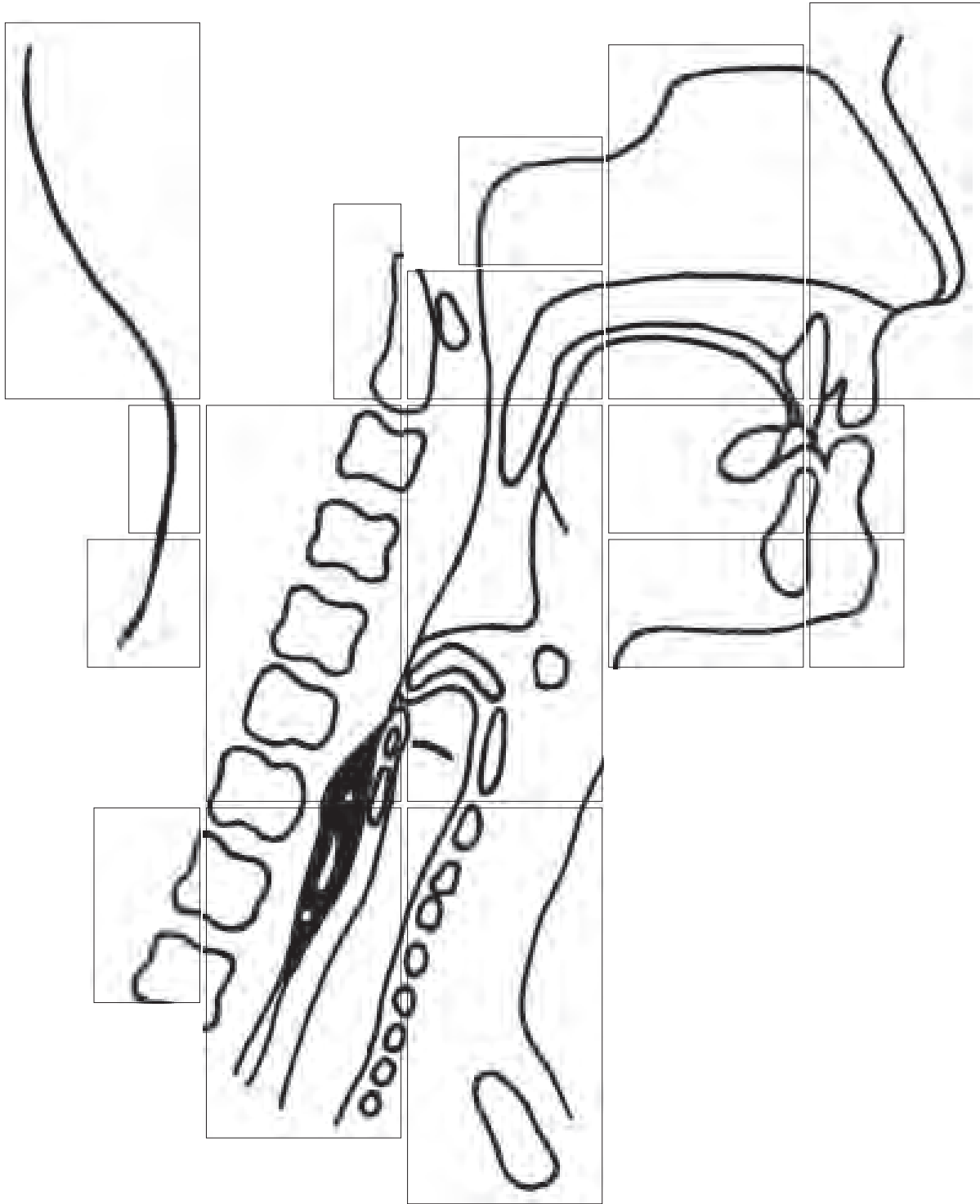
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Guidelines for Feeding and Swallowing Programs in Schools



Contents

Foreword	vii
Acknowledgments	ix
Overview	xiii
Introduction	1
Basic Terminology and Processes	
Feeding and Swallowing	3
Anatomy	3
Neurology	3
Phases of Swallowing	4
Normal Feeding and Swallowing Development	7
Signs and Symptoms of Dysphagia	7
Major Risk Factors for Dysphagia	8
Legal and Ethical Framework	
Laws Regarding Identification, Evaluation and Services	9
• IDEA 2004 and Connecticut Special Education Law	9
• Distinguishing Medical and Educational Domains	11
• Administration of Medications	12
• Section 504 of the Rehabilitation Act	12
Laws Regarding Educational and Health Records	13
• FERPA, Connecticut Regulations Concerning Student Records and HIPAA	13
• Sharing Among School Personnel	14
• Sharing Between Schools	14
• Sharing with Outside Parties.....	14
Laws and Regulations Concerning School Food Programs	15
• Regulations Regarding Menu Modifications	15
• Cost of Meals	16
Philosophical Framework	17
Establishing a Feeding and Swallowing Team	
• Purpose and Tasks of the Team	21
• Composition of the Team	21
• Qualifications of Team Members	22
• Knowledge and Skills for Core Team Members	23
• Team Communication	26
Addressing Feeding and Swallowing: New Referrals (flowchart)	27

Implementing Feeding and Swallowing Services

New Referrals	28
Referral for Regular Education Assistance	28
Children Transitioning from the Birth to Three System	31
Referral for Comprehensive Feeding and Swallowing Evaluation	31
Purpose of a Comprehensive Feeding and Swallowing Evaluation	32
Parental Consent for Initial Evaluation	32
Components of a Comprehensive Feeding and Swallowing Evaluation	32
• Nutrition	33
• Health	34
• Gross and Fine Motor	35
• Communication	36
• Cognition, Social and Behavior	36
• Instrumental Swallow Study	36
Determining Eligibility and Developing an Intervention Plan	38
• Diagnostic Placement	38
• Consent for Placement	39

Addressing Feeding and Swallowing: Children with an Existing IEP/504 Plan

Flowchart	40
Procedures for Children with Existing IEPs or 504 Plans	40
• Progress Reports and Annual Reviews	41
• Reevaluations	41
• Parental Consent for Reevaluation	42
• Revising and Amending the IEP or 504 Plan	42

Providing Feeding and Swallowing Interventions

Developing a Feeding and Swallowing Plan	44
• Components of the Plan	44
• Implementing the Plan: Roles and Responsibilities	45
• Nurse	45
• Dietitian	46
• Food Service Personnel	46
• SLPs, OTRs, PTs	46
• Teacher	47
• Paraprofessional	47
• Mental Health Staff	48
• Family	48
Intervention Strategies	49
• Management Strategies	50
• The Eating Environment	50
• Serving Food	50
• Alternatives to Oral Feeding	52
• Hydration	53
• Oral Hygiene	54
• Controlling Drooling	54
• Treatment Strategies	54

• Compensatory Strategies	55
• Direct Therapy Strategies	62
Ethical Considerations	64
Glossary	65
Bibliography	67
Additional References	71
Appendices	
Appendix A: 2001 CSDE Feeding and Swallowing Questionnaire	74
Appendix B: Sample Referral Form for Concerns about Feeding and Swallowing	75
Appendix C: Sample Feeding and Swallowing Consultation Report Form	76
Appendix D: Sample Referral Form for Instrumental Swallow Study	81
Appendix E: Sample Feeding and Swallowing Goals and Objectives	82
Appendix F: Sample Feeding/Swallowing Plan	84

Foreword

Adequate nutrition is essential to support children’s growth and development and to enable them to benefit from their educational experiences. Meals and snacks are important parts of a child’s or adolescent’s day, whether in school, community programs or at home. These occasions provide not only essential nutrients but also opportunities for significant social, language and cognitive development.

Special education and other disability-related laws and regulations require school districts to locate, evaluate and identify children birth through 21 years of age with disabilities and to provide the special education and related services and/or accommodations necessary to address their disabilities. Increasing numbers of children with complex medical and developmental needs who require evaluation and intervention in the areas of feeding and swallowing have been coming to the attention of schools. These children represent a variety of conditions, such as cerebral palsy, traumatic brain injury or other neurologic or neuromuscular impairments, craniofacial anomalies, developmental disabilities or autism. Some of these children present with obvious or already-identified concerns; others may have frequent absences or hospitalizations due to respiratory-pulmonary conditions that may be caused by unidentified aspiration of liquids or food. While many of these youngsters can take nutrition orally, many others need to be fed by tube. Some children are transitioning from tube to oral feeding and still others need to supplement their oral input with tube feedings temporarily or permanently to meet their nutrition needs.

Anecdotal concerns about children’s health and safety during feeding and swallowing assessment and intervention have been supported by recent Connecticut State Department of Education (CSDE) survey data. Feeding and swallowing practices have been inconsistent across school districts and few schools have developed written policies and procedures in this area.

The issues related to feeding and swallowing are complex, with the potential for significant medical and attendant legal risks. Addressing these issues requires ongoing interaction among school personnel, families, Birth to Three service providers, physicians and related medical professionals. The CSDE offers these guidelines to help school districts determine which children need feeding and swallowing services and to provide quality feeding and swallowing programs for them. This document emphasizes the need for a collaborative team process through which all parties work together to provide effective feeding and swallowing services that protect children’s health and safety and respect their dignity, while ensuring proper nutrition that helps them to be alert and available for learning.

Mark K. McQuillan
Commissioner of Education

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Overview

This book, *Guidelines for Feeding and Swallowing Programs in Schools*, is intended to facilitate the implementation of consistent and safe practices in Connecticut for children whose disabilities include a need for assessment and intervention for feeding and swallowing disorders. The focus of the document is on a collaborative team process that includes school and Birth to Three personnel, physicians, other health professionals and families who work together to protect the child's health, safety and dignity. **The content is presented at an introductory level and is not a substitute for the in-depth knowledge and training needed by personnel providing feeding and swallowing services.**

The document is organized as follows:

- The **Introduction** describes the rationale and process for developing the guidelines and includes the issues that were of concern to practitioners in school settings.
- The section on **Basic Terminology and Processes** defines feeding and swallowing and provides an overview of the anatomy, neurology phases and development of normal feeding and swallowing.
- The **Legal and Ethical Framework** section reviews the pertinent federal and state statutes, regulations and policies that govern the provision of feeding and swallowing services.
- The **Philosophical Framework** presents the core set of beliefs identified by the task force as important in guiding the development of quality feeding and swallowing programs.
- The section on **Establishing a Feeding and Swallowing Team** addresses the critical phases and issues related to this process.
- The section on **Implementing Feeding and Swallowing Services** addresses the recommended procedures for referral, evaluation and intervention for children suspected of having, or previously diagnosed with, feeding and or swallowing disorders.
- The **Glossary** includes definitions of terms used beyond those in the basic terminology section.
- The **Bibliography** and **Additional References** sections provide important sources of information.
- The **Appendices** include diagrams, charts, sample forms and excerpts from relevant laws.

The guidelines are available on the Web sites of the Connecticut State Department of Education (<http://www.ct.gov/sde>) and SERC, the State Education Resource Center (<http://www.ctserc.org>).

Introduction

Breathing and eating are the most basic physiologic functions that define life's beginning outside of the mother's womb ... Breathing is reflexive and life sustaining but provides no other intrinsic pleasure. Eating, on the other hand, is partly instinct and partly a learned response ... Sucking and swallowing require a complex series of events and coordination of the neurologic, respiratory, and gastrointestinal (GI) systems. Normal GI function must occur in digestion of foods to provide nutrients. All of these functions occur within the framework of developing physical and emotional maturity. The pleasure of eating extends beyond the feeling of satiety to the pleasure gained through food ... This interactive primary relationship ... serves as a foundation for normal development, somatic growth, communication skills, and psycho-social well-being. Thus, feeding ... is an activity with far-reaching consequences. When disrupted, the sequelae can include malnutrition, behavioral abnormalities, and severe distress for family and child alike. Interruption of growth and development sometimes cannot be reversed if it occurs at a critical time during the early months and years of a child's life. Lifelong disabilities may result.

— Arvedson and Brodsky, 2002, p.3

Issues related to feeding and swallowing have captured national and state attention in recent years, as increasing numbers of children in need of services in these areas have presented themselves to schools. Youngsters with a variety of disabilities may require feeding and swallowing assessment and intervention. In addition, difficulty with feeding and swallowing may be the first indication of the existence or onset of a serious medical condition or of a previously unrecognized malady that may have implications for disability identification.

Anecdotal information in Connecticut indicating concerns about safe and effective feeding and swallowing practices was confirmed by survey data collected by the Connecticut State Department of Education (CSDE) in 2001. (The survey questionnaire can be found in **Appendix A**.) Thirty-two public school districts, one regional educational service center and two private special education facilities reported that they served 212 children with Individualized Education Programs (IEPs) that included feeding and swallowing services. Respondents represented somewhat less than one-quarter of the state's public schools. Data from the CSDE Health Services Program Information Survey for 2004–05 indicated that almost half the state's school districts are dealing with children who are tube fed (47.7 percent with gastrointestinal tubes and 1.9 percent with nasogastric tubes) because of serious problems consuming food orally.

The 2001 survey data also indicated that there was a dearth of comprehensive written policies and procedures to guide the implementation of quality feeding and swallowing programs in schools. In response, the CSDE convened a multidisciplinary task force to outline the major issues related to feeding and swallowing assessment and intervention and to develop statewide guidelines for providing these services. The task force included representatives from the professions of medicine, nursing, nutrition, speech and language pathology, occupational and physical therapy, and regular and special education. These professionals practice in schools, Birth to Three programs, medical settings and universities in Connecticut. Table 1 on the following page summarizes the critical issues that survey respondents and members of the task force identified.

Table 1. Critical Feeding and Swallowing Issues	
Topic	Concerns
Personnel	<ul style="list-style-type: none"> Qualifications, including specialty training in feeding and swallowing Scope of practice/codes of ethics Training in feeding & swallowing & safety procedures (including CPR & Heimlich maneuver) Staff roles and responsibilities Access to experts (including physician involvement) Delegation of feeding and swallowing and supervision of delegees
Child/family	<ul style="list-style-type: none"> Child's general health Protection of health and safety Need for swallow studies Cultural influences Parent consent, cooperation and training Identification of sensory difficulties Selection of appropriate feeding method and foods Influence of behavior/social skills
Implementing feeding and swallowing services	<ul style="list-style-type: none"> Need for teaming (including coordination with medical professionals) Eligibility criteria/extent of services Time and location of services Coordination of schedules Developing appropriate goals and objectives Delegation and supervision Space and equipment Emergency care Consistency in following program Generalization of strategies Time Transition from Birth to Three programs to schools Transition planning for high school students
Legal/ethical	<ul style="list-style-type: none"> Obligations and responsibility (under federal and state laws) Distinguishing medical from educational need/service Liability Emergency plans Confidentiality Ethical considerations (e.g., conflict resolution)

These guidelines represent a first step in addressing the complex issues related to feeding and swallowing. By themselves, they will not ensure the development and implementation of safe and effective programs. They are not intended to provide detailed instruction in all aspects of feeding and swallowing. Hiring qualified personnel and providing them with ongoing training in feeding and swallowing assessment and intervention are critical components in protecting children and districts/agencies. The CSDE is committed to collaborating with school districts, regional educational service centers and higher education to address this need.

Basic Terminology and Processes

Although basic to survival, eating is not a simple process. Food must be found, ingested, swallowed, and finally, digested. If any step in the process is disrupted, the child may demonstrate malnutrition, poor growth, delayed development, poor academic achievement, psychological problems, and loss of general good health and well-being.

— Arvedson and Brodsky, 2002, p.ix

Feeding and Swallowing

As used in this document, **feeding** includes the act of preparing food and getting it to the child either orally or through alternative means. **Swallowing** includes the manipulation of food in the mouth and directing its passage from the oral cavity down to the stomach. The term **food** will be used to include various forms on the continuum from liquid to solid.

Activities related to feeding involve gathering appropriately nutritive ingredients and assembling them in appropriate form (e.g., liquid, puree, semisolid, solid) for intake, which may be through the mouth or via a tube inserted to access the stomach through the nose or abdomen. Oral access may be passive due to a child's developmental age or neuromuscular condition; or it may be active as when a child is able to coordinate sucking from the breast or direct food to the mouth from a bottle, cup, tray, bowl or plate, using limbs or eating utensils.

Dysphagia is the medical term for disorders of swallowing. This disorder ranges from mild to severe and, although physiologically based, may include a behavioral component. Dysphagia is to be distinguished from eating disorders that have a primary psychological origin, such as anorexia or bulimia.

Anatomy

The **aerodigestive tract** includes anatomical structures related to breathing, eating and drinking and is divided into upper and lower parts. The upper tract includes the nose, mouth, pharynx, larynx and esophagus and ends at the opening to the stomach; areas below these structures comprise the lower tract. School personnel involved in the assessment and treatment of disorders of feeding and swallowing address their attention to the upper aerodigestive tract. Developmentally, the growth of the head and neck is in a downward and forward direction, which creates more space for the oral and pharyngeal structures and lowers the larynx. As the child matures, these anatomic changes allow for the introduction of different food textures and feeding implements.

Neurology (Sources: Arvedson and Brodsky, 2002; Swigert, 1998)

Both sensory and motor nerves are involved in the process of feeding and swallowing. These nerves have peripheral and central components. The nervous system is under both voluntary and involuntary control. Damage to any of part of the nervous system involved in feeding and swallowing will affect these activities in various ways and to varying degrees, depending on the location and severity of the damage.

Sensory nerves provide information about taste, texture, bolus size, food temperature and location, as well as feedback from muscle movements (Arvedson and Brodsky, 2002). Sensation of hunger and thirst is important for appropriate self-regulation of eating or for sending signals that it is time to be fed. Sensory information may be used to modify feeding and swallowing. For example, visual input may cause the child to decide to insert a smaller amount of food into the mouth. As food is manipulated in the mouth, sensory input may lead to rejection of the food; or the child may sense that there is too much food in the mouth to form an appropriate bolus size for swallowing and, therefore, store part of the food at the front or sides of the mouth in order to chew and swallow a smaller portion first. Sensory feedback may also prompt the child to sip or drink liquid to change the consistency of the food before swallowing. Sensory nerve damage can affect a child's ability to carry out these modifications to improve efficient or safe swallowing.

Motor nerves allow for the preparation of food externally and internally. They also coordinate the phases of swallowing, moving the food from mouth to stomach and activate the muscles necessary to protect the upper and lower airways from food.

Certain **reflexes** are important in feeding and swallowing. For example, in early infancy, the rooting reflex orients movement of the head, neck, face and lips toward the nipple of the breast or bottle, a movement prerequisite to latching onto the nipple that is critical to accessing nutrition vital for survival. The decrease in the tongue protrusion reflex permits the introduction of spoon-feeding. The phasic bite reflex is important to the development of munching. The gag reflex is a protective response that continues into adulthood, though usually with lesser strength. Its decrease in infancy is associated developmentally with the introduction of solids. Its persistence will likely affect dietary texture, where food should be placed in a child's mouth, and the amount and timing of food to be introduced into the mouth. Children with neurologic deficits may have exaggerated or diminished reflexes or extensions of their normal developmental course. Knowledge of these reflexes is important for assessment and intervention, as they may interfere with safe and efficient swallowing. See Arvedson and Brodsky, 2002, and Swigert, 1998, for developmental information about these critical reflexes.

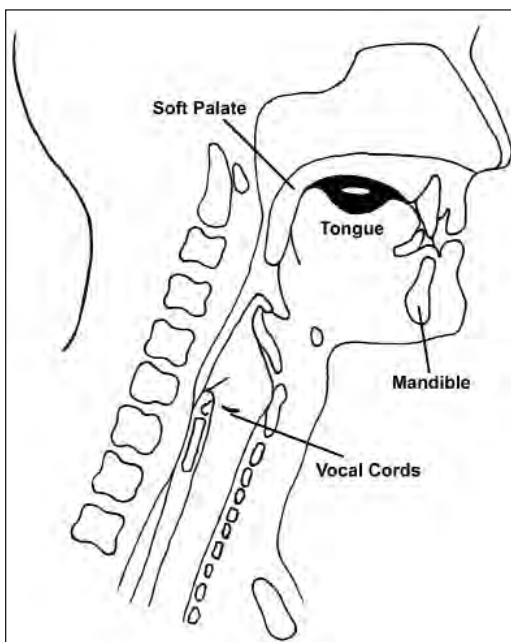


Figure 1. Oral preparatory phase of normal swallowing.

Phases of Swallowing (Source: Arvedson and Brodsky, 2002; Logemann, 1998; Swigert, 1998)

There are four major phases of swallowing that entail specific activities: oral preparatory, oral, pharyngeal and esophageal. Drawings accompany the narrative for clarification.

1. During the oral preparatory phase, food is introduced into the mouth and the child closes the lips and uses the tongue, teeth and cheeks to break down the food and organize it into a bolus or mass, somewhat rounded in form. This requires voluntary neural control and must be coordinated with respiration. The nasal passage must remain sufficiently open, but not open enough to result in reflux into this area.

The size and cohesion of the bolus and the time and degree of sucking or chewing required to form the bolus will

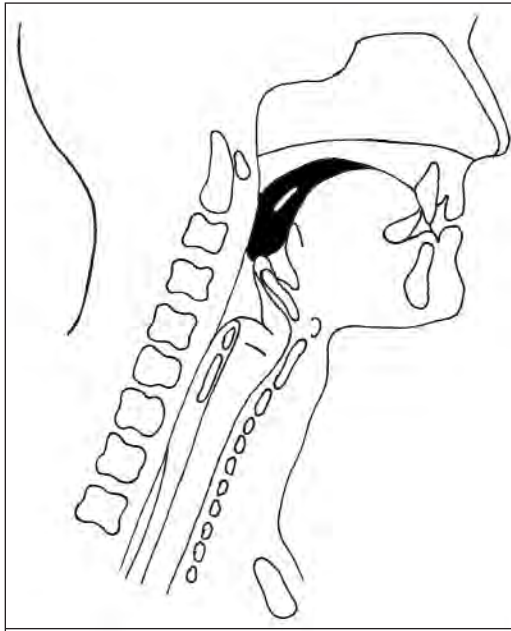


Figure 2. Oral phase of normal swallowing.

depend on the amount and texture of food introduced and the child’s muscular strength. “In a normal infant, bolus formation per se is minimal, and this phase is characterized by latching onto the nipple. As children begin to handle thicker, chunkier textures, the bolus formation may last for several seconds. The more chewing that is required, the longer this phase lasts. Oral manipulation of liquid presented via cup varies significantly from one child to another, but usually liquid is held in the oral cavity for less than 2 sec.” (Arvedson and Brodsky, 2002, p.39).

2. The **oral phase** is also under voluntary neural control. It begins as the tongue lifts the bolus toward the hard palate, and moves it to the back of the mouth with a wave-like (peristaltic) squeeze for propulsion into the pharynx. The soft palate lifts and retracts to close off the nasal passage, preventing nasopharyngeal reflux. These activities happen very quickly, lasting less than one second in normal children. This phase ends when the bolus has left the mouth.

3. The **pharyngeal phase** begins when the food enters the top of the pharynx (oropharynx). The contraction of the pharyngeal muscles moves the food down the pharynx. Pharyngeal contraction follows the tail of the bolus to strip residuals from the pharynx into the esophagus at the end of the pharyngeal phase.

As food moves down the pharynx, swallowing shifts from voluntary to involuntary neural control. Because of the proximity of the larynx, which is the entry to the trachea and lower airways, this

stage is the one during which the risk of laryngeal penetration (above the true vocal folds) and aspiration of food into the larynx (below the true vocal folds) and lower airway is greatest. In some cases of swallowing disorders, aspiration of saliva alone may occur.

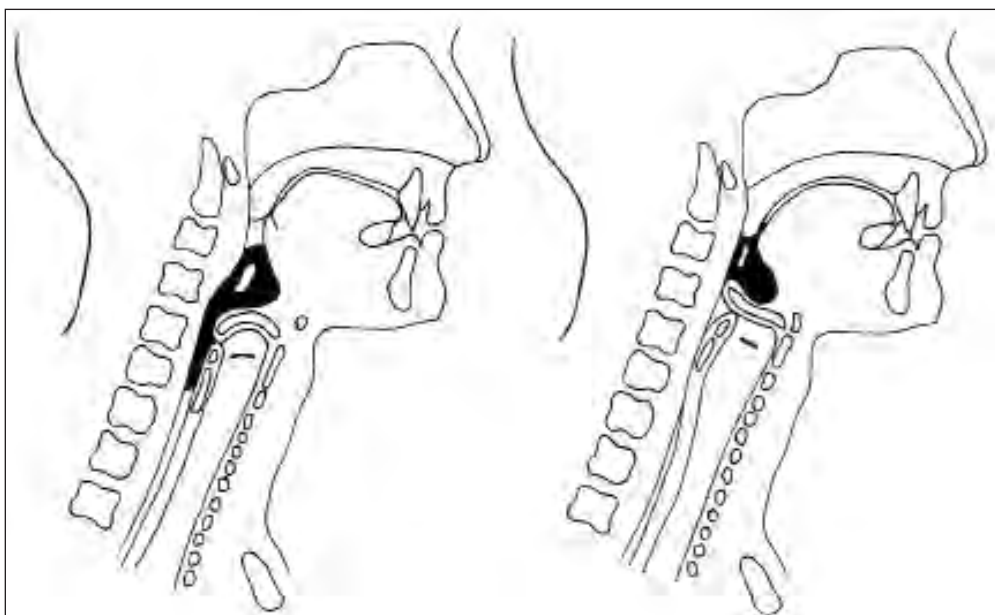


Figure 3. Pharyngeal phase of normal swallowing.

There are two protective mechanisms that operate to

protect the airway under normal conditions: (1) Respiration stops briefly; the larynx elevates and moves forward under the base of the tongue; the true and false vocal folds close; and the arytenoid cartilages tilt forward to contact the base of the epiglottis. (2) The cough reflex activates when food seeps into the larynx because of inadequate closure of that structure.

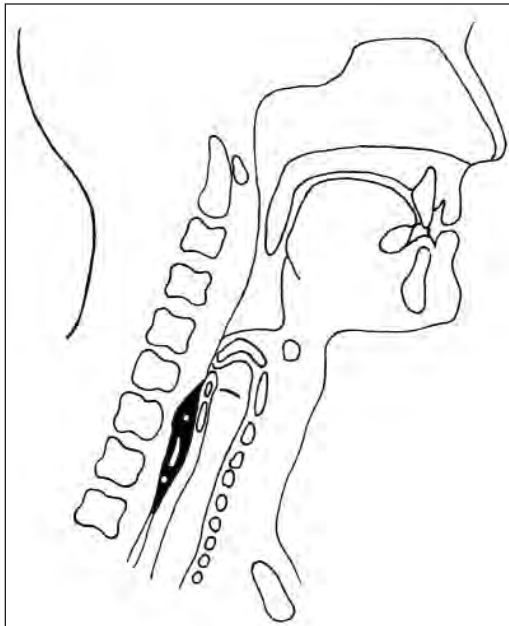


Figure 4. Esophageal phase of normal swallowing.

4. The **esophageal phase** begins with the relaxation of the upper esophageal sphincter as the food leaves the pharynx and enters the esophagus, a structure that is anatomically continuous with the pharynx; it continues until the food enters the stomach with the relaxation of the lower esophageal sphincter. However, if the lower sphincter remains open or opens after food has entered the stomach, reflux back into the esophagus occurs. Gastroesophageal reflux disease (GERD) develops when this spontaneous regurgitation of food or acid from the stomach backs up into the esophagus is persistent. GERD may cause irritation of the esophagus. In some cases, the reflux backs up all the way into the pharynx and spills over into the larynx and lower airways, causing inflammation of the vocal folds and respiratory problems. This is known as laryngopharyngeal reflux or LPR. In some cases, the child may be able to swallow adequately, but the diet may need to be modified to facilitate healing of the affected tissue.

Normal Feeding and Swallowing Development

Changes in feeding and swallowing from infancy into childhood occur as part of the course of normal development. As in other areas of human development, anatomic and neurologic changes resulting from maturation produce physiologic and behavior changes.

With respect to feeding and swallowing, life begins for newborns with dependence for nourishment in the form of milk from a nipple (breast or bottle) that comes from a caregiver. As the infant matures, other forms of food and feeding instruments are introduced, beginning with smooth purees and appropriately sized spoons. Early childhood is marked by a toddler's increasing independence as a self-feeder who can manage utensils and successfully transfer food to the mouth manually. Various developmental phases include transitions from suckling to sucking, then biting and chewing foods of increasingly dense consistency. Coordinated chewing is reported to be fully mature by 3 to 6 years of age (Vitti and Basmajian, 1975). The pharyngeal swallow begins in the 10th to 11th month in the developing fetus; it is one of the first pharyngeal motor responses (Arvedson and Brodsky, 2002, p.30).

Knowledge of normal feeding and swallowing development is a prerequisite to understanding delays and disabilities in these areas. This knowledge aids in conducting appropriate evaluations of children with feeding and swallowing deficits and developing safe and effective interventions. Understanding the interrelationships among the development of feeding and swallowing and other developmental domains informs assessment and intervention. For example, children's developing motor skills relate to their ability to self-feed. Their communication development relates to their ability to express needs, wants and attitudes toward food, and to participate in the social aspects of eating. Depending on their medical condition and status, children with disabilities may exhibit delayed feeding patterns, or may need to be fed with food textures and implements more common to younger children. Developmental information may be found in Swigert 1998 and Arvedson and Brodsky 2002.

Signs and Symptoms of Dysphagia

Signs of dysphagia are what others note about a child's swallowing; symptoms are what the child reports. Recognizing signs and symptoms of dysphagia is critical for identifying children with evaluation and intervention needs in this area. The following signs and symptoms of swallowing disorders are among the most common (sources include Logemann in Homer et al., 2000; Newman, 2000; and Nicolosi et al., 2004):

- failure to initiate or maintain suckling or sucking;
- inability to tactilely recognize food (tactile agnosia);
- poor upper body control or posture;
- unusual head or neck posture;
- frequent refusal to eat or drink;
- irritability or behavioral problems during eating;
- difficulty placing or keeping food in the mouth;
- oral hypersensitivity or hyposensitivity;
- food texture hypersensitivity or aversion;
- difficulty controlling saliva in the mouth or significant drooling, especially after eating;
- difficulty controlling food in the mouth or excessive mouth movement during chewing and

- swallowing;
- difficulty starting to swallow;
- needing to swallow a few times to get food down;
- repeated drinking while or immediately after chewing or swallowing;
- food left on tongue or pocketed on the side of the mouth after swallowing;
- coughing before/during/after eating or drinking;
- frequent gagging or spitting or vomiting during or after eating or drinking;
- watery eyes (tearing) during or after eating or drinking;
- extended feeding periods (longer than 30–40 minutes)
- frequent bouts of pneumonia or other chronic respiratory problems;
- weight loss of unclear origin, failure to gain weight appropriately or evidence of malnutrition; and/
or
- gurgly voice quality or breath sounds, especially after eating or drinking.

Major Risk Factors for Dysphagia

Survival rates continue to increase in the pediatric population as medical knowledge and technology improve. Many of these survivors, however, experience serious medical conditions likely to include feeding and swallowing disorders (Newman, 2000).

Arvedson and Brodsky, (2002), ASHA (2002), Kurjan, Newman (2000) and Swigert (1998) and others cite the following factors that may lead to feeding and swallowing disorders:

- premature birth;
- low birth weight;
- anatomic defects (e.g., due to congenital malformations, such as cleft palate, or resulting from trauma or radiation);
- central nervous system abnormalities or injuries (e.g., neural tube defects; genetic syndromes; cerebral palsy; pre-, peri- or post-natal trauma, such as stroke or traumatic brain injury);
- neuromuscular disorders (e.g., muscular dystrophy);
- intellectual disability;
- history of, or chronic pulmonary/respiratory impairments (e.g., secondary to heart or pulmonary system deformities or malfunctions, abnormal muscle tone), which may cause aspiration on food (including liquids);
- metabolic disorders;
- oral and upper digestive tract and/or food texture hypersensitivity (e.g., some children with autism; secondary to use of nasogastric tube in some children); and
- dysphonia, especially related to vocal fold opening (abduction) and closing (adduction), such as weakness (paresis) or paralysis in one or both vocal folds.

Legal and Ethical Framework

There are a number of legal requirements that govern the provision of feeding and swallowing services to children with special needs. These include:

- the Individuals with Disabilities Education Improvement Act (IDEA 2004, encoded in the United States Code, [USC]) and its accompanying regulations (Code of Federal Regulations, [CFR]);
- Connecticut General Statutes (CGS) and the Regulations of Connecticut State Agencies (RCSA), as amended;
- regulations accompanying Section 504 of the Rehabilitation Act of 1973, as amended;
- the Americans with Disabilities Act (ADA) of 1990, as amended;
- the Family Educational Rights and Privacy Act (FERPA) of 1974, as amended, and its accompanying regulations and Connecticut regulations concerning educational records;
- the Health Insurance Portability and Accountability Act of 1996 (HIPAA) and its accompanying regulations; and
- the United States Department of Agriculture regulations governing school food programs and menu modifications.

In addition, the state regulates the practice of professionals who manage, provide or delegate feeding and swallowing services. Finally, the national professional organizations of many service providers have published documents that define a scope of practice, roles and responsibilities, and a code of ethics for their members.

Laws Regarding Identification, Evaluation and Services

IDEA 2004 and Connecticut Special Education Law. Part B of IDEA, concerning children from 3 through 21 years of age, describes the disabilities that are governed by provisions of the act and its accompanying regulations [34 CFR §300.8(c)]. A feeding and swallowing disorder is not one of the disability categories listed in IDEA; however, such a disorder may coexist in children who are identified as having one or more of the listed disabilities, including autism, developmental delay, mental retardation (Connecticut uses the term intellectual disability), multiple disabilities, orthopedic or other health impairments, or traumatic brain injury.

Federal, state and local special education funds support expenditures for these services, but parents may volunteer to use their private insurance, providing they understand the impact on their policy caps. Medicaid provides additional funding through reimbursement of health-related IEP services for Medicaid-eligible children.

Multidisciplinary teams carry out the activities required by IDEA. In Connecticut, a Planning and Placement Team (PPT) fulfills these responsibilities for children from 3 through 21. IDEA [Sec.614(b) (v) and 34 CFR §300.321] requires that the team include an individual who can interpret the instructional implications of evaluation results. When children present with concerns about feeding and swallowing, it is critical to ensure that professionals with expertise in these areas are integral to discussions and related activities.

IDEA requires states to identify, locate and evaluate all children who are in need of special education and related services [IDEA Sec. 612(3)(A) and 34 CFR §300.111]. School districts must evaluate a child in all areas related to a suspected disability [34 CFR §300.304(b)(4)]. The **evaluation** must be comprehensive enough to identify all the child’s special education and related services needs, whether or not commonly linked to the disability category for which the child is being evaluated [34 CFR §300.304(b)(6)].

Attention to the risk factors for dysphagia listed on page 8 will enable school personnel to meet their evaluation responsibilities. Evaluation responsibilities include medical services for diagnostic or evaluation purposes to determine a child’s medically related disability that results in a need for special education and related services [IDEA Sec. 632(4)(E) and §300.34(c)(5)]. For children who present with feeding and swallowing concerns, medical evaluations, including instrumental feeding and swallowing studies, are frequently necessary. Parents have the right to request an independent feeding and swallowing evaluation at the district’s expense if they disagree with the district’s evaluation [34 CFR §300.502(b)(1)]. The district must either ensure that evaluation or defend the appropriateness of its evaluation in a due process hearing [34 CFR §300.502(b)(2)]. Parents may also secure an independent feeding and swallowing evaluation at their own expense. In this case, the district must consider the results of this evaluation in determining eligibility and planning services [34 CFR §300.502(c)].

Special education and related services provided to a preschool or school-age child with an identified disability who requires these services are delineated in his or her **Individualized Education Program (IEP)**. Feeding and swallowing services must be provided at no cost to a child’s family, including evaluations, modifications, interventions and required supports for staff to implement services.

Special education is defined as specially designed instruction to meet the unique needs of the child [34 CFR §300.39(a)]. **Related services** include developmental and supportive services that are necessary to help a child with a disability benefit from special education instruction [34 CFR §3300.34(a)]. **Because a feeding or swallowing disorder is not a primary disability, feeding and swallowing services are included under related services when they are needed to support a child’s special education instruction.** Related services do not include surgically implanted medical devices (such as certain feeding tubes), their replacement [IDEA Sec. 612(26)(B)], the optimization of their functioning or their maintenance [34 CFR §3300.34(b)]. It is important to note that the regulations clarify that excluding optimization of device functioning does not limit districts’ responsibility “to appropriately monitor and maintain medical devices that are needed to maintain the health and safety of the child, including breathing, nutrition, or operation of other bodily functions, while the child is transported to and from school or is at school” [34 CFR §300.34(b)(2)(ii)]. The exclusion also does not prevent “the routine checking of an external component of a surgically implanted device to make sure it is functioning properly” [34 CFR §300.34(b)(2)(iii)]. The commentary accompanying the regulations includes nursing services, suctioning a tracheotomy and urinary catheterization in the services necessary to maintain health and safety [34 CFR page 46,571].

IDEA defines **supplementary aids and services** as “aids, services, and other supports that are provided in regular education classes or other education-related settings to enable children with disabilities to be educated with nondisabled children to the maximum extent appropriate [IDEA Sec. 601 and PR §300.42]. These could include both direct (e.g., specific skill instruction) and indirect (e.g., monitoring by a paraprofessional) feeding and swallowing services and special equipment necessary to support dietary modifications, as well as access to food items.

Children with identified disabilities may require **assistive technology (AT)** devices and services in order to feed themselves or be fed. An **assistive technology device** is any item, piece of equipment, or product

system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of children with disabilities [IDEA Sec. 601(1) and 34 CFR §300.5]. IDEA excludes medical devices that are surgically implanted from the definition of AT devices [ibid].

An **assistive technology service** [IDEA Sec. 602(1) and 34 CFR §300.6] means any service that directly assists a child with a disability in the selection, acquisition, or use of an assistive technology device. The term includes:

- the evaluation of the needs of a child with a disability, including a functional evaluation of the child in the child’s customary environment;
- purchasing, leasing or otherwise providing for the acquisition of assistive technology devices by children with disabilities;
- selecting, designing, fitting, customizing, adapting, applying, retaining, repairing or replacing assistive technology devices;
- coordinating and using other therapies, interventions or services with assistive technology devices, such as those associated with existing education and rehabilitation plans and programs;
- training or technical assistance for a child with a disability or, if appropriate, that child’s family; and
- training or technical assistance for professionals (including individuals providing education or rehabilitation services), employers or other individuals who provide services to, employ or are otherwise substantially involved in the major life functions of children with disabilities.

Procedures for providing AT devices and services for children from birth through 21 years of age may be found in the state’s *Guidelines for Assistive Technology*, which are available on the Web sites of the CSDE (<http://www.ct.gov/sde/>) and SERC (<http://www.ctserc.org>). Revisions to the 1999 edition of these guidelines are under way.

The school district is required to reevaluate a child with a disability if the PPT determines that it is warranted because of the child’s educational needs, including improved academic achievement and functional performance; or the parent’s or teacher’s request [34 CFR §300.303(a)]. The district **reevaluation** may not occur more than once a year, unless the parent and the school district agree to a more frequent schedule; but it must occur at least every three years unless the parent and the district agree that it is not necessary [34 CFR §300.303(b)]. The commentary on the regulations states that once a child has been evaluated, determined to be IDEA eligible, and the required special education and related services determined, “any subsequent evaluation of a child would constitute a reevaluation” (34 CFR, p.46,640). This applies even if an area needs to be evaluated that was not included in the initial evaluation (ibid). Due to the potentially life threatening effects of dysphagia, the significant impact of the child’s physical growth and the influence of medication changes, reevaluation is likely to be required frequently in many cases.

Distinguishing Medical and Educational Domains. Three rulings by the United States Supreme Court affect the roles and responsibilities of school districts in a number of areas, including feeding and swallowing. These cases date from the early 1980s and address issues of educational benefit, access to educational opportunities, role differentiation and cost of services.

As far back as 1982, in the case of the *Board of Education of Hendrick Hudson Central School District v Rowley* (458 U.S. 176, 1982), the court established that school districts must offer services (including

related services) that provide a floor of opportunity for children with disabilities to benefit from their education. “We conclude that ... the ‘basic floor of opportunity’ provided by the Act consists of access to specialized instruction and related services which are individually designed to provide educational benefit to the handicapped child” (ibid, finding 23). Provision of feeding and swallowing services necessary to secure a level of nutrition that supports his or her alertness and availability to benefit from education meets the standard set in the Rowley case.

In 1984, in the case of *Irving Independent School District v Tatro*, (486 U.S. 883), the court drew a bright line between medical and nonmedical services. The court affirmed the definition of medical services in IDEA’s predecessor’s regulations as those provided by a licensed physician and concluded that services that can be provided by a nurse or qualified layperson are nonmedical. Since a physician is not required to physically feed children orally or by tube (although a physician’s order and monitoring may be required), this activity is a related service that is the responsibility of school districts. Furthermore, in its ruling, the Supreme Court, drawing from the Rowley case, stated that, “A service that enables a handicapped child to remain at school during the day is an important means of providing the child with the meaningful access to education that Congress envisioned.” Reminding districts that transportation and alterations to school buildings to make them physically accessible are required, the court further stated that, “Services ... that permit a child to remain at school during the day are no less related to the effort to educate than services that enable the child to reach, enter, or exit the school.”

In 1999, in the case of *Cedar Rapids Community School v Garret F.* (96-1793), the court upheld administrative hearing and lower court decisions holding the school district responsible for providing continuous one-to-one nursing services required by a child with a disability to attend school, regardless of the cost burden to the district. The district argued that the continuous services had greater costs associated with them than the intermittent services required in the Tatro case. The court rejected the district’s multifactor test that included several cost-related considerations, stating that it was “not supported by any recognized source of legal authority. The proposed factors can be found in neither the text of the statute nor the regulations that we upheld in *Tatro* ... Continuous services may be more costly and may require additional school personnel, but they are not thereby more ‘medical’.” The implication of this ruling is that costs associated with providing necessary feeding and swallowing services cannot interfere with the provision of these services.

Administration of Medications. Children with feeding and swallowing problems often require medications in and out of school to deal with any of a myriad of related medical conditions. Understanding the interactions among various drugs, their interactions with digestion and absorption of food nutrients and their impact on the child’s state of arousal and sensory-motor aspects of feeding and swallowing is important for planning safe, effective services. The school nurse and the nutritionist (school or external) are the professionals with expertise in this area.

The role of school personnel in the administration of medications is governed by the provisions of C.G. S. Section 10-212a and RCSA Sec 10-212a 1 thru 7, inclusive. Local and regional boards of education must adopt written policies and procedures about medication administration that are approved by the school medical adviser. School nurses need to be part of the feeding and swallowing team to ensure compliance with the statutes and regulations concerning this topic and their impact on planning services for children with feeding and swallowing disorders.

Section 504 of the Rehabilitation Act. Section 504 uses the term “handicapped person,” whereas

IDEA and Connecticut laws refer to a child with a disability. The basic prohibition for public schools in Section 504 addresses excluding children from participating in, or receiving the benefits of, or otherwise being subjected to discrimination solely because of a handicap [34 CFR Reg. 104.4]. The law defines a **handicapped person** as having a physical or mental impairment that substantially limits one or more of the major life activities defined elsewhere in the law; having a record of such an impairment; or being regarded as having such an impairment [34 CFR Reg. 104.3(j)].

For purposes of this document, **physical impairment** is the handicap of interest. It is defined as “any physiological disorder or condition, cosmetic disfigurement, or anatomical loss affecting one or more of the following body systems: neurological, musculoskeletal, special sense organs; respiratory, including speech organs; cardiovascular; reproductive; digestive, genitourinary; hemic and lymphatic; skin; and endocrine” [34 CFR Reg. 104.3(j)(2)(i)]. While not all body systems on the list are associated with feeding and swallowing disorders, most of them are. Among the major life activities listed in the law that relate to feeding and swallowing are caring for one’s self, performing manual tasks and breathing [34 CFR Reg. 104.3(j)(2)(ii)].

Section 504 has several child-find, evaluation, reevaluation and service provisions that are similar to those in IDEA, of which it was a precursor. Services under Section 504 may be provided as regular education, special education or related aids and services [34 CFR Reg. 104.33(b)]. These services, provided at no cost to parents, are described in a **504 plan**, developed by what is usually referred to as the 504 team. The 504 plans generally include accommodations necessary to facilitate access to school programs. For children with feeding and swallowing handicaps, these accommodations are likely to take the form of modified food, utensils and physical arrangements for feeding or eating. However, intervention aimed more directly at feeding and swallowing may also be provided in the plan. A child who is initially served under Section 504 may require referral to special education later on; conversely a child exiting special education may become eligible for services under Section 504.

Laws Regarding Educational and Health Records

Students with feeding and swallowing disorders often have related medical problems affecting their health that require communication between school personnel and health care professionals in the community. District personnel need to be aware of the confidentiality laws to which these community professionals must adhere, as well as the procedures required in their own settings.

FERPA, Connecticut Regulations Concerning Student Records and HIPAA. This legislation, which protects the privacy of parents and students, applies to educational agencies and institutions that receive federal funds. It concerns access to and disclosure (including release and transfer) of educational records, including student health records. These records are defined as being directly related to a student, carrying personally identifiable information about the student (e.g., name, address, Social Security or student identification number), personal characteristics of the student or other identifying information [34 CFR §99.3(a)]. Records made by instructional, supervisory and administrative personnel that are kept in their sole possession and that are not revealed to other people (except temporary substitutes for those personnel) are not considered educational records and, therefore, not subject to the access, copying or disclosure provisions of the law [34 CFR §99.3(b)(1)]. Protection under FERPA transfers to students at age 18 [34 CFR §99.3(a)(5)]. In the case of a divorce, separation or custody dispute, both parents retain their FERPA rights, unless a court order or other legally binding document that revokes these rights is presented [34 CFR §99.4].

Parents, guardians or eligible students may request an amendment to the student's records if they believe that information in them is inaccurate, misleading or violates the student's right to privacy. If the district refuses, it must inform the parties seeking the amendment of their right to a hearing. If the hearing officer rules in favor of the parties requesting the amendment, the district must amend the records accordingly and inform the party of the amendment; otherwise, the parties may place a statement concerning the contested information in the record and this statement must be disclosed along with the records under the disclosure provisions of the law [34 CFR §99.21]. This provision is particularly relevant with regard to maintaining the accuracy of health information that has a bearing on safe feeding and swallowing intervention.

The law gives parents or guardians and eligible students the right to inspect and review the student's education records or to receive a copy of the requested records if circumstances effectively prevent them from inspecting or reviewing the records [34 CFR §99.10]. Connecticut regulations entitle these individuals to one free copy of their child's special education records, which the school must send within five school days of a written request for the copy [RCSA 10-76d-18(b)(2)].

Timely sharing of information from the education records of a child with feeding and swallowing problems is critical to that youngster's safety and well-being. There are three situations in which health information is most likely to be shared: among school personnel; between schools; and with outside parties, such as the child's physician and the hospital feeding and swallowing team.

Sharing Among School Personnel. FERPA permits disclosure of information in a child's educational records to school officials, including teachers who have been determined by the district to have legitimate educational interests [34 CFR §99.31]. An important exception to this is state statutes that concern disclosure of protected health information, such as CGS 19a-583 that deals with HIV. When questions arise about what constitutes protected health information, consultation with the parent, school medical adviser and school nursing supervisor is advisable [CSDE, 1992].

When considering the sharing of medical information, it is imperative to remember that, ethically, health issues belong to the student and the family. The type and amount of information shared should be limited to what is necessary in order to provide services for the benefit of the student or because of heightened concerns about safety. Functional descriptors of the student's condition or potential problem (e.g., coughing after swallowing; gagging when eating solids) should be used in lieu of medical diagnoses. The right to know versus the need to know is the guiding principle to use in the practice area. Staff should share information that is necessary for "legitimate educational interest" [ibid, p.29].

Sharing Between Schools. FERPA [34 CFR §99.31] and Connecticut General Statutes [Sec. 10-206] permit the transfer of student records (including health) without parental permission when a student enrolls in a new district. CGS Sec.10-220h requires the transfer to be made no later than 10 calendar days after the new district notifies the former district of the student's enrollment.

Sharing with Outside Parties. Information in the educational records of a child with a suspected or identified feeding and swallowing disorder frequently needs to be sent to the child's physician and other community health care providers. In this circumstance, before a school can disclose personally identifiable information from a student's record, it must secure written consent from the parents, guardian or eligible student [34 CFR §99.30].

To facilitate the receipt of health information from outside parties, school personnel need to be aware

of the privacy rule of the Health Insurance Portability and Accountability Act of 1996 (HIPAA). The privacy rule requires most doctors, hospitals or other health care providers, including speech and language pathologists (SLPs), physical therapists (PTs) or occupational therapists (OTRs) in private practice, that have a direct treatment relationship with a patient to secure written consent of the patient before disclosing his or her health information. Parents need to understand the critical importance of giving their consent for the exchange of information between their outside health care providers and school personnel. A sample HIPAA Compliant Release of Information form is available under publications on the health promotion/school nurse Web page at <http://www.sde.ct.gov/sde/cwp/view.asp?a=2678&q=320768>. A direct link to the form is available at http://www.sde.ct.gov/sde/lib/sde/PDF/deps/student/health/HIPAA_Form.pdf.

Laws and Regulations Concerning School Food Programs

To receive federal reimbursement, schools participating in the National School Lunch Program (NSLP), School Breakfast Program (SBP), After-School Snack Program and Special Milk Program must meet specific nutrition requirements. Schools must meet the Recommended Dietary Allowances (RDA) calorie goals and the Dietary Guidelines for Americans, as specified by the United States Department of Agriculture (USDA) Code of Federal Regulations. USDA regulations (7 CFR, Secs. 210 and 220) require that all planned breakfasts and lunches meet the weekly nutrient standards for the appropriate grade or age group. Additionally, depending on the menu-planning program that the school food service department chooses, specific food components or menu items, in minimum required portion sizes, must also be met.

Regulations Regarding Menu Modifications. The USDA regulates accommodations for special dietary needs in the federally funded school nutrition programs. For districts that participate in these programs, these regulations **require** substitutions or modifications in meals for children who are considered disabled and whose disabilities restrict their diet [7 CFR, Sec 210.10(g)(1)]. Included are children with feeding and swallowing disorders who are IDEA- or 504-eligible. If a school district does not participate in these federally funded programs, the USDA regulations regarding accommodating special dietary needs do not apply. However, all districts are still required to make accommodations specified by IDEA and Section 504.

Dietary accommodations for children whose disabilities restrict their diet can only be made when documented in a statement signed by a licensed physician. The USDA defines a licensed physician as a doctor of medicine or osteopathy. The physician's statement must identify the:

- child's disability and provide an explanation of why the disability restricts the child's diet;
- major life activity affected by the disability;
- food or foods to be **omitted** from the child's diet; and
- the food or choice of foods that **must** be **substituted**.

The Medical Statement for Children with Disabilities Requiring Special Meals in Child Nutrition Programs is available from the district's on the CSDE's Web site at <http://www.sde.ct.gov/sde/lib/sde/PDF/DEPS/Nutrition/MedicalNoDisabilitiesCN.pdf>. Further information about this topic may be found in the USDA Food and Nutrition Service's guidelines (2001), and the CSDE's Accommodating Special Dietary Needs: Guidance for School Nutrition Programs (October, 2007), available at the same Web site (or at <http://www.sde.ct.gov/sde/lib/sde/PDF/DEPS/Student/NutritionEd/AccommodatingSpecialDiets.pdf>).

Cost of Meals. Schools may not charge IDEA- or 504-eligible children with feeding and swallowing disorders who require food substitutions/modifications more than they charge other children for program meals or snacks. In most instances involving food substitutions, the school food service account will be used to pay the cost of special food and food preparation equipment. Food service personnel will generally be responsible for providing the alternate meal. For example, if a child must have a pureed meal, it is reasonable to expect the school food service program to purchase a blender or food processor and to have the meal prepared by the food service staff. With appropriate documentation on the physician's medical statement referred to above, the school food service could also be responsible for prescribed food supplements or tube feeding formulas that are required as substitutions or modifications to the USDA-funded meals or snacks.

In most cases, children with disabilities can be accommodated with little extra expense or involvement. However, when the school food service program has difficulty covering the additional cost, there are several alternative funding sources to consider. These include the school district's general fund; IDEA; Medicaid, Early and Periodic Screening, Diagnostic and Treatment Program; Supplemental Security Income; Medicare; Maternal and Child Health Services Block Grants; and community sources, (e.g., PTA, voluntary health associations and other local community groups). For more information on these funding resources, consult the USDA's manual about accommodating children with special dietary needs (2001). In the final analysis, the overall responsibility for accommodating children with disabilities (including those that involve feeding and swallowing disorders) rests with the school district. Additionally, the school district administration is responsible for allocating the personnel who will work with individual children.

Philosophical Framework

The following basic principles should guide the provision of feeding and swallowing services in schools. The rationale for each principle is provided below each statement.

1. To be available for learning in its broadest sense, children require good nutrition.

“... good nutrition is an essential basis for a child’s availability for learning. Lessened nutrition affects energy and alertness, thus affecting success in the entire school program. Also, mealtimes provide an opportunity for socialization and communication – important components of any school program” (Kurjan, 2000, p.47).

“Consistent provision of adequate calories, protein, and fluid helps to optimize growth and development of the child, which is essential for the learning process to occur. Problems with feeding or swallowing, if not recognized early, may rapidly result in malnutrition and growth failure” (Arvedson and Brodsky in Homer et al., 2000, p.63).

“The most critical developmental period of brain growth and function occurs during the last trimester of pregnancy and the first two years of life. Malnutrition during this period may have long term developmental consequences” (Newman, 2000, p.282).

2. The complex physiology of feeding and swallowing is rooted in neurologic and anatomic structures that, in turn, affect the functioning of several body systems (including respiratory, gastrointestinal, sensory, motor). A team approach to evaluation and intervention is required to address the multiple needs of children suspected of having, or diagnosed with, feeding or swallowing problems. While a case manager approach may be used, no single discipline can or should have sole responsibility for the numerous activities required to ensure a child’s safe eating and drinking.

“Effective management of ... medically complex children depends on the expertise of many specialists, working independently and as a team. An interdisciplinary approach offers the benefit of coordinated consultation and problem solving for multiply coincident and interrelated problems” (Arvedson and Brodsky, 2002, p.5).

“... no one professional discipline ‘owns’ feeding. It is an environmental and social process as well as a process of deglutition that involves not only a variety of professionals, but also the parents themselves” (Kurjan, 2000, p.44).

- 3. The medical complexities of feeding and swallowing and related respiratory and pulmonary concerns require strong links between the school program and the child’s physicians and related health professionals. This contact may be periodic or ongoing, depending on the child’s needs.**

“Primary to a successful ... swallowing program is as healthy a child as possible. Medical, surgical, and nutritional considerations are all important ...” (Arvedson and Brodsky, 2002, p.389).

- 4. Feeding and swallowing are physical acts that occur in social, linguistic, cultural and environmental contexts that must be considered when planning evaluations and interventions.**

“... mealtimes are important for the development of social, cognitive, and language skills ... When families must focus on the mechanics of feeding, the pleasurable, social aspects of the meal are often forgotten” (Wooster et al., 1998, p.38).

- 5. Care must be taken to distinguish between feeding and swallowing problems that are primarily physically or behaviorally based. For example, what appears to be a behavioral disorder (e.g., refusing certain textures) may, in fact, be a sensory-based or an esophageal disorder. While it is important to prevent physical problems from becoming primarily behavioral problems, it should not be assumed that all children who have been fed non-orally will experience difficulty transitioning to oral feeding. It is important to note that this document is not directed toward treating eating disorders, such as anorexia or bulimia. However, children with these disorders may develop dysphagia secondary to their eating disorder.**

“In some children, as changes occur over time, what started out as a physiologically based feeding problem evolves into a more strongly behaviorally based problem ... It is not unusual to find children with strong aversions to oral feeding if they have not had experiences tasting and swallowing food early in their development, particularly if they lack introduction to solid food at appropriate developmental levels” (Arvedson, 1997, p.55).

- 6. Reevaluation of feeding and swallowing skills may need to occur more frequently than for other areas of functioning because of the influence of development on anatomic structures or because of fluctuating changes in medical status.**

“Feeding and swallowing skills change dramatically during the first three years of life. Developmental gains in feeding and swallowing are due to the combined influences of anatomic growth, neuromotor maturation and learning” (ASHA, 2004, p.85).

“Medications may enhance an individual’s swallowing ability or interfere

with both the oropharyngeal swallow and an individual's appetite....As medications change, a repeat VFSS [Videofluoroscopic Swallowing Study, added] may be necessary to assess any potential effects on swallowing physiology" (ASHA, 2004, p.89).

- 7. Because of the significant health and safety issues related to disorders of feeding and swallowing, school district personnel and families must make special efforts to develop and abide by mutually agreed upon interventions. Priority must be given to the child's safety and well-being.**

"Implementation of a successful dysphagia program is ensuring that children will receive safe, adequate nutrition, allowing them to make developmental and academic gains, thereby fulfilling their potential" (Homer et al., 2000, p.69).

Establishing a Feeding and Swallowing Team

Children with feeding and/or swallowing needs require a team approach to evaluation and treatment in order to bring together the knowledge, training and experience of many professionals and family members for the benefit of the child. The composition, location, size and operating style of the feeding and swallowing team will vary according to local circumstances. Large school districts having many children with feeding and swallowing disorders scattered across buildings may need complete teams in several schools or they may find a centralized core district team with subteams in particular schools more appropriate to their needs. Medium-sized districts may need a complete centralized team whose members are available to all their schools. A local feeding and swallowing team may not be feasible in small school districts with limited numbers of children requiring feeding and swallowing services or with insufficient personnel resources. In these settings, a regional team or local case manager in close contact with a hospital or community-based medical team may be the solution. Depending on the needs of children and families and the qualifications of personnel, these multidisciplinary teams may operate in an interdisciplinary or transdisciplinary manner.

An interdisciplinary approach frequently includes co-treating, with each discipline drawing attention to the child's needs as related to their particular areas of expertise. Typically, speech and language pathologists (SLPs) or occupational therapists (OTRs) will take the lead in actually feeding the child and/or training him or her in compensatory strategies and direct skill building. This is because their training generally includes study of the anatomy, neurology and physiology of the upper aerodigestive system. Because of their training in voice disorders, SLPs also have special understanding of laryngeal anatomy, neurology and function, which is critical in dealing with aspiration issues.

Transdisciplinary teaming involves more role release than in the interdisciplinary model. With cross training, different team members perform some of each other's functions and one professional assumes the role of primary intervention provider. For example, PTs may train OTs and SLPs and their assistants or aides about positioning the child to reduce or eliminate abnormal reflexes that may interfere with feeding and swallowing and to support the necessary coordination of respiration, feeding and swallowing. SLPs may train PTs and OTs and their assistants or aides in strategies to facilitate relevant communication if they are feeding the child. OTs may train PTs and SLPs and their assistants or aides in self-feeding strategies. Districts considering a transdisciplinary approach need to be aware of what competencies underlie the tasks that need to be performed and whether individuals who would be assigned those tasks have the necessary competencies. (See ASHA, 1996 and 1997 in the Additional References section of these guidelines for information about multiskilling.) This approach also requires consideration of the scopes of practice and codes of ethics of the professions involved. Ongoing attention to the evolving evidence base in the field of pediatric feeding and swallowing, assessment of competence and regular continuing education is also important when using this model.

A needs assessment will allow informed decisions about what team structure and size are desirable. Surveying the district for children who present with the signs and symptoms of, and risk factors for, dysphagia, and examining attendance records that might raise flags about absences due to aspiration-induced respiratory illnesses, will help determine how many children may need feeding and swallowing services. A sample referral form that may be used for needs assessment purposes can be found in **Appendix B**.

Purpose and Tasks of the Team

The purpose of the pediatric feeding and swallowing team is to provide a centralized structure for addressing the complex issues related to feeding and swallowing disorders that exist or may arise. The major tasks of the team include:

- identifying children at risk for feeding and swallowing disorders, or with already identified problems in these areas, who require specialized services or accommodations;
- consulting and collaborating with families, their physicians and related community-based health care providers in a timely manner regarding identification, evaluation and reevaluation procedures, and the development, implementation and monitoring of appropriate evidence-based programs and services;
- coordinating the scheduling and delivering of services;
- designing, implementing and monitoring a child’s health care plan that includes emergency procedures (e.g., administering medications and suctioning, informing parents of emergency situations, implementing cardiopulmonary resuscitation, notifying ambulance and hospital personnel);
- developing, implementing and monitoring risk management procedures for infection control;
- determining what special equipment needs to be available to carry out feeding and swallowing activities safely (e.g., sink, gloves, masks, disinfectants, tubes, food preparation equipment, suctioning equipment);
- resolving issues related to different perspectives about the child’s and family’s needs with priority for safe nutrition and hydration;
- providing information to families, other school personnel, child peers and the community at large about feeding and swallowing disorders and their management;
- training and supervising other school personnel to ensure their effectiveness in delivering safe feeding and swallowing services in accordance with a child’s feeding plan;
- maintaining program and individual case records that conform to confidentiality requirements and allow for data-driven decision making; and
- evaluating the effectiveness of dysphagia programs and services and making data-based recommendations for improvements to administrators.

Composition of the Team

“Pediatric dysphagia teams typically are composed of several disciplines that share knowledge and interest in overlapping functions that involve multiple anatomic and physiologic systems” (Lefton-Greif and Arvedson, 1997, p.6). Additional expertise about the psychological, social and environmental aspects of feeding and swallowing is necessary.

Membership on the feeding and swallowing team will often overlap with that of a PPT (Connecticut’s IEP team), 504 or Assistive Technology team. However, the team is envisioned as a coherent group that provides continuity of care and develops considerable expertise that can be shared. “A cohesive team does not automatically result when a group of professionals walk into a room together. Time and effort must be expended in the form of organizational meetings, co-evaluations and treatments and awareness of individual skill competencies ...” (Wooster et al., 1998, p.36). Most likely, the feeding and swallowing team will comprise certain core members and add consultant team members as appropriate.

Core district/school team members should include the family, nurse, occupational therapist, speech and language pathologist, physical therapist and dietitian or nutritionist. These members need to be given time in their schedules for regular meetings so that they can be simultaneously updated on the status and needs of children receiving services and plan jointly to address the needs of children related to this information.

Consulting team members include additional members from within or outside the school who attend meetings as needed. **Internal consultants** can include school personnel such as the social worker, psychologist, school guidance counselor, school food service personnel, PT, OT and SLP assistants, classroom or program paraprofessionals, teachers and administrators. They supplement the core team as needed to help address issues that fall within their areas of practice or knowledge about the child. **External consultants** can include the child's pediatrician, ear/nose/throat physician, gastroenterologist, neurologist, oncologist pulmonologist, radiologist, craniofacial team, and other health related professionals (OTR, SLP, PT, dietitian or nutritionist).

Relationships with these individuals need to be cultivated when the feeding and swallowing team is first established to ensure that the entire team operates with the same basic understandings, especially the procedures that the school or district team will follow. "When joint consultation is not feasible, all professionals working in this specialty area of pediatric dysphagia must strive for interactive and timely communications" (Arvedson 2000, p.28).

Major roles of the external consultants, as appropriate to their practice area and involvement with a particular child, include:

1. Monitoring the child's overall health or specific health areas.
2. Making referrals for diagnostic tests.
3. Conducting a clinical/medical examination of the upper aerodigestive tract.
4. Conducting instrumental examination of the child's swallow.
5. Reporting and interpreting examination findings to the school team (that includes families), including stating implications for safe feeding in school and at home and providing pre- and proscriptive information regarding candidacy for particular intervention strategies (e.g., diet content and texture, frequency of feeding, amount of intake per feeding and risk management procedures).

Qualifications of Team Members

Knowledge, skill and training in the evaluation and treatment of feeding and swallowing disorders are addressed in the training, scope of practice, licensure and certification and ethical codes of multiple professional disciplines. However, pediatric feeding and swallowing, as a specific curriculum area in training programs, is a relatively recent phenomenon. Even when it is available as an area of study and practicum, not every graduate of an approved training program will have elected to pursue this area of practice to the same extent. Furthermore, there are many practicing professionals who graduated before the establishment of this area of practice in their professions and have not had training or experience managing pediatric feeding and swallowing disorders.

Team members must possess all the qualifications mandated by the agencies and organizations that oversee their professional practice. Typically state and national licensure and certification require evidence of certain

basic or general competencies. Most health-related professions have published additional competencies specific to the evaluation and treatment of feeding and swallowing disorders. (See the Additional References section for sources for these documents.) These should be used to guide the selection of team members. In addition, team members are responsible for and need administrative support for practicing within their scope of practice, expressing the limits of their knowledge and skills, and for adhering to the code of ethics of their profession.

Administrative support is essential for the creation of a feeding and swallowing team, including ensuring that team members have, or are supported in attaining, the essential competencies of their professions in this area of practice. Provision of opportunities for hands-on initial training and continuing education of team members is also critical. As Power-de Fur (2000) states, “This is an area where self-study is not sufficient.” Nor is coursework alone.

Districts should examine their liability insurance policies for adequacy of coverage of personnel providing feeding and swallowing evaluations and interventions. This needs to be a topic that is openly discussed. Many professional organizations facilitate the availability of individual practitioner liability insurance policies for their members. Team members and district administrators need to decide whether district insurance is sufficient or whether individual liability insurance should be added. It is important for district attorneys to be part of the discussions about how the district will address feeding and swallowing issues.

KNOWLEDGE AND SKILLS FOR CORE TEAM MEMBERS

The national associations of the key professionals involved in pediatric feeding and swallowing have published several relevant documents related to the knowledge and skills needed for this area of practice. These documents can be used to help identify personnel with qualifications to serve on a district or school team. If qualified personnel are not available, the competencies can be used to identify the training needs of those interested or selected to participate on a team or to oversee feeding and swallowing services. They can also be used when considering hiring external consultants. Regardless of which discipline assumes the role of team leader or lead for any particular child, decisions regarding the safety, comfort and success of eating and drinking must be made by professionals who have undergone rigorous training. Achievement of proficiencies should be documented and systematic plans for attaining proficiency should be in place in settings serving individuals with swallowing and feeding problems” (ASHA, 2002, p.81). ASHA’s *Competency Checklist: Swallowing and/or Feeding Disorders* (2002) provides a format for the rating of team members’ knowledge and skills that could be readily adapted by districts. Although designed for SLPs, the competencies generalize across the disciplines that should be represented on a school or district team.

Occupational Therapist (OTR). The American Occupational Therapy Association (2004) has approved entry-level knowledge and skills for OTRs. Knowledge of appropriate assessment and intervention procedures for addressing feeding and swallowing in the school setting include:

- prefeeding factors, including sensory stimulation; feeding schedule that matches with hunger; equipment modification; positioning modification; oral-motor skills; problem solving with paraprofessionals and teacher;
- oral phase of eating (for OTRs only in collaboration with the medical community), including: the oral structures involved in manipulating bolus safely before propelling; how structures are coordinated for bolus formation; speed of the oral phase to support sufficient oral intake; respiratory

control factors that permit safe manipulation of the bolus; level of perception of qualities of food and utensils (tactile, temperature, proprioception and gustatory);

- interventions appropriate for the school environment, including using eating/feeding activities appropriate for the child's development and disability (e.g., facilitating social interactions during feeding; selecting, modifying, and setting up mealtime equipment; providing appropriate positioning; obtaining and maintaining optimal arousal);
- training and evaluating others who carry through eating/feeding interventions during school meals, including paraprofessionals, teachers, other related service providers; and
- instrumentation, as related to knowing when to refer for instrumental evaluations of swallowing and how to interpret results that affect feeding and swallowing in the schools.

Speech and Language Pathologist (SLP). SLPs who have graduated in the last 10–15 years from a graduate program accredited by the American Speech-Language-Hearing Association (ASHA) are likely to have had academic coursework and practicum experience in the area of swallowing disorders. ASHA has published documents that address the basic competencies, roles, knowledge and skills that SLPs practicing in the area of feeding and swallowing should demonstrate.

Of the competencies needed for management of feeding and swallowing disorders delineated by ASHA (2002), the following are relevant to school SLPs:

- identifying students at risk for a feeding and swallowing disorder;
- providing treatment for students with a diagnosed feeding and swallowing disorder;
- providing education, counseling and training to students with a feeding and swallowing disorder, their families, peers, other team members and school colleagues;
- managing or serving as a significant resource on the district's or school's feeding and swallowing team;
- maintaining quality control/risk management program;
- providing discharge/dismissal planning and follow-up care;
- teaching and supervising persons, clinical fellows, supportive personnel, and students-in-training; and
- providing public education and advocacy for serving individuals with swallowing and/or feeding disorders.

Nurse. The American Nurses Association and the National Association of School Nurses (2005) and the CSDE (1992; 1997) have publications that address knowledge of nursing interventions for students with swallowing disabilities, including:

- airway suctioning;
- precautions to prevent aspiration;
- oral feeding and non-oral methods (tube feeding, IV feeding);
- emergency care (CPR, Heimlich technique, suctioning, airway maintenance);
- feeding protocol;
- positioning, in collaboration with OT and PT;
- safety and surveillance;
- referral to medical teams and ongoing communication with medical teams; and
- nourishment preparation.

Physical Therapist (PT). Although the American Physical Therapy Association offers no specific

guidelines regarding the practice of physical therapy as it relates to the treatment of children with feeding and swallowing disorders, the school-based PT has knowledge and training to provide input to the school team that includes:

- positioning (tonal issues, head/trunk control);
- seating options (e.g., wheelchair, adapted chair); and
- assistance with assistive technology needs.

Dietitian or Nutritionist. A registered dietitian is a food and nutrition expert who has met the academic and professional requirements of the Commission on Dietetic Registration (CDR). In Connecticut, both dietitians and nutritionists are certified by the State Department of Public Health. Prerequisites include current certification from the CDR or having taken CDR's registration examination and holding a minimum of a master's degree focused on human nutrition and dietetics. The American Dietetics Association (ADA, 2005) has issued standards of practice and professional performance that should be used by districts to identify a dietitian or nutritionist qualified for a role on the feeding and swallowing team. The ADA standards address four areas of nutrition practice: assessment, diagnosis, intervention and monitoring/evaluation. Knowledge and skills relevant to the activities of the dietitian or nutritionist on the feeding and swallowing team include:

- evaluating the child's diet for factors that affect health, including nutrition risk (e.g., nutrient adequacy and appropriateness of food and beverage intake, meal patterns);
- evaluating nutrition consequences of health and disease conditions and physical activity habits and restrictions;
- using the child's body measurements to help assess impact of diet on growth and development;
- identifying signs, symptoms and etiology of the child's nutrition problems;
- validating nutrition diagnosis with others (e.g., child, family, other health care professionals);
- collaborating with core and consulting feeding and swallowing team members to design and coordinate scientifically based nutrition plan with measurable outcomes, including selecting, implementing or delegating (as appropriate and with supervision) activities to address identified problems;
- developing or suggesting materials to help implement plan; and
- monitoring child's and team's understanding of, and adherence to, plan, determining child's progress, identifying unintended barriers and recommending modifications, as appropriate.

Paraeducators. Support personnel may play a role in evaluating students and implementing their intervention plans. These include nursing, occupational and physical therapy and speech-language pathology assistants and classroom paraprofessionals. Their qualifications, appropriate roles and supervisory requirements are delineated in various laws and guidelines. The following CSDE documents should be consulted regarding the use of support personnel: *Specialized Health Care Procedures Manual for School Nurses* (1997); *Guidelines for Occupational Therapy in Educational Settings* (1999); *Guidelines for Physical Therapy in Educational Settings* (1999); *Guidelines for the Training, Use and Supervision of Speech-Language Pathology Assistants* (1999); and *Guidelines for Training and Support of Paraprofessionals Working with Students Birth to 21*. The professionals who oversee the work of their paraeducators should stay current with relevant laws and standards of practice.

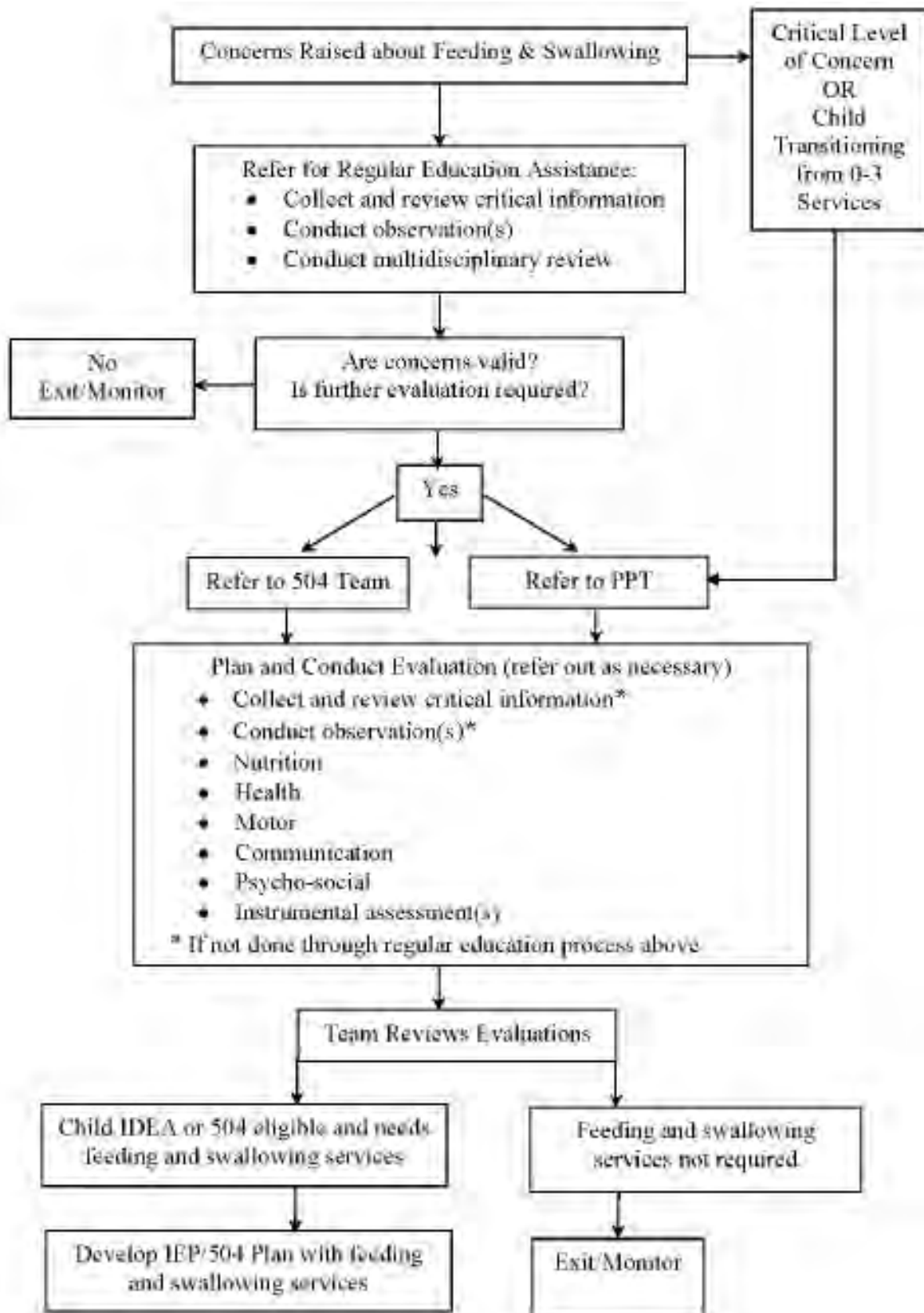
Team Communication

Students with feeding and swallowing difficulties often receive care, intervention and services both within and outside the school setting. Therefore, it is essential for school personnel to establish and maintain good communication among outside providers, the family, and the school. A primary case manager at the school level should be established to coordinate communication with the various providers. This case manager can ensure consistency in communication and avoid miscommunications and fragmentation in intervention and the plan of care for individual students.

The primary case manager should engage in regular communication between the school and outside provider. The extent of the communication will vary depending on the stability of the student. Common concerns that should be addressed in these communications include:

- changes in feeding and swallowing patterns;
- changes in oral intake;
- changes in weight, either weight gain or weight loss;
- recent hospitalizations, illnesses, surgeries or other medical concerns; and
- additional family or school support/resources needed.

Addressing Feeding and Swallowing: New Referrals



Implementing Feeding and Swallowing Services

Most children with feeding and swallowing difficulties are likely to require services to address their problems under the auspices of special education. Some children (e.g., those who have recovered from an illness that required tube feeding during a hospital stay, or who have undergone oral or maxillofacial surgery and need a brief period of support and modified food texture to return to normal oral feeding) may qualify under Section 504 of the Rehabilitation Act. The following sections include procedures for situations where concerns about feeding and swallowing are being raised for the first time, as well as for situations where a child has been already identified with a feeding and/or swallowing disorder.

To assist with identifying students at risk for feeding and swallowing disorders, school personnel will need training concerning the normal development of feeding and swallowing, characteristics of these disorders and the populations in which they are most likely to occur, cultural factors related to eating and drinking, and assessment procedures.

New Referrals (flowchart on page 27)

These referrals include children for whom concerns about feeding and swallowing are emerging but who have not yet been identified with a disability under IDEA or Section 504 of the Rehabilitation Act. They also include children transitioning from Birth to Three Services who have Individualized Family Service Plans (IFSPs) for feeding and swallowing services, or for whom feeding swallowing issues are being raised for the first time.

Referral for Regular Education Assistance

Prior to referring a preschool or school age youngster to special education, Connecticut regulations require districts to explore and, where appropriate, implement alternative strategies in regular education [RCSA Sec.10-76d-7]. Schools typically have a process for addressing this requirement either through assignment of one or more staff members with expertise in the area of concern or through multidisciplinary grade and/or building teams such as a child study team (CST) or student assistance team (SAT). If the regular education team already includes personnel with expertise in feeding and swallowing, it should be positioned to handle requests for assistance with feeding and swallowing. However, if this is not the case, these **referrals need to be promptly directed to professionals with expertise in feeding and swallowing** (e.g., a district or school feeding and swallowing team). However this stage is managed, parents need to be informed of the concerns and invited to become active participants in the ensuing activities. The child's physician and/or the district's medical adviser should be consulted during this process. The timelines for this regular education process will vary, depending on the level of concern about a particular child's safety when eating and/or drinking. **If the level of concern is considered critical by district personnel, the child's parents or physician, or other referral source (e.g., the child has developed a serious medical condition), the referral should bypass the regular education assistance phase and go promptly to the PPT.**

Following the steps below will help determine whether a youngster might benefit from regular education strategies or needs to be referred for a more comprehensive evaluation of feeding and swallowing through a PPT or 504 Team.

1. Staff **collect and review critical information** from family, school personnel, child's physicians and outside service providers, including:
 - description of the eating and drinking patterns of concern, with specific examples of the behaviors, times, locations and strategies that have been tried and their outcomes;
 - birth, medical and developmental history (Secure parental permission for records release.);
 - current health status, including variations from day-to-day and during the course of a day; medications and their effect on lubrication of the aerodigestive tract, condition of oral mucosa (e.g., antibiotics and thrush), alertness, taste (e.g., antihistamines and antidepressants may cause metallic taste), appetite, gastrointestinal function (e.g., heartburn, reflux), or motor coordination; respiratory status and oxygen needs, including presence of tracheostomy tube or oxygen equipment;
 - feeding and nutrition history, including past and current diet; cultural and other factors related to food selection, ages of introduction of foods and feeding utensils and development of child's independence; child's rate of growth (weight and height); food allergies; food and texture preferences and intolerances; drug and nutrient interactions; and
 - child's attendance records.

2. Trained personnel **conduct an observation** of the child's typical feeding and swallowing behavior. The purpose of the observation is to gather information about the child's:
 - diet content, texture and manner in which it is presented (including cultural considerations and adaptive equipment);
 - posture, positioning and muscle tone for trunk, head and extremity control;
 - behavior, including food preferences, acceptance/rejection of quantity or type of food presented, and interactions with any particular feeder (pleasurable or stressful);
 - developmental feeding level;
 - physical characteristics, including level of arousal, maintenance of alertness, presence of reflexes, coordination of suck-swallow and breathing, respiration pattern and rate, heart rate, elevation of the larynx during swallow and cough productivity;
 - oral sensorimotor function, including awareness of presence of food in or near mouth; response to food temperatures, tastes and textures; control for suckling, sucking, sipping, biting, rotary chewing or vertical munching, bolus formation and preparation for swallowing; drooling of food and/or saliva; clearing lips and mouth of food or pocketing of food, decreased or hyperactive gag reflex;
 - indicators of possible aspiration (during or post-swallow) or efforts to prevent it, including color change; voice changes, including wet/gurgly quality; gagging; throat clearing; or coughing;
 - sensory functioning, including vision, hearing, taste and smell, hunger, sensory regulation/defensiveness, pain on swallowing;
 - communicative behavior, including information processing, oral and non-oral expression of wants and needs, and social conversation typical for age during meal or snack time;
 - success in feeding and swallowing, including placing the food in the mouth, chewing adequately,

- clearing food from the lips and mouth, and coordinating swallowing; and
- length of time and energy used to complete feeding/eating overall (eliminating time child spends “playing” with food), including self-initiation and persistence and the child’s need for cueing or encouragement.

If the child is not a self-feeder, it is also important to note who is feeding the child and to observe the interactions between the feeder and the child, including the:

- techniques and manner used in feeding or assisting the child;
- dynamics of the child-feeder interaction.
- feeder’s reading of, and response to, the child’s oral and non-oral cues regarding the feeding itself;
- child’s response to the feeder; and;
- feeder’s role as a social communication partner.

Parent permission is advisable prior to carrying out the observation. Where appropriate, the parent should be invited to attend and to assist with feeding the child. Observation in the natural setting may need to be supplemented or replaced with observation in a more private venue, depending on the level of success with which the child is able to self-feed. The child’s overall status (medical, neurological, motor, communication) and some judgment about his or her reaction to being observed will help determine the number of personnel who should be present during the observations. This study may need to be conducted for more than one feeding, including different meals or snacks, since feeding and swallowing function may vary with different types of foods and at different times of the day (especially if the child’s medical condition varies over time). Videotaping where possible (with appropriate signed permission) is useful for documenting the behaviors for observation by team members who are not present during the direct observations and for recording baseline behaviors. (Videotapes also can be used to create a portfolio for monitoring the effectiveness of particular intervention strategies and the child’s progress.) Foods the child normally eats and utensils he or she typically uses should be on hand.

Infection control procedures, including universal precautions (e.g., washing hands, using gloves) should be followed during the observations. Emergency procedures should be in place and understood, so that quick action to protect the child can be taken, should it be necessary.

3. A **multidisciplinary review** of the information from steps 1 and 2 is conducted by professionals representing different disciplines so that recommendations and an appropriate plan of action can be formulated. This consultation would ideally take place within the feeding and swallowing team. The outcomes of this review may include:

- determination that the child’s eating behaviors, including feeding and swallowing are within normal limits and require no further attention at this time;
- recommendation for consultation with the child’s physician and/or district’s medical adviser (as appropriate) and caregivers to discuss whether strategies that can be implemented safely at home or within regular education (e.g., modifying the feeding schedule, eating environment, positioning, child’s or feeder’s behavior; physically assisting the child; providing adaptive equipment, facilitating constructive communicative interactions);

- referral to the school's the PPT (use standard CSDE form) or 504 Team for more comprehensive evaluation of the child's feeding and swallowing behaviors, possibly including a recommendation for medical evaluations and/or instrumental swallowing assessment.

Appendix C contains a sample form for recording the information gathered during the foregoing three steps.

Children Transitioning from the Birth to Three System

For children who have been receiving Birth to Three services, the Birth to Three System must convene, with parental approval, a transition meeting for toddlers who may be eligible for preschool special education and related services from their local school district, in order to plan next steps (IDEA Sec. 635(a)(9)). This meeting must be held at least 90 days before the child's third birthday (ibid) and district personnel are required to participate (34 CFR §300.124). Some youngsters may have been receiving feeding and swallowing services described in their IFSPs. For others, concerns about feeding and swallowing may be emerging around the time of transition. The transition meeting presents an ideal opportunity to review any concerns, evaluations and interventions related to feeding and swallowing. The transition plan might include school district personnel carrying out the three steps described above under early intervening services to develop an initial picture of the child's needs. To determine eligibility under Part B, districts must hold a PPT (use appropriate CSDE forms) and follow the procedures described below.

Referral for Comprehensive Feeding and Swallowing Evaluation

At the initial PPT meeting, the team will review the referral and accompanying data before determining the need for additional evaluation [IDEA Sec. 614(c) and 34 CFR § 300.305]. In planning the comprehensive evaluation, the PPT and other qualified professionals, as appropriate, must review existing evaluation data on the child, including evaluations and information provided by the parents of the child, current classroom-based local or state assessments and classroom-based observations, and observations by teachers and related service providers; and, on the basis of that review, and input from the child's parents, identify what additional data, if any, are needed to determine whether the child has a disability and what his or her educational needs are.

The information gathered in steps 1 and 2 on page 29 will help fulfill the foregoing legal requirements. The PPT may decide that this information needs to be further clarified, updated or supplemented to determine special education eligibility and develop an IEP, or to determine what additional assessments need to be conducted. In this regard, it is important to note that screening is not to be considered an evaluation for purposes of special education eligibility determination [IDEA Sec. 614(a)(1)(E) and 34 CFR § 300.302]. If the team determines that additional data are not required, the district must notify the parents of this determination and the reasons for it, as well as their right to request an assessment. In these circumstances, the district is not required to conduct any additional assessments unless the parents request an assessment [IDEA Sec. 614 (c) and 34 CFR §300.305(d)].

In contrast to IDEA, Section 504 is silent about evaluation planning procedures; 34 CFR, § 104.35(b) merely requires that standards and procedures for evaluation be developed by the agency receiving 504 funding. However, the procedures mentioned above make sense as a starting place for planning a 504 evaluation.

Purpose of a Comprehensive Feeding and Swallowing Evaluation

The comprehensive evaluation needs to address the functioning of the multiple systems that are involved in feeding and swallowing. The purpose of a comprehensive feeding and swallowing evaluation is to determine the:

- extent to which the difficulties stem from food preferences (the child's or family's); behavioral issues; or medical, physical or cognitive problems (including anatomic, neurophysiologic, sensorimotor and medications);
- child's nutritional status and needs;
- food delivery system (oral or non-oral or some combination of these), including any food service preparation equipment or assistive technology required to meet the child's nutritional needs safely;
- feeding schedule;
- quantity and texture of food to be offered at meals and snacks; and
- components of the emergency plan.

Parental Consent for Initial Evaluation

Informed parental consent for an initial evaluation is required under IDEA, unless a district can demonstrate that it took reasonable measures to obtain the consent and the parents have refused to give it [IDEA Sec. 614(a)(D)(i)(I) and 34 CFR §300.300(a)]. School districts may override parental refusal for initial evaluation by pursuing due process, including mediation; however, they are not required to do so [IDEA Sec. 614(a)(1)(D); 34 CFR §300.300(a)(3) and RCSA §10-76h-3(c)].

Working with families to obtain the necessary consent is particularly crucial when there are concerns about the child's health and safety related to feeding and swallowing. At this time, use of visual aids may be helpful to explain the anatomy and physiology of the feeding and swallowing mechanism and what happens during aspiration. If pursuing due process is necessary, however, district personnel may request in the interim written parental permission to consult with the child's physician and seek to obtain a letter from him or her assuring that it is safe for the child to continue eating as he or she has been doing. The child should be monitored when eating or drinking. Personnel need to ensure that procedures for emergency medical management are in place and understood by staff. Districts may also request an expedited hearing or an interim ruling from the hearing officer to address the safety of the child while the "stay put" provisions of due process are in effect. Concerns about the child's health, safety or welfare may be sufficiently severe (e.g., choking, aspirating) for the PPT to recommend homebound instruction, if the condition prompting the concerns will require the child to be out of school at least three weeks [RCSA Sec. 10-76d-15(b)(2) and 10-76-15(c)]. Since school district personnel are mandated reporters of suspected child abuse and neglect [CGS Sec. 17a-101a], they will need to consider the child's presenting symptoms, in determining the appropriateness of a referral to the State Department of Children and Families (DCF).

Components of a Comprehensive Feeding and Swallowing Evaluation

Based on the information at its disposal, the PPT or 504 Team may decide that one or more of the following evaluations is required:

- nutrition;
- health;
- gross and fine motor;
- communication;
- cognition, social, behavior; and
- instrumental swallow study when there are concerns about choking, aspiration, or pharyngeal or esophageal issues.

Most school districts will have professional personnel on hand to conduct the basic health, motor, communication and psychosocial evaluations. They may have personnel trained to carry out the nutrition assessment as well. School district administrators are responsible for ensuring that their personnel have the level of competency necessary to perform these assessments. This includes providing the training that is necessary to ensure competence, including observing demonstrations and participating in supervised practice. If this level of assessment cannot be safely carried out by their own personnel or by external consultants, administrators need to see that the child is referred to his primary care physician for coordination of referrals to the appropriate professionals. An “in-house” feeding and swallowing team can expedite the evaluation process, which is critical to the child’s safety. Recommendations for medical and instrumental examinations of swallowing require referral to the child’s physician. The school nurse is the ideal team member to coordinate such referrals and the receipt of test results.

The material that follows presents an overview of the areas that need to be considered for evaluation and major aspects to be examined within the various domains.

NUTRITION

While feeding and swallowing disorders do not necessarily compromise nutrition, children with these disorders frequently develop, or are at risk for developing, problems related to inadequate nutritional intake (Kovar, 1997). If the oral route provides inadequate nutrition, non-oral routing will be needed to meet the child’s nutritional needs.

A registered pediatric dietitian (RD) is the professional most suited to carry out the nutritional assessment, which includes a study of the child’s caloric and nutrient needs, the adequacy of the child’s diet, food preferences and interpretation of this data in relation to developmental growth charts. Because many districts do not have dietitians on staff, this assessment will likely be conducted through a referral to the child’s physician.

Factors that affect food quantity and quality or utilization of nutrients include:

- altered nutrient and/or calorie needs due to a medical condition;
- problems with the oral cavity that can affect the ability to ingest and chew food;
- nutrient deficiencies;
- gastrointestinal problems such as constipation, diarrhea and vomiting that affect absorption or cause loss of nutrients;
- poor appetite or food intake;
- malabsorption;
- poor growth/weight gain or excessive rate of weight gain;
- child’s activity level as related to metabolic rate;

- oral sensitivity that can affect toleration for a variety of food types and textures and prevent the child from consuming adequate nourishment orally;
- inappropriate feeding behaviors that can affect quantity of food intake (e.g., overstuffing the mouth) and, therefore, caloric intake;
- drug/nutrient interactions;
- relationship between adequate nutrition and physical and mental development;
- supplementation (with or without prescription);
- excessive parental stress regarding feeding that can result in the child refusing food (which, in turn, can lead parents to force feed); and
- impact of special diets that may be explored in treating other disabilities (e.g., elimination diet or gluten-free or lactose-free diet for autism).

Food diaries, growth charts, and laboratory tests are some tools that the RD uses for the nutrition assessment.

Food diaries. Either a 24-hour recall or three-to-four day food record is obtained to analyze nutrient adequacy for the child. The three or four day record is preferable because it captures more variability in the child's diet. The RD will interpret these data based on the child's age, medical condition and growth status.

Growth charts. National Center for Health Statistics growth charts are available for boys and girls 2 to 18 years (most recent dates to 2000). Weight-for-height and body-mass index charts are also available. These may be found at <http://www.cdc.gov/nchs> (enter growth charts into search box), along with training modules and PowerPoint presentations on these materials. Specialized growth charts are also available for children with certain conditions from the Center on Human Development and Disability at the University of Washington, on the Web at <http://depts.washington.edu/fug/growth/specialty.htm>. Both the University of Connecticut Health Center and Yale-New Haven Hospital operate genetics clinics that can also serve as a resource for concerns about growth related to genetic conditions and have specialized growth charts.

Laboratory tests. Biochemical tests can examine a variety of blood parameters to interpret nutrient adequacy such as iron, protein, vitamins, and cholesterol status. A referral to the child's physician is required for these tests.

Information from a nutrition assessment will help determine the need to consider referral for:

- specialized formulas if the diet variety or volume is limited;
- specific multivitamin and mineral supplements if a formula is not prescribed;
- tube placement if the child cannot meet all of his/her nutritional needs orally; and
- behavioral management techniques for the parents and/or child to facilitate optimal feeding.

HEALTH

The school nurse's evaluation of the child's health includes:

- reviewing medical records;
- gathering developmental health history information;
- screening the status of the child's respiratory system with a stethoscopic chest examination;

- reviewing results of postural, vision and hearing screenings conducted under state law and updating when necessary;
- taking oximeter measurements of oxygen levels before, during and after feeding, when necessary; and
- taking pulse readings before, during and after feeding.

Concerns about the child's health may need to be investigated further, through referral to the child's primary health care provider. Additional evaluations may include:

- radiologic examinations of the head and chest (e.g., related to structural abnormalities such as palatal cleft, velopharyngeal insufficiency, condition of the airway and lungs);
- pulmonary function examination (e.g., related to compromised function that may cause or be caused by dysphagia);
- gastrointestinal examinations (e.g., for obstructions, reflux, bowel disorders);
- metabolic studies;
- orthopedic examinations (e.g., related to head, trunk and limb growth and stability);
- neurologic examinations e.g., (related to sensorimotor function, neuromuscular control); and
- vision and hearing examinations (e.g., related to ability to see sufficiently to discern safe food and guide it to the mouth and to develop oral communication related to feeding).

For these health care providers to release their evaluation reports, parents will have to provide written consent for release of this information that is protected by HIPAA. See page 15 for information about securing a sample HIPAA compliant form. This consent is in addition to the IDEA consent for initial evaluation.

GROSS AND FINE MOTOR

During these evaluations, the PT and OT, as appropriate to their scope of practice, should probe more deeply and formally the areas described during the observation on pages 29–31, including the child's:

- positioning, as it relates to body tone and control for maximizing food intake appropriate to the child's needs, including the presence of potentially interfering reflexes;
- gross and fine motor control of the trunk, head, neck, arms, hands and fingers, as they relate to accessing food sources, using oral structures to manipulate the food and coordinating respiration with feeding and swallowing;
- oral structure and health, including condition of dentition, gums, tongue and palate and mucosa; presence of mechanical devices (e.g., braces, palatal appliances), history of brushing teeth and tongue, flossing, use of rinses;
- oral sensorimotor function related to awareness of food source and characteristics, as well as control of food and saliva during oral preparatory and oral phases of swallowing, self-protection from aspiration; and
- assistive technology needs for seating and feeding.

Commonly used tools that contain sections for assessing oral motor and eating/feeding skills include the Assessment, Evaluation and Programming System; Battelle Developmental Inventory-2; Carolina Curriculum; Hawaii Early Learning Profile; and the School Function Assessment. See also Swigert, 1998, chapter 3.

COMMUNICATION

The SLP's evaluation should address:

- communicative effectiveness, as related to comprehension and expression across oral and non-oral modalities for indicating wants and needs, expressing satisfaction/dissatisfaction, alerting to safety concerns and engaging in the social repertoire associated with eating in the child's culture (e.g., see Appendix VI in Winstock, 2005); and
- assistive technology needs to support communication about feeding and swallowing (e.g., sign language, pictures, electronic devices).

COGNITION, SOCIAL AND BEHAVIOR

Children with feeding and swallowing problems are at risk for malnutrition. Numerous sources cite the link between poor nutritional intake (even moderate under-nutrition) and alertness, attendance, attention, brain development (especially in infancy and early childhood), concentration, cognition, emotional and social development, readiness for learning, and school performance (Action for Healthy Kids, 2004; Bryan et al., 2004; Grantham-McGregor and Baker-Henningham, 2005; National Health/Education Consortium, 2006; National Food Service Management Institute, 2001). Poverty and other environmental factors compound these problems. In view of this research and considering findings from the previously described assessments, a cognitive assessment by a psychologist may be warranted.

Successful feeding and eating experiences are closely associated with the developmental and cultural dynamics of caregiver-child interactions, including attachment, separation and individuation (growing independence). Some children's physiologically based feeding and swallowing problems may evolve into a more behaviorally based problem (Arvedson, 1997). For example, delays in the introduction of oral feeding or the developmental sequence of food texture experiences may lead to instances of generalized oral/pharyngeal hypersensitivity or certain food aversions. Conversely, emotional behavior may lead to physical changes that may negatively affect feeding and swallowing, as when such behavior triggers persistent vomiting that may irritate the lining of the esophagus, pharynx or mouth. Caregiver attitudes and behavior are other important areas to explore in a comprehensive assessment. For these reasons, a psychologist's or social worker's assessment of these areas may be required.

INSTRUMENTAL SWALLOW STUDY

In many cases, the observation and assessment procedures described above will not yield adequate information about the pharyngeal and esophageal stages of swallowing, including aspiration, that is necessary to determine the safety of oral feeding. As noted previously, indicators of possible aspiration during or after swallowing include color change, voice changes that include a wet/gurgly quality, gagging, throat clearing and coughing. Because safety is paramount, instrumental assessment is likely to be a frequently used component of a comprehensive evaluation of swallowing, particularly in the presence of neurologic impairment. In planning such assessments, it is important to realize that the information gleaned represents a picture at a particular time and that feeding and swallowing are dynamic functions that may vary over time, in different settings, and with different foods and feeding/eating partners.

Technological advances have expanded the array of instrumental procedures available to provide information about relevant anatomical structures and their dynamic interrelationships during the process

of swallowing. Because school districts do not have the equipment necessary for these procedures, referral to the child's primary care physician will be necessary to arrange their administration. The school nurse is particularly suited to coordinating this process. Ideally, one or more members of the feeding and swallowing team will accompany the child and family to the medical facility and observe the testing. Diagnostic instrumental assessments of swallowing, being medical examinations, are the responsibility of the school district [34 CFR §300.34(a)].

ASHA (2000, p.227) notes that instrumental procedures enable team members to:

- “visualize the structures of the upper airway and digestive tract, including the oral cavity, velopharyngeal port, pharynx, larynx, and esophagus;
- assess the physiologic functioning of the muscles and structures involved in swallowing and to make observations, measures and inferences of symmetry, sensation, strength, pressures, tone, range, rate of motion, and coordination or timing of movement;
- assess coordination and effectiveness of lingual, velopharyngeal, pharyngeal, and laryngeal movement during swallowing;
- determine the presence, cause, severity, and timing of aspiration by visualizing bolus control, flow and timing, and the response to bolus misdirection;
- visualize the presence, location, and amount of secretions in the hypopharynx and larynx, the patient's sensitivity to the secretions and the ability of spontaneous or facilitated efforts to clear the secretions.
- view esophageal anatomy and function for evidence of dysphagia;
- assist in determining the safest and most efficient route (oral vs. non-oral) of nutrition and hydration intake.
- determine with specificity the relative safety of various bolus consistencies and volumes;
- determine the rate or method of oral intake delivery (i.e., selection of utensils, bolus placement, bolus modifications); [and]
- determine the postures, positioning, maneuvers, and/or other management/treatment techniques that enhance the safety and efficiency of feeding.”

The need for any instrumental examination must be based on each child's unique needs. The presence of one or more of the following conditions may indicate the need for an instrumental examination (ASHA, 2000, p.228):

- a medical condition or diagnosis that is associated with a high risk for dysphagia, (e.g., problems in the neurologic, pulmonary/cardiopulmonary or gastrointestinal systems; compromises to the immune system; head/neck surgery and/or radiotherapy; and craniofacial abnormalities);
- suspicion of a change in swallow function when dysphagia has already been identified;
- deficits in cognition or communication that prevent the performance of a valid clinical examination;
- a chronic degenerative disease; or
- a stable or recovering condition.

Instrumental examination is contraindicated when (ASHA, 2000 and 2004):

- the clinical examination does not identify dysphagia;
- medical instability would interfere with tolerance of the procedures;

- cooperation is questionable;
- the examination would not change management of the dysphagia; or
- the child cannot be positioned adequately or his or her size prevents adequate imaging or exceeds the limits of positioning devices

The various instrumental procedures have different goals, provide different information, and have different advantages and limitations. The modified barium swallow (MBS) has “been accepted as the ‘gold standard’ for evaluation of swallowing function” (Lefton-Greif and Loughlin, p.317) for a long time. A sample form for referral for an instrumental assessment of swallowing can be found in **Appendix D**. (Use standard district forms for other medical referrals that may be necessary.)

Determining Eligibility and Developing an Intervention Plan

Depending on the age of the child and the route a referral has taken up to this point, an eligibility determination will be made by the PPT or 504 Team. Because of the complex medical and educational issues related to feeding and swallowing disorders, most children with intervention needs in this area will likely be determined eligible for special education and related services under IDEA. For children ages 3 through 21, the PPT will determine a child’s eligibility for one of the disability categories using criteria described in the law, supplemented with procedures provided in various CSDE guidelines. The 504 teams may consider eligibility based on a referral that has been made directly or from a PPT that has determined a child does not qualify under IDEA.

Because feeding and swallowing disorders are not one of the IDEA disability categories, the PPT will include feeding and swallowing as a related service in an IEP for children determined to be IDEA-eligible. The PPT will also need to address feeding and swallowing needs when developing a postsecondary transition plan. When children are eligible under Section 504 of the Rehabilitation Act, the 504 Team will include feeding and swallowing as a component of a 504 plan.

School-age children with feeding and swallowing disorders whose parents unilaterally place them in private schools do not qualify for a free appropriate public education. Instead of an IEP, these children’s feeding and swallowing services may be included in a services plan developed by the district where the private school is located [IDEA Sec. 612(a)(10) and 34 CFR §300.132(b)], if consultation between the district and private schools has resulted in an agreement to include these services. Preschool children with feeding and swallowing disorders whose parents unilaterally place them in private schools will only be entitled to feeding and swallowing services if they attend a program that is part of a private school serving any grades from K-12.

Due to their medical conditions, some children will receive their IEPs through homebound instruction. In this case, districts are not required to provide services for the same length of the day as they would if the child attended school [RCSA Sec. 10-76d-15]. If the PPT determines that feeding and swallowing interventions will be part of the homebound instruction, the district should address its liability insurance coverage for these interventions. In the case of preschool children whose IEP services are delivered solely or at home, liability coverage also needs to be addressed.

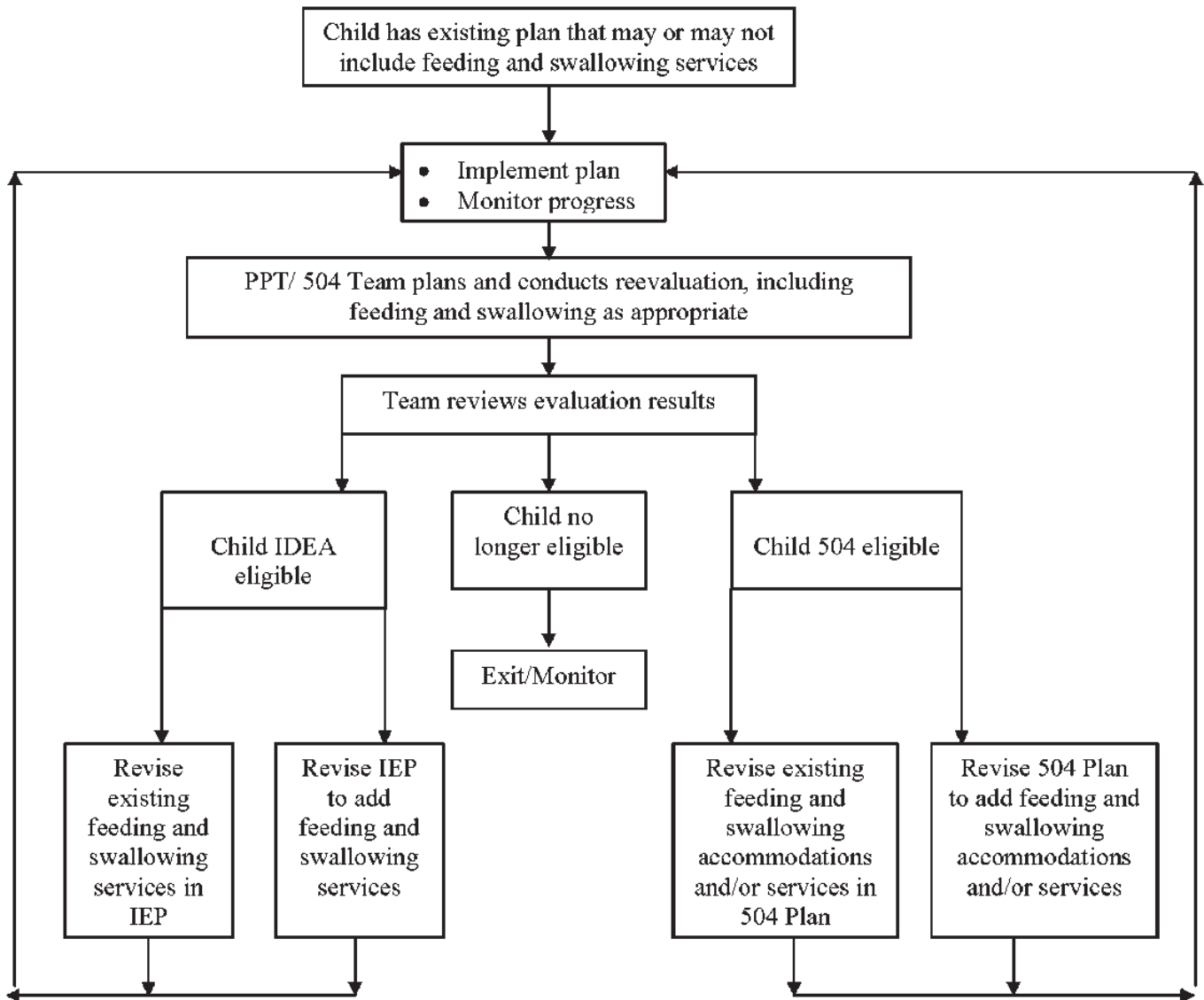
Diagnostic Placement. Connecticut special education regulations [RCSA Sec. 10-76d-14(b)] permit the use of a trial placement for diagnostic purposes if the evaluations are inconclusive or the data insufficient to determine a child’s IEP. This placement is a structured program, lasting no more than eight weeks,

designed to assess the child's needs. It may be used to try certain feeding and swallowing procedures either before or after a referral for medical or instrumental assessments. When this placement is recommended, the PPT must develop written diagnostic goals and objectives for feeding and swallowing and specify the types and amounts of feeding and swallowing services to be provided. The PPT must convene at least once every two weeks to discuss the child's progress with personnel who are working with the child and revise the services, as needed. The team must develop an IEP for the child five school days before the termination of the placement.

Consent for Placement. Before the initial provision of special education and related services, informed written parental consent is required [34 CFR §300.300(b)(1)]. Contrary to the provisions regarding consent for initial evaluation, school districts may not override parental refusal of consent for the initial provision of services by initiating due process [34 CFR §300.300(b)(3)]. This consent procedure may be used to satisfy the procedural safeguards of Section 504 of the Rehabilitation Act.

It is critical for districts and families to come to agreement regarding the implementation of intervention, as the child's well-being, even his or her life, may depend on this. As with other instances of parental refusal of consent, if parents refuse intervention for feeding and swallowing services, districts will have to consider whether or not a child can remain in school safely. Concerns about child neglect may warrant a referral to DCF.

Addressing Feeding and Swallowing: Children with an Existing IEP or 504 Plan



Procedures for Children with Existing IEPs or 504 Plans (flowchart above)

When a child arrives from another school district (in or out of state) with an existing IEP, districts are required to implement comparable services in consultation with the child’s parents [IDEA Sec. 614(d)(2) (C) 34 CFR §300.323(e)]. Prompt access to records from the child’s previous program is essential. Because of the safety concerns associated with feeding and swallowing services, caution needs to be exercised in determining the school’s capacity for implementing the existing plan. Successful implementation includes maintaining the type, frequency and amount of food intake, including hydration, and ensuring that medical emergency procedures are put in place promptly.

The feeding and swallowing team should review the current IEP or 504 plan prior to implementing the

services set forth in it and confer with families, prior providers and the child's medical team to the extent possible. While implementing the current plan, the procedures described in steps 1 and 2 on pages 29–30 should also be used to help determine the appropriateness of continuing the existing plan or whether additional evaluation of the child's feeding and swallowing skills is needed.

Progress Reports and Annual Reviews. IEPs must include a description of how the child's progress toward the annual goals will be measured and when periodic progress reports will be issued [IDEA Sec. 614(d)(A)(i)(II)]. PPTs must also review the child's IEP periodically, but not less frequently than annually, to determine whether the annual goals are being achieved and to revise the IEP as appropriate [IDEA Sec. 614 (d)(4)].

As with other services children receive, feeding and swallowing interventions need to be monitored with respect to their effectiveness in achieving the goals of the feeding and swallowing program. Intervention plans need to be revised as appropriate. Reevaluations may need to be conducted to inform the need for, and content of, such revisions.

Reevaluations. School districts must reevaluate a child with a disability if: (1) they determine that the educational or related service needs, including improved academic achievement and functional performance of the child warrant reevaluation; and (2) the child's parents or teacher request a reevaluation. This reevaluation must occur at least once every three years, unless the parents and district agree that it is unnecessary. However, a reevaluation shall not occur more frequently than once a year, unless the parents and district agree otherwise [IDEA Sec. 614(a)(2); 34 CFR §300.303(b)]. Section 504 of the Rehabilitation Act also requires periodic reevaluations [34 CFR §104.35(d)]. Reevaluations procedures that are consistent with IDEA are one way to meet this requirement [ibid]. As with the initial evaluation, the PPT or 504 Team is responsible for planning the evaluation, including selecting assessments appropriate to the child's needs or current status.

For some children, feeding and swallowing issues will be raised for the first time when the reevaluation is planned or conducted. For others, their known feeding and swallowing issues will need to be reassessed as part of an overall reevaluation. Because changes in the underlying structures and the interrelationships among various body systems involved in feeding and swallowing are affected by a child's ongoing physical development, as well as alterations in his or her medical status, children with identified feeding and swallowing disorders may need to have their feeding and swallowing function reevaluated more frequently than other areas.

There are a number of circumstances that may trigger a need for a feeding and swallowing reevaluation, such as:

- consideration of changes to food texture in child's diet;
- surgeries or changes in the child's medical status (e.g., deterioration in pulmonary/respiratory health);
- changes in tube feedings or transitions from tube to oral feedings;
- reported changes in growth rate of the child;
- reported problems related to feeding such as vomiting, diarrhea, constipation etc.; and
- medication changes that may interact with the child's diet and affect his or her nutritional status and/or swallowing skills.

The child's health and safety are preeminent reasons for determining the need for updated or additional evaluations. As was the case with the initial evaluation, trained school personnel will be able to conduct many of the needed assessments. Other assessments will require a referral to the child's physician for input from an external medical team.

Parental Consent for Reevaluation. Informed parental consent for reevaluation is required under IDEA, unless a district can demonstrate that it took reasonable measures to obtain the consent and the parents have refused to give it [34 CFR §300.300(c)]. Districts may override parental refusal of consent for a reevaluation by initiating due process proceedings, including mediation. However, they are not required to do so [34 CFR §300.300(c)(ii) and RCSA §10-76h-3(c)]. The same options for dealing with consent refusal described on pages 32 under initial evaluation are available for reevaluations.

Revising and Amending the IEP or 504 Plan. Feeding and swallowing services may be added, deleted or revised based on monitoring of the child's progress or as part of the outcome of the reevaluation process described above. IDEA requires the IEP team (PPT) to revise the IEP, as appropriate, to address any lack of progress toward the annual goals and in the general curriculum (if appropriate); the results of any reevaluation; information provided to or by the parents; the child's anticipated needs; or other matters [IDEA Sec. 614(d)(4)(A) and 34 CFR §300.324(b)]. Districts may agree not to convene an IEP meeting to make changes to the IEP (i.e., amend it) after the annual IEP meeting for a school year [IDEA Sec. 614(3)(D) and 34 CFR §300.324(a)(4)]. Changes to the IEP may be made either by the entire team or by amending the IEP rather than redrafting the entire IEP [IDEA Sec. 614(3)(F) and 34 CFR §300.324(a)(6)]. However, when parents request, the district must provide a revised copy of the IEP with the amendments incorporated [ibid]. While Section 504 of the Rehabilitation Act does not contain specific requirements for revising a child's 504 plan, the reevaluation required under the law will provide the information necessary for the 504 team's decisions about any revisions. The comments on page 38 about providing IEPs in a preschool child's home or through homebound instruction for any preschool or school age child apply when IEPs are being revised or amended.

Providing Feeding and Swallowing Interventions

The overall goal of intervention is to ensure that the child receives appropriate nutrition as safely as possible. Specific goals and objectives will vary depending on the child's medical and cognitive status, nutrition needs, developmental levels, other disabilities, the family's needs, and quality of life considerations. For some children, goals will focus on improving oral management of food and liquid and preparation of a bolus. For children with degenerative conditions, goals and objectives may be directed to maintaining oral feeding as long as possible. When evaluations indicate that oral feeding is unsafe, the focus will be on maintaining nutrition through tube feedings, while perhaps also offering some oral tasting for pleasure if safe. Some children will need a combination of oral and tube feedings. Still other youngsters will need support transitioning from tube to oral feeding.

Feeding and swallowing goals and objectives may be subject to frequent change for a variety of reasons, such as developmental growth and fluctuating medical status. A school or district feeding and swallowing team that has the opportunity for regular meetings and ongoing consultations with the child's medical team provides an ideal managerial structure to deal with conditions that may evolve rapidly. **Appendix E** includes sample goals and objectives for addressing feeding and swallowing targets from the Consolidated School District of New Britain. (See also Swigert, 1998, chapter 10.) Children may also require goals and objectives that address related areas, such as communication and assistive technology.

Parents may choose to feed their children a greater variety of food items and textures at home than district personnel feel is safe to provide them in school. **The only permissible food textures (and quantity of food and feeding schedule, as appropriate) are what have been determined to be safe by the school team in consultation with the child's medical providers. For safety reasons, it is strongly advised that this information be clarified in an order from the child's primary care physician, the child's medical feeding and swallowing team's physician or the district's medical adviser. If the child will need modifications to USDA supported meals, a physician must always sign the required form (see pages 14–15). Specialized procedures (e.g., tube feeding) always require a physician's order (Connecticut Nurse Practice Act).** The Connecticut Department of Public Health defines a physician as a doctor of medicine (MD) or of osteopathy (DO) [CGS chapter 370].

It is critical for everyone to understand the health and safety issues that can arise from ignoring medical orders. Based on the medically approved school diet and feeding schedule, families and service providers need to come to mutual agreement on what foods will be served; how they will be prepared; and how, when and where the child will be fed. Special care needs to be taken to ensure that children do not consume other children's foods or that treats brought in (e.g., to celebrate classmates' birthdays) do not violate the food orders. When agreement between the school and family cannot be achieved, one option is for the parent to come to the child's program to oversee and assume responsibility for his or her child's feeding in order to keep the child for the full length of the program. Such an arrangement should be in writing to avoid misunderstanding about the roles of various parties. Where it is medically necessary, homebound instruction may be another option. Such instruction must be provided in accordance with RCSA Sec. 10-76d-15. Due process procedures, including mediation and hearings, may also be a consideration when agreement cannot be reached about how to safely feed a child. Feeding issues related to the "stay put"

requirements of due process hearings should be brought to the immediate attention of the hearing officer, who will issue an interim order as necessary.

Developing a Feeding and Swallowing Plan

Interventions need to include more than just the goals and objectives for feeding and swallowing in order to address the full range of related issues, such as staff and family training and appropriate supervision of program personnel who actually feed the child. Having a written plan will facilitate the coordination of the multiple management and treatment activities that need to be undertaken to meet the feeding and swallowing needs of the child. The plan is also a useful means for documenting that activities have been undertaken in a timely manner and with due diligence. The plan should be incorporated into a child's Individual Child Health Care Plan (IHCP) form, either by adding language to the IHCP or by attaching the feeding and swallowing plan form to the IHCP. A sample plan form can be found in **Appendix F**.

When the child's condition is expected to remain reasonably stable for an extended period of time, the feeding and swallowing plan/IHCP could be included as part of the child's IEP/504 plan. However, when the child has extensive, complicated problems resulting in frequently changes in his or her condition, the plan may require frequent revision. In this case, referencing the feeding and swallowing plan in the IEP, but not including it as part of the IEP, will allow for revisions to be made by the feeding and swallowing team without convening a PPT or invoking the IDEA requirements for amending an IEP without convening a PPT. In either case, the feeding and swallowing goals and objectives would be in the IEP, typically in the areas of health, gross/fine motor or self-help, or in a 504 Plan.

Components of the Plan. Safe feeding requires consideration of many factors that precede, occur during and follow the actual act of feeding and swallowing. The following components should be addressed:

- environment in which the child is to be fed;
- positioning during feeding;
- equipment for food preparation and feeding;
- diet content (including food and liquids), quantity and texture;
- feeding techniques;
- precautions, including emergency procedures;
- training plans for personnel implementing the plan, including verification that it has taken place as scheduled;
- monitoring safety, progress and effectiveness of the plan and revising it accordingly; and
- process for communicating with families and the child's medical team.

The population of children with feeding and swallowing disorders is heterogeneous in a number of respects, such as precipitating and accompanying conditions, severity of the feeding and swallowing problem, sociocultural and linguistic family background. In addition to addressing these factors and the feeding and swallowing disorder, the plan must also take into consideration the needs of the child that arise from his or her specific disability, such as cognitive, emotional or neuromuscular limitations.

The feeding and swallowing team provides the structure for managing the multiple components of the plan. In smaller programs, where a full team is not regularly available, periodic multidisciplinary consultations can be set up between program personnel assigned to provide ongoing feeding services and others involved in the child's care, using a variety of formats, such as face-to-face meetings, e-mails, team

electronic bulletin boards, audio or videoconference calls. These approaches must ensure that legal and ethical obligations concerning confidentiality of information are addressed.

IMPLEMENTING THE PLAN: ROLES AND RESPONSIBILITIES

The qualifications necessary to carry out the various activities in the feeding and swallowing plan should drive decisions about who carries them out. For example, different staff and family members may be involved in the food preparation and the actual feeding. Children whose needs may be met with management strategies may, in some circumstances, be safe with assistance from a supervised paraprofessional, whereas direct skill building strategies require the services of licensed/certified individual staff until it is safe to delegate those to other trained staff or family members. There is considerable overlap within the scope of practice of several professions in a number of practice areas related to feeding and swallowing intervention. These professionals need to work out the logistics of their roles and responsibilities at the school level. Assigning a team member as team leader or as the case manager for particular children may facilitate coordination of the necessary activities.

Collaboration is critical to the successful implementation of the feeding and swallowing plan and this will require regularly scheduled communication, including face-to-face meetings. Administrative support is key to ensuring this collaboration. School personnel and families will require training in normal feeding and swallowing development, the foundations of the child's disorder, specific strategies that will be used, precautions to take (including knowledge of emergency procedures and signs of distress that require activation of these procedures).

Some of the typical roles and responsibilities are delineated below.

Nurse. Nurses have a primary role in children's school health management that involves many activities. They serve as the gatekeeper with respect to updating and overseeing health records, monitoring the child's health status and ensuring the confidentiality of health information. As a result, they can support the school team by serving as the conduit of communication between the school, Birth to Three program, family and the child's physicians. HIPAA permits calling the doctor without parental permission only to discuss issues related to a treatment order. However, since other related issues may come up during the conversation, it is best to secure parental permission for such calls. The HIPAA compliant consent form may be used for this purpose.

School nurses' general responsibilities include overseeing the development, implementation and monitoring of children's individualized health care plan and emergency care plans. They may train others or arrange training in special emergency procedures (e.g., Heimlich maneuver, cardiopulmonary resuscitation and activating emergency communications). Their medical training supports their role in ensuring the development and implementation of risk management procedures (e.g., universal precautions for infection control; accident prevention). By law they administer prescribed medications and supervise others in doing so. They can also alert the team about the impact of medications on feeding and swallowing (e.g., alertness, attention, general behavior).

In schools, nurses provide required tube and intravenous feedings. They oversee the supply and condition of medical equipment for these feedings, as well as related needs (e.g., oxygen). In addition, depending on the condition of children who are fed or self-feed orally, they may be more or less directly involved in their meals and snacks.

School nurses may delegate certain nursing services and supervise the individuals whom they have delegated to carry out these services. Delegation of their services, including feeding, is addressed in the CSDE's *Specialized Health Care Procedures Manual for School Nurses* (1997).

Dietitian. In conjunction with the physician, the dietitian ensures that the child's diet, whether consumed orally or by tube or intravenous, offers appropriate calories and nutrients. This professional collaborates with other members of the feeding and swallowing team, particularly the nurse and family, to use information about the child's growth, including weight, to help determine that the child is receiving adequate nutrition in school.

In conjunction with the child's physician, the dietitian may recommend the need for tube placement if nutritional needs cannot be met safely by oral feeding. Tube feeding may become the sole delivery modality for school or may be used to supplement oral feeding. Depending on the child's overall energy level, oral sensorimotor skills, or type of feeding tube used and its placement, adjustments may need to be made in the quantity of food administered at any particular time, including consideration of continuous tube feedings.

In the majority of cases, school districts will concern themselves only with the dietary needs of children with feeding and swallowing disorders while they are involved in school-run programs. However, there will be some cases, such as when the district is providing homebound instruction or a preschool child's IEP is fulfilled at home, when the district will have dietary oversight beyond school programs.

Food Service Personnel. Since providing adequate nutrition is a critical goal of feeding and swallowing programs, the school food service personnel need to be involved early on in decisions regarding special accommodations if the child is participating in the school breakfast, lunch or after-school snack program. If the school will be providing the child's food (instead of the caregivers sending it in), the prescription for dietary modifications must be on file (see page 15). While the school food service may be responsible for providing and preparing the foods needed by the child, it is not the specific responsibility of the school food service staff to feed the child directly (USDA, 2001). Note that modifications required for snacks prepared or provided in school or on field trips for consumption during the school day are the responsibility of the program offering them.

Once the food service manager has a clear understanding of the prescription for dietary modifications, he or she should discuss the dietary changes for this child with the food service staff. The food service manager should ensure that the specific dietary requirements, as documented in the physician's medical statement are accommodated. The district's food service director should be contacted prior to purchasing any special foods, equipment or education materials and for planning any additional training of food service personnel that may be needed (see page 16 for more information on this topic).

Examination of where the child will be eating (either in the cafeteria or in the classroom) should also be determined. Proper sanitation of the setting, food service equipment and feeding utensils must be a priority. If the food is delivered from the cafeteria, it is important to ensure that appropriate food temperature is maintained. If the food texture has been modified (e.g., with thickeners), consideration must be given to the transit time between the cafeteria and the eating location because of the effect of "standing time" on the ultimate thickness of the food.

Speech and Language Pathology, Occupational and Physical Therapy Staff Members. SLPs, OTRs and

PTs typically have primary responsibility for overseeing the implementation of interventions for children whose evaluations indicate they can eat safely by mouth. In schools, the SLP or OTR typically assumes the lead in physically feeding them, assisting them with self-feeding. The PT usually oversees the posture and seating requirements to stabilize the child for safe feeding and reduce the adverse effects of abnormal reflexes. These professionals also assume responsibility for training and supervising teachers, support personnel and families regarding the implementation of strategies that have been recommended by the feeding and swallowing team in collaboration with appropriate physicians.

Because they have a great deal of commonality in their knowledge and skills for addressing feeding and swallowing disorders, SLPs, OTRs and PTs will frequently use a transdisciplinary or interdisciplinary model in implementing oral feeding and swallowing interventions (rather than a multidisciplinary approach in which professionals convene to share information, but otherwise operate separately). Personnel qualifications and the needs of the child are among the factors that influence which model is used at any particular time. (See page 20 for examples of interdisciplinary and transdisciplinary teaming.)

Depending on their knowledge, experience regarding assistive technology (AT) and the needs of a particular child, these professionals have important responsibilities for using information from the evaluation of the child's communication, cognitive and motor skills to guide recommendations for any AT devices, such as feeding utensils, adaptive seating and tables, and alternative augmentative communication (AAC) systems. They ensure that AAC devices used by a child with feeding and swallowing disorders include appropriate means for communicating about feeding and swallowing needs (e.g., gestures, sign language, picture boards or electronic devices). Their roles also involve overseeing effective implementation of the selected AT, including training teachers, paraprofessionals, child peers, family members and others involved in the child's care in its use.

Teacher. As inclusionary educational practice has gained momentum, children with disabilities that affect feeding and swallowing are spending increasing amounts of time with their nondisabled peers. Often, the lunch period is a starting place for including children from more segregated programs. For children in part-day preschool or kindergarten programs, snack time may be the critical feeding period. Depending on a child's needs and progress toward independence, regular and special education teachers may have different responsibilities for implementing aspects of the feeding and swallowing plan. While some teachers will be the primary feeders, others may assume the role of cueing the child, monitoring generalization and safety and reporting progress and concerns to the feeding and swallowing team or case manager.

Paraprofessional. Depending on the severity of their disabilities, children with dysphagia may be assigned a one-to-one paraprofessional or may manage with the assistance of a classroom or program paraprofessional whose time is not solely devoted to the child. The SDE's 2001 survey indicated that, after OTs and SLPs, paraprofessionals played a prominent role in feeding children in schools. Because they often spend considerable time in close interaction with a particular child over the course of the day, they are in a position to be the eyes and ears of the feeding and swallowing team about the child's behavior and physical status before, during and after feeding.

The feeding and swallowing plan needs to address the delegation of feeding and related tasks, including the training and supervision of support personnel. Connecticut regulations require special education aides to be directly supervised by a person certified and/or licensed in the specialty in which the aide is assigned [RCSA Sec. 10-76d-2(g)]. For information about support personnel in speech and language pathology, see the 1999 CSDE publication titled *Guide for the Training, Use, and Supervision of Speech and Language*

Pathology Aides and Assistants. (This publication is available at <http://www.sde.ct.gov>. Click on “Special Education” and, on the next page, on “Publications.”) For nursing responsibilities regarding delegation, see the State Department of Education’s 1992 publication, *Serving Students with Special Health Care Need* and the 1997 publication, *Special Health Care Procedures Manual for School Nurses*. (These may be acquired by contacting the SDE school nurse consultant, listed in the resource section of these guidelines.) For information about supervision of certified occupational therapy assistants, see the American Occupational Therapy Association’s 1999(a) publication, *Guidelines for Supervision, Roles, and Responsibilities During the Delivery of Occupational Therapy Services*, and the *Guidelines for Physical Therapy* (CSDE, 1999). For supervision of physical therapy aides and assistants, see *Guidelines for Occupational Therapy* (CSDE, 1999).

Mental Health Staff. “The diagnosis of a child with a chronic illness or disability is regarded as one of the most severe stressors sustained by a family . . . When faced with the prospect that a child may have physical or developmental disabilities, parental response can range from disbelief and denial, to catastrophic over-reaction, to spiritual defeat. The role of the swallowing team, and particularly the social worker, is often pivotal in facilitating constructive adaptations to what in many instances represents a family crisis or trauma” (Parrish, 1997, p.71).

Concentrating on the mechanics of safely feeding their child with feeding and swallowing disorders may make it difficult to engage in the pleasantries normally associated with feeding young children and mealtimes with older children (Wooster et al., 1998). This may stress families even further. “Feeding entails ongoing emotional and social implications of nurturing, bonding, comfort, communication, disposition, growth, reinforcement, and reward for the parent-child relationship. As a result, feeding disorders may challenge factors that are interwoven into the very fabric of parent-child dyads” (Parrish, 1997, p.74).

School mental health professionals play an important role in providing emotional support to families through direct counseling or referral to community resources for this help. They can also help mediate tensions that may arise between families and school or program personnel in relation to recommendations for evaluation or the design and implementation of the feeding and swallowing plan. Social workers, psychologists and school counselors also have roles to play in designing, implementing and monitoring behavioral interventions and interfacing with families around school schedules and participation in extracurricular activities that involve or affect eating and/or drinking.

Family. Children served by schools come from families representing all strata of society and a great variety of cultural and linguistic backgrounds. Data from the CSDE indicate that 159 languages were spoken by children in Connecticut schools in 2004–05. Creative problem solving will be key to addressing the challenges presented by this diversity to ensure meaningful participation of families in the development and implementation of their child’s school feeding and swallowing plan.

Families must understand the rationale for recommendations made by professionals regarding all aspects of school-based interventions. As members of the core feeding and swallowing team, they should participate actively in shaping these recommendations into a mutually acceptable school feeding and swallowing plan. In their role of primary caregivers, parents have important knowledge about their children’s food and feeding/eating preferences that must be considered as much as possible in diet selection and the location and manner of feeding the child. The team needs to set up a means for parents to communicate critical information, such as changes in the child’s medical status (including medication changes), behavior or interests, as well as to report progress or deterioration in feeding and swallowing. In some cases, parents

may have figured out a way to feed their child that seems to work for them and their child, but that may not be in the best interests of the child's health and safety. The school team has a role in educating the parent about any possible adverse consequences that may result from such approaches, especially aspiration of food, and advising the parent of the district's priority for safety.

Intervention Strategies

As the call for evidence-based practice has emerged, it is important to understand that feeding and swallowing therapy as an organized field of practice in schools is fairly recent.

“At least two strategies are available to clinicians selecting management techniques for specific individuals: The approach that is advocated by evidence-based practice is to refer to research reports describing the benefits of a particular treatment. The question asked in this case is, ‘Is this treatment beneficial?’ In the absence of adequately documented clinical efficacy, clinicians may select treatments based on theoretical soundness. The question asked in this case is ‘Should this treatment be beneficial?’ This second method of treatment selection has potential for success if the clinician has a clear understanding of both the nature of the targeted impairment and the therapeutic mechanism of the selected treatment technique” (Clark, 2003, p.400).

The feeding and swallowing intervention strategies described below are based more on knowledge of anatomy, neurology, physiology, nutrition, child-rearing, medical practice, legal requirements and trial and error than on randomized controlled studies. “Establishing a control group for treatment efficacy studies in dysphagia is difficult because of the potential risk of medical complications such as pneumonia, malnutrition, or dehydration, that may result from withholding swallow therapy” (Logemann 1998, p.329). With increasing numbers of youngsters who have feeding and swallowing disorders presenting in schools, we can expect to see more attention to the efficacy of particular strategies in the research literature.

Complete coverage of all available interventions is beyond the scope of these guidelines. Readers will find comprehensive information on intervention in Arvedson and Brodsky (2002), Clark (2003), Evans-Morris and Klein (2000), Logemann (1997, 2000) and Swigert (1998), whose textbooks, manuals and articles may be found in the bibliography and additional references sections of these guidelines. **It is critical to understand that a mere reading of this material will not qualify personnel to implement the strategies and techniques described in these and other publications. Depending on the pre-existing level of knowledge and competence, additional training, including opportunities to see the strategies and techniques demonstrated and to practice them under supervision of personnel with expertise in their use will be required.** All intervention strategies, when recommended as the result of appropriate assessments or evaluations should be implemented only by personnel with demonstrated competence in their use. This caveat is important from both legal (liability) and ethical perspectives.

Interventions for feeding and swallowing disorders may be categorized as management or treatment strategies. Management strategies involve “changing the variables of the environment or changing behaviors of others” (ASHA, 2000, p.226). They are akin to accommodations. Treatment strategies are “intended to change the physiology or behavior” (ibid) of the child. Logemann (2000) classifies treatment

strategies as compensatory or direct therapy. Many children will require both management and treatment strategies.

MANAGEMENT STRATEGIES

Such strategies include, but are not limited to, those described in the sections that follow.

The Eating Environment (Source: Alabama State Department of Education, 1993). A pleasant and comfortable eating environment is important for facilitating successful and positive eating or feeding experiences. Depending on a child's sensorimotor status, the level of environmental stimulation may need to be increased or decreased. Such factors as lighting, room color and temperature, general activities in the room and the number, size, weight and color of feeding implements and other objects in the child's direct or peripheral line of vision may need to be adjusted.

Most children who are in school will eat their meals in the cafeteria in the company of their peers. However, some children with special needs will be too distracted by their friends and classmates and will be unable to pay attention long enough to eat their meal. A section of the cafeteria may need to be rearranged for these children. Other children may need to eat their meals in the classroom or other locations for health or privacy reasons. For children who need between meal nutrition, adapting the eating environment for snack time may also be required.

Using information from the child's medical team, the feeding and swallowing team should recommend what is the most suitable eating environment for the child to the PPT or 504 team. The manager of the Child Nutrition Program/School Food Services should be involved in making this recommendation. If the cafeteria is the selected location, this individual will be important in consulting with the cafeteria staff to ensure the proper set-up is available for the child. Regardless of the location, precautions need to be taken to ensure food safety and sanitation. Appropriate supervision of the child during eating and drinking needs to be available.

Serving Food. Strategies for serving food address various aspect of the food itself, the equipment needed to prepare the food or to assist with feeding, and the individuals who may feed the child.

Quantity of food and feeding/treatment schedule

Depending on the child's overall condition, there may be recommendations or orders to increase or decrease the frequency of feeds and/or the amount of food that should be presented at any particular feeding. These requirements may change periodically in response to changes in the child's condition.

For purposes of monitoring the child's progress with feeding and swallowing objectives and his or her health, especially nutritional needs, it may be necessary, in some cases, to keep a written record of the time when feedings take place, the duration of the feeds and the quantity consumed and retained. Children may improve their feeding and swallowing abilities, but if they experience frequent diarrhea or vomiting, they will not obtain sufficient nutritive benefit from their intake. Diets, feeding schedules and feeding practices need to be monitored in connection with these episodes.

As with other skill areas, when children are learning new feeding and swallowing behaviors, they need ample opportunity to practice without becoming fatigued. There may be times when other therapies can be integrated with work on specific feeding and swallowing skills, but there may also be times when those related therapies need to be delivered independently. For example, specific exercises to build postural stability or muscle tone and strength of the limbs, trunk, head and neck may need to be addressed in individual physical and occupational therapy. Intervention schedules need to be adjusted accordingly.

Caloric modifications

Depending on the child's nutritional needs, the caloric density of food selected for the child's diet may need to be modified. This can be done by "adding calorically dense foods ... and commercially available calorie enhancers ... in food preparation to increase energy content without changing volume" (Hendricks and Walker in Kovar, 1997, p.43).

Food supplements may also be necessary between meals. "Common household foods ... can double as supplements and are often first choices for increasing dietary intake because they are relatively inexpensive and familiar food items. Commercial supplements ... may be recommended when more aggressive therapy is indicated" (Kovar, 1997, p.43).

Not all children with feeding and swallowing problems are calorically deficient or at risk for malnutrition. Some of these children may have associated medical issues or physical limitations that increase concerns about their being overweight. As with children without disabilities, environmental factors may contribute to this type of problem. For these children, calorie restriction may be required. The dietician or nutritionist on the feeding and swallowing team, in consultation with the child's physicians will have primary responsibility for determining the need for caloric modifications that will be reflected in the school diet.

Food preparation equipment (Source: Alabama State Department of Education, 1993)

The equipment needed to modify food texture varies with the consistency and thickness of the food selected for the child's diet. (See page 16 for information about covering these costs.) A school may need one or more pieces of the following equipment:

- food processor (home-style);
- blender (institutional or home-style);
- food chopper (institutional); and
- vertical cutter mixer (VCM) (for a large volume of food which needs to be modified in texture).

All food preparation equipment must be thoroughly cleaned and then sanitized each time it is used to avoid food-borne illness by cross-contaminating the food. Since the standards for such care (e.g., water heated to the required temperature) may not be achievable outside the school nutrition program, food service personnel need to be part of the planning for how equipment used to modify food in other settings will be cleaned and sanitized.

Assistive technology (AT) for feeding

A variety of medical conditions, such as neuromuscular disorders, arthritis, malformed or absent arms, hands or fingers, contribute to a child's need for special feeding equipment, including nipples, bottles, cups, dishes and eating utensils. Children with feeding and swallowing disorders may require AT devices to support their self-feeding efforts. Those who are feeding children may also need specialized equipment to be able to accommodate to the oral structural anomalies and functional deficits of the children they are feeding.

AT for feeding may include modifications to regular equipment or commercially purchased devices. The AT must be included in the child's IEP or 504 plan. For children with IEPs, special feeding equipment may be purchased with IDEA funds. Alternative or supplemental funding sources could include Medicaid, district Child Nutrition Program funds, State Department of Public Health funding for Children with Special Health Care Needs and local funds. Personnel who serve as core members of the feeding and swallowing team are also often members of the district's or school's AT team. For descriptions of some AT devices for feeding, the problems they are designed to address and manufacturers, see Swigert, 1998, chapter 11. The New Visions Mealtimes catalog (<http://www.new-vis.com>) is an example of a source for devices to support feeding.

Positioning for postural stability and alignment is critical to supporting the safety and effectiveness of the child's swallowing function, including reducing the risk of aspiration and improving the coordination with respiration that is part of the swallow cycle. The child may need items such as a special chair, adaptations to his or her wheelchair, braces, cushions or pillows. Table height, surface area and positioning of legs may need to be adjusted to accommodate special seating. Straps may be necessary to hold the child in place, but their use should be minimized as much as possible, as they can hinder the quick removal of the child from the chair should choking occur.

AT devices and services to support feeding and swallowing are components of a child's IEP or 504 plan. For safety reasons, districts need to ensure timely delivery, installation and implementation of required AT.

The child's feeders

Because many children with feeding and swallowing disorders need others to feed them and because feeding occurs in a social context, management strategies may need to be directed to those responsible for feeding. Some examples of topics that need to be addressed include:

- the position of the feeder in relation to the child (e.g., height and distance);
- the manner of food presentation (e.g., angle from which it is best to present food, rate of presentation, number of swallows that may be necessary before the next introduction of food and prompts or cues that may be needed to elicit desired feeding and swallowing behaviors); and
- building trust between the feeder and the child, including learning to understand and respond appropriately to the child's oral and non-oral cues.

Alternatives to Oral Feeding. When children are at high risk for aspirating during oral feeding or when their nutritional needs cannot be adequately met through oral feeding, alternative routes need to be considered. Children may transition to or from tube feedings or have their oral feeding supplemented with

tube feeding. “Non-oral feeding should not be seen as a failure or last resort, but should be approached as a means for maximizing safety, growth, and development” (Arvedson and Brodsky, 2002, p.389).

Bypassing the mouth can be done by accessing the digestive tract through a variety of avenues. “The options available are enteral feedings, which utilize the GI tract, and parenteral feedings, which provide nutrients directly into the bloodstream and bypass the GI tract” (Arvedson and Brodsky, 2002, p.192). Enteral routes may be accessed nonsurgically or surgically. Nonsurgical feeding tubes access the stomach via the nose (nasogastric – NG) or mouth (orogastric – OG) or bypass the stomach and connect the nose to the beginning of the small intestine (nasoduodenal). Surgical insertion of gastrostomy tubes includes two procedures. Percutaneous endoscopic gastrostomy (PEG or G) tubes are inserted through the abdomen to the stomach, while percutaneous endoscopic jejunostomy (PEJ or J) tubes are inserted into the small intestine (lower down the gastrointestinal tract) at the level of the jejunum, (below the duodenum). Insertion of a feeding tube does not preclude either reflux or aspiration (of regurgitated food or acid or of saliva). Nonsurgical approaches are generally used for short-term interventions. The most common parenteral route for feeding is intravenous feeding. (See Arvedson and Brodsky, 2002, chapters 5 and 6; Kovar, 1997; and Swigert, 1998, chapter 4 for more in depth discussion of non-oral feeding. Also consult the Connecticut State Department of Education’s 1997 publication, Specialized Health Care Procedure Manual for School Nurses.)

Hydration. These guidelines use the term “food” to include the continuum from liquids to solids. In our concern about children’s ability to manage foods toward the solid end of the spectrum, it is easy to forget that a large percentage of the human body, child or adult, is composed of water.

Digestion is only the beginning of the series of biological events that takes place as food is incorporated into the human body. Eventually, the nutrient materials in some form will reach every cell. Nutrients begin their travels by entering the bloodstream, or circulation as water, which will carry them to where they are needed” (“Water in the Body,” <http://www.dehlgroup.com/wbody.html>, March 15, 2006).

While it contains no calories, water is important for numerous body functions, including oxygen absorption, toxin elimination, digestion, lubrication, saliva formation, joint cushioning, temperature regulation, alertness and disease prevention (ibid; Bluestein, 2001; Mayo Clinic, 2006).

“Adequate fluid intake is necessary for hydration and the prevention of complications related to constipation regardless of whether the child receives oral or nonoral feedings. A child with difficulty consuming thin liquids may take thickened liquids; however, children who are fed orally and require thickened liquids may still be at risk for poor hydration because thickened liquids provide less free water than do their thinner counterparts. As a result, the child may require supplemental fluids. Children who do not consume adequate fluids orally can be given additional fluids through an enteral feeding tube. Selection of enteral formulas should also consider a formula’s provision of fluid. Formulas providing greater caloric density generally have lower free water contents ... Specifying the amount of water used to flush a bolus tube feeding can easily provide the additional fluid needed and also serve to rinse the tubing” (Kovar, 1997, p.47).

The dietitian can determine the amount of free water needed in addition to formula per day for children

being fed this way.

Until recently, there was an assumption that any food, including water, aspirated into the lungs caused pneumonia. However, the neutral pH balance of water, its limited bacterial and other contamination, its lack of chemical compounds found in other beverages and its easy absorption into the body's pool of water supported its use in addressing hydration (Panther, 2003).

Oral Hygiene. Children with feeding and swallowing disorders often have difficulty clearing food remnants from their mouths because of weakness or discoordination in their tongues, jaw and lips or because of reduced sensation. Food left in the mouth can create bacterial problems that affect the health of the oral tissues, teeth and saliva. Health complications in the aerodigestive tract may follow when bacteria laden food remnants and saliva are swallowed with or without liquid (Manganello et al., 2005). For children at risk for aspiration of food or saliva, meticulous oral hygiene is advisable because as the bacterial density increases, so does the toxicity of the aspirated material (Arvedson, personal communication, Aug. 31, 2006). Managing oral care is important to address these risks, as well as to minimize social isolation due to foul odors from the child's mouth. The feeding and swallowing plan needs to address how oral hygiene, including tooth brushing, will be managed, especially with children whose sensorimotor conditions or emotional sensitivity complicate access to the oral cavity. Oral prostheses will also need to be properly cleaned (Arvedson and Brodsky, 2002).

Controlling Drooling. Difficulty controlling food and/or saliva frequently is accompanied by drooling. "Weakness in muscles of mastication, inability to breathe through the nose, reduced oral awareness of saliva, reduced tongue control, and delay in initiating the oral or pharyngeal swallow are all possible reasons for drooling" (Logemann, 2000, p.54). Medications, such as tranquilizers and anticonvulsants, can increase the production of saliva or reduce the child's ability to swallow with enough frequency to avoid drooling (Swigert, 1998). Pharmacological management and postural adjustments should be explored. While oral-motor exercises have also been used to address drooling, their value may be limited in light of the information presented on this topic under direct therapy strategies on page 62.

"When the child reaches the point that he is able to hold his head at midline, keep his lips closed, swallow, and have a concept of wet and dry, it may be appropriate to begin a behavioral program designed to get him to keep his head at midline, keep his lips closed, and swallow more often to decrease the drooling. If decreasing or eliminating the drooling is not a viable goal, then an alternative is to make the child responsible for keeping his face dry by wiping his face with a cloth" (Swigert, 1998, pp 220–221). For more information on this topic, see Arvedson and Brodsky, 2002, chapter 11; Swigert, 1998, chapter 9; and Scott and Johnson, 2004).

TREATMENT STRATEGIES

In recent years,

"there has been growing recognition that normal swallowing is not a single behavior but a set of 30+ behaviors, which vary systematically with the characteristics of the food being swallowed (e.g., bolus, volume and viscosity) and the voluntary control exerted over the swallow... For example, a swallow of saliva (approximately 1-2 mL) involves an oral stage followed by a pharyngeal and then an esophageal stage. In contrast, a swallow of

18–20 mL of liquid (the usual volume from a cup of coffee) involves simultaneous oral and pharyngeal stages ... The more we understand the predictable variations in normal swallow physiology, the more accurately we will understand each patient’s dysphagia and the effects of our treatment(s) on their function” (Logemann, 1998, p.322).

In planning and implementing treatment strategies, it is important to remember that feeding and swallowing are not isolated behaviors, but occur in coordination with several other body systems. Consequently, a holistic approach that includes addressing the interrelationship of the aerodigestive system and the skeletal, sensorimotor and respiratory systems is necessary (Arvedson and Brodsky, 2002; Swigert, 1998).

Treatment strategies include those that compensate for the child’s physical condition and those that are designed to improve swallowing function directly (Logemann, 2000, p.50). The child’s medical, physical and developmental status will determine whether the strategies described should be applied passively or whether the child can be actively engaged with cues or prompts (visual, gestural, verbal) or trained to carry them out independently.

Compensatory Strategies. These strategies are designed to improve swallowing function indirectly.

Texture modifications

“When the oral phase is characterized by incoordination and delay, the child’s potential for aspiration and choking is greater with thin liquids than with thickened liquids and thick semisolid foods. The thicker textures provide greater sensory information and do not tend to fall back in the oral cavity as quickly as thinner textures. ... In contrast ... children with reduced pharyngeal motility and persistent residue after a swallow are most likely to aspirate on paste-consistency foods, because these firmer, sticky foods are harder to clear from the pharynx with subsequent swallows. Children also may experience considerable irritation and discomfort, which can lead to food refusal and behavioral problems related to feeding” (Arvedson and Brodsky, 2002, pp 443-444).

Among the children for whom texture modifications are indicated are those who:

- have poor muscle control and have trouble chewing, forming a bolus or keeping food in their mouths;
- are aspirating thin consistencies;
- are born with oral structures that have irregular sizes and shapes or deformities;
- cannot open their mouths wide enough to eat because of joint problems, arthritis or injury;
- have oral sensitivity; or
- are transitioning from non-oral to oral feeding and, therefore, lack oral-motor experience with normal food consistency and have possible emotional resistance to the entry of food into the oral cavity.

Children with feeding and swallowing disorders are apt to have varying food likes and dislikes

and tolerate different food textures at various points in time, just as children without disabilities. However, changing medical conditions and the impact of medications may result in the need for more frequent adjustments in diet of children with these disorders.

Commonly used and accepted food texture descriptors include: thin liquid, nectar, honey, pudding, pureed, ground, minced, regular, chopped, mixed consistency, soft, crumbly, chewy, sticky. “Diet texture modification for dysphagia management is a common practice, but one that is open to wide variation across clinicians and facilities in which they work” (McCullough et al., 2003). “The word ‘soft’ means toast, poached eggs and gelatin to some people, whereas, ‘soft’ to other people means cream soup, custard, and tea ... Thin liquids could be considered anything from water to gelatin to nutritional supplements” (Felt, 2006, p.2). **To avoid the potential dangers associated with feeding children with inappropriate textured food, clear communication among all parties regarding diet terminology and manner of preparation is essential. For safety reasons, clear descriptors of texture and multiple examples of allowable food choices must be insisted upon and this information must be clearly communicated to those responsible for food preparation and feeding.** To facilitate maximum compliance, the recommended diet should be developed with as much consideration as possible for the child’s food preferences and the family’s attitudes and cultural values. **Food texture should not be changed arbitrarily. A thorough review of the child’s status in all areas of health and development needs to be undertaken before dietary changes are made.**

In response to concerns about confusion caused by variations in food texture terminology, the American Dietetic Association convened a multidisciplinary task force to develop “national standards for dysphagia diets and common terminology that will enhance communication among professionals, institutional food preparers, and food industry leaders” (Felt, 2006, p.1). In 2002, the association published the National Dysphagia Diet that includes the four levels of food consistency and four levels of liquid thickness described below in Tables 2 and 3 (McCullough et al., 2003).

Level	Description
<ul style="list-style-type: none"> • Level 1: Dysphagia – Pureed 	<ul style="list-style-type: none"> • Homogenous • Very cohesive • Pudding-like • Requiring very little chewing ability
<ul style="list-style-type: none"> • Level 2: Dysphagia – Mechanical Altered 	<ul style="list-style-type: none"> • Cohesive • Moist • Semisolid foods • Requiring some chewing
<ul style="list-style-type: none"> • Level 3: Dysphagia – Advanced 	<ul style="list-style-type: none"> • Soft foods that require more chewing ability
<ul style="list-style-type: none"> • Level 4: Regular 	<ul style="list-style-type: none"> • All foods allowed

Table 3. Levels of Liquid Viscosity	
Level	Description
Thin	1-50 centiPoise (cP)
Nectar-like	51-350 cP
Honey-like	351-1,750 cP
Spoon-thick	>1,750 cP

The National Dysphagia Diet has been peer reviewed but is not yet widely used in pediatric dysphagia. “In pediatrics, the puree should be smooth, semi-liquid and not require chewing. The mechanically altered diet should range from grainy to mashed. Crisp foods tend to be easier to chew, developmentally, than ‘soft foods’” (Arvedson, personal communication, Aug. 31, 2006).

Thickening and thinning food. Some children with feeding and swallowing disorders need to have their food thickened in order to improve swallowing and reduce the risk of aspiration. In selecting thickening agents, Winstock (2005) recommends consideration of the consistency and temperature of the food when the agent is added; the effects if the thickened food is left to stand; the taste of the agent; and the preparation method. She refers to three basic types of thickening agents that may be used with foods on the continuum from liquid to solid: those that must be prescribed, commonly available food products and commercial products. With respect to prescribable products, she notes the importance of supervision by a doctor or dietician. Other children need to have their food thinned to manage it better. Thinning is typically accomplished by adding liquids, such as water, milk or juice.

Positioning and posture

Positioning the child appropriately for feeding is necessary because “Postural changes generally change the direction of food flow and the dimensions of the pharynx” (Logemann, 2000, p.51). Particular postures should be selected with consideration for the need for overall postural stability, including the appropriate balance of muscular tension and relaxation and the reduction or elimination of abnormal reflexes. The child’s age and medical condition will also influence the selection of particular postures.

The purposes of, and problems addressed by, sample positions and postures may be found in Table 4 on the following page. (For a summary of problems in these areas that can interfere with feeding and swallowing and treatment techniques, see, Klein and Delaney, 1998; Morris, 1985; Morris and Klein, 2000 1998; Swigert, 1998; and Winstock, 2005.) Feeding and swallowing team members or external consultants trained in neurodevelopment can serve as a resource for understanding the rationale for selecting particular postures and how to implement them while feeding children.

Position/Posture	Purpose	Problems Addressed
Cradling child in one arm with head slightly elevated Front facing (child in lap with head slightly elevated) Side-sitting child across lap Seating child beside adult	Align posture Elevate head and neck Support trunk	Postural instability Inhibit abnormal tone and reflexes
Prone lying with shoulders higher than hips	Use gravity to help jaw and tongue fall forward	Jaw and tongue weakness Aspiration
Lowering chin	Improve contact between base of tongue and wall of pharynx Narrow entrance to airway Put epiglottis closer to posterior wall of pharynx	Delay in triggering pharyngeal swallow Reduced closure of larynx Reduced contact between pharyngeal wall and base of tongue
Neck elongation with chin tuck	Increase tongue stability for more forward movement of tongue	Tongue retraction Tongue instability
Lifting chin	Facilitate oral drainage by gravity	Severe oral tongue problems
Holding breath during swallow	Help protect airway voluntarily before and during swallowing	Concerns about airway closure
Rotating head to weaker side	Directs food down stronger side Improves laryngeal closure	Unilateral pharyngeal wall damage Unilateral laryngeal damage
Tilting head or body to stronger side	Help direct food down the stronger side by gravity	Oral and pharyngeal asymmetries on the same side

Sensory stimulation

“Sensory stimulation to the brainstem and cortex is critical for the initiation of the oral swallow and the triggering of the pharyngeal swallow. Both of these points in the swallow are sensory motor integration points, that is, moments when sensory information sent to the cortex and brainstem is recognized in the CNS as a swallow stimulus and the resulting motor action is initiated” (Logemann, 2000, p.51).

Neurological impairments are the major cause of hyper- or hyposensitivity of a child’s sensory system. Unpleasant experiences with oral feeding or invasive medical procedures may exacerbate these problems. Children whose nutritive needs are always or largely met with non-oral feeding are likely to need oral sensory experiences to prepare them for transition to oral feeding. Particularly for children who are hypersensitive or lack oral feeding experience, grading stimuli is an important principle. This may involve gradually increasing the level of stimulation of an identified aversive

stimulus and introducing the stimulus in a progression from body parts away from the mouth to the mouth itself (Swigert, 1998).

The selection of particular strategies will both depend on, and be directed to, the child's state of alertness, emotional state, muscle tone and anatomic areas of concern. (Environmental stimulation is addressed in the section on the eating environment on page 45.)

Sensory stimulation techniques described by Arvedson and Brodsky (2002); Logemann (2000); and Swigert, (1998) include:

- changing the volume, temperature or thickness of the bolus;
- changing bolus taste by using sour or bland boluses;
- touching the corner of the mouth or inner cheek with a drop of liquid;
- supporting the child's hand-to-mouth coordination;
- applying pressure in and around the child's mouth;
- stroking (e.g., cheeks);
- brushing (e.g., teeth, tongue, inside of cheeks); and/or
- supporting oral exploration and nonnutritive sucking by the child (e.g., fingers, pacifier, toys in mouth).

There is a paucity of controlled studies of the foregoing techniques in children. While they may be intuitively useful or have been found clinically useful in some cases, there is some evidence base for these changing the volume, temperature or thickness of the bolus (Joan Arvedson, personal communication, Aug. 31, 2006).

Food presentation

The manner in which food is presented to children depends on factors such as the child's developmental and medical status. Because children with feeding and swallowing disorders may not be able to consume food in an age appropriate way, it is important for school personnel involved with these children to understand the strategies used by younger children.

Food presentation is also influenced by family values, beliefs, attitudes and traditional practices. For example, families may have different values about when to introduce foods on the developmental continuum, when it is considered appropriate for a child to be an independent self-feeder and what types of foods constitute an appropriate diet. Acceptance of disabilities and the need for outside intervention also vary across cultures. Teams need to be sensitive to these cultural factors. However, dialogue with the family to encourage different approaches may be critical to help families meet the feeding and swallowing needs of their child.

Bottle feeding. From a developmental perspective, children are generally weaned from breast- and bottle-feeding before entering preschool. However, school personnel have reported that some of their young school age children with severe disabilities continue to be bottle-fed for their primary nutrition due to their developmental, rather than chronological, age. Even when children transition to developmentally appropriate cups and eating utensils, they may continue some breast or bottle feeding, either for sustenance or for security through the transition. (For a discussion of this topic, including intervention strategies for particular problems, see Swigert, 1998, chapters 6 and 7 and

Arvedson and Brodsky, 2002, chapters 6 and 12.)

Compensatory strategies, selected depending on the source of the problem, may include:

- adjusting child’s posture for stability and alignment;
- supporting jaw and cheek;
- pulling nipple gently from child’s mouth to encourage stronger sucking;
- stroking tongue;
- applying pressure to the palate;
- adjusting lips to increase closure around nipple;
- placing nipple midline on tongue and pressing downward on tongue;
- adjusting rate of flow by changes to bottle nipple; and
- changing texture of bottle liquids.

Spoon feeding. Children with feeding and swallowing problems may not transition to spoon-feeding at the normal age (4–6 months) for a variety of reasons. Arvedson and Brodsky (2002) and (Swigert (1998) point out that, because infants lack the control to use their upper lips to draw food from the spoon, early spoon feeding is often characterized by the feeder scraping the food against the upper gum. The child at this stage uses a suckling pattern that includes some tongue thrusting, similar to that used in breast- or bottle-feeding. This feeding pattern tends to continue until the feeder determines the child has had enough food or the child shows signs of not wanting to continue.

“In contrast, effective spoon-feeding occurs when the infant opens the mouth far enough for the spoon to be placed easily at midtongue. Slight downward pressure will encourage lip closure around the spoon. The feeder then removes the spoon and should not need to scrape food off the palate. The food is on the tongue at a location that encourages bolus formation and a swallow with appropriate timing and coordination. There should be minimal loss of food as the infant begins to use some lateral tongue and up-down sucking movements, not the in-out primitive suckling. This is the desired pattern for all spoon feeding and needs to be the goal for all children, including those with significant oral-motor incoordination” (Arvedson and Brodsky, 2002, p.434).

In addition to the proper placement of the spoon, techniques for jaw support and postural stability may need to be considered. For children with oral hypersensitivity, desensitization may be needed to avoid the development of maladaptive patterns and emotional reactions.

Chewing and biting. As children become more adept with the pureed foods that are used when spoon-feeding is introduced, the range of texture begins to expand, starting with foods that mix easily with saliva to form a bolus (Arvedson and Brodsky, 2002 and Swigert, 1998). Initially, the placements of choice are on alternate sides of the mouth between the gums or teeth (Arvedson and Brodsky, 2002; Swigert, 1998). Early chewing, typically at 6–7 months of age, consists primarily of vertical jaw movement and progresses to lateral tongue and rotary jaw movements between 2 and 3 years of age (Arvedson and Brodsky, 2002). Biting is a more advanced skill related to

chewing that requires the ability to move the food to the lateral chewing surfaces (Swigert, 1998). Failure to chew what is bitten before swallowing can lead to gagging and choking.

Because the tongue ultimately propels the bolus from the mouth into the pharynx, the child will need to acquire skill in moving the food from the lateral surfaces to the middle of the tongue. If the bolus is not adequately formed, the food will need to be moved laterally again for further chewing and then back to center (Swigert, 1998). The lips will need to close adequately to keep the food in the mouth (ibid). These oral motor movements may require the use of compensatory strategies to support the jaw and lips and to adapt positioning and ensure postural stability. (The value of oral motor exercises is discussed under direct strategies on page 56 in these guidelines.)

Straw and cup drinking. Cup drinking is usually introduced shortly after spoon-feeding. Swigert (1998) advises that, initially, children with feeding and swallowing difficulties may require thickened liquids because they flow more slowly, allowing the child to exert more control and avoiding startle from a quicker flow of thinner liquid. Arvedson and Brodsky (2002) recommend using a transparent cup. “Criteria for cup selection include wide lip and narrow base permitting it to be tipped without the child’s head extending back, a rolled rim that allows for a stabilized bite during drinking, and flexibility so that it will not crack if a child has a bite reflex” (ibid, p.436).

For children who are unable to lift a cup, using a straw may be the only way to increase their independence in drinking. Strategies mentioned by Arvedson and Brodsky (2002) and Swigert (1998) to support the development of straw drinking, when it is deemed safe, include:

- modifying the size and material strength of the straw (e.g., thick wall with small diameter to minimize drawing in air);
- placing the straw inside a squeezable bottle (e.g., mustard or water bottle) to facilitate drawing the liquid upwards;
- immersing the straw in liquid and then drawing it out with a finger over one end and inserting the other end in the child’s mouth; and
- inserting the straw in a cup with a lid or spout that is placed on a table, so that the child can stabilize the arms on the table and place his or her hands around the cup.

As with other aspects of food presentation, strategies to support cup and straw drinking may also include jaw stabilization and posture/positioning modifications.

Feeding pattern

Whether the child is being fed or is self-feeding, Logemann (2002) recommends trying the following strategies to improve the outcome:

- slowing the pace of feeding to allow the child time to clear a bolus and any residue before introducing another (laryngeal elevation – observed and felt – is a clue for the introduction of the next portion);
- changing the volume of food, where it is placed in the mouth and the degree of pressure applied to the feeding implement; and
- encouraging dry swallowing between boluses or alternating solids and liquids to help clear residue.

Volitional coughing and throat clearing

Training to cough voluntarily or clear the throat may be useful for children who need help clearing residue following a swallow (Manganello et al., 2005). However, children with neurological impairments may have weakened coughs or be unable to easily clear their throats. Although the cough can clear the airway, it won't necessarily clear residue from the pyriform sinuses, for example (personal communication from Nancy Swigert, Aug. 20, 2006).

Direct Therapy Strategies. These strategies are designed to directly affect swallow function through the child's practicing "active exercise" (Logemann, 2000, p.52).

Oral motor exercises

Exercises to increase the range of motion, strength, or endurance of the muscles related to feeding and swallowing have frequently been included in feeding and swallowing intervention. Their purpose has been to improve bolus preparation and control for efficient passage into the pharynx and to protect the airway from aspiration. The major focus of these exercises has been increasing tongue tip elevation, improving jaw control, decreasing tongue thrust and developing lip closure. (See Klein and Delaney, 1998; Swigert, 1998; Evans Morris and Dunn Klein, 2000.)

Oral motor exercises derived from treatments for neuromuscular problems in the trunk and limbs in physical and occupational therapy (Clark, 2003). The value of their use has been called into question in recent years. "Because the oral/pharyngeal/laryngeal systems differ from the limbs in significant ways, the rationale and/or application of the treatment may not perfectly generalize to the speech and swallowing musculature" (Clark, 2003, p.401).

For example, exercises that address range of motion "involve stretching/moving each structure(s) as far as possible, holding the structure in the extended position for 1 second, then releasing it" (Logemann, 2000, p.52). Clark (2003) points out that targeting the lips and tongue for this type of exercise is inappropriate because of the absence of stretch reflexes in these muscle groups. However, in pointing out the need for proper target selection, she does state that, although research is lacking, there may be more responsiveness in the "jaw-closing muscles, which have a dense distribution of muscle spindles and clearly observable stretch reflexes ..." (ibid, p.407).

Similarly, there is controversy about resistance exercises to build strength and endurance. Logemann (2000) mentions that "Resistance exercises involve using a tongue blade to apply pressure to the lips or tongue (tip, sides, and/or surface) while the child exerts effort with the tongue or lips against the tongue blade" (ibid, p.52). Clark (2003) notes that "the limited data available have failed to reveal a consistent relationship between endurance and performance in speakers with dysarthria or oral dysphagia" (ibid, p.411). However, she also states that: "There is evidence that chewing and swallowing require forces greater than those required for speech. Thus, it is possible that reduced strength and/or endurance will have a greater impact on swallowing ability than on speech production" (ibid, p.411). All of these factors point to the need for careful consultation among all parties involved in developing a child's feeding and swallowing plan when oral motor exercises are under consideration.

Swallowing maneuvers

These strategies “are taught to the child to change the timing or strength of selected movements during the oropharyngeal swallow. These require direction-following but can be taught to even young children as a game” (Logemann, 2000, p.53). Table 5 below outlines the four swallowing maneuvers described by Logemann (2000). The reader is referred to this citation in the bibliography for greater detail.

Maneuver	Purpose	Description
Supraglottic swallow (can be taught to children who have good language as young as 2)	Close true vocal folds before and during swallow	Inhale Hold breath Swallow while holding breath Cough
Super-supraglottic swallow (can be taught to children who have good language as young as 2)	Close entrance to airway (at level of false vocal folds)	Same as above with addition of bearing down during swallow
Mendelsohn maneuver (position of larynx may make this inappropriate for younger than 8)	Change laryngeal motion and cricopharyngeal opening	Swallow normally with awareness of laryngeal movement Hold laryngeal elevation
Effortful swallow	Improve pressure generated by tongue and base of tongue to help clear bolus	Squeeze very hard with all muscles while swallowing

Ethical Considerations

Regular and open communication among all team members is key to avoiding conflicts that create ethical problems. These guidelines have attempted to address ethical issues that may arise as school districts address the feeding and swallowing needs. These topics and the pages where they are discussed include:

Issue	Pages
Confidentiality of health information	13–14
Communication with third parties	14–15
Conflict resolution	
• Refusal of consent for evaluation	32
• Refusal of consent for services	39
• Refusal of consent for reevaluation	42
• Disagreement about feeding plan	43–44
Administrative Support	22–23
Liability insurance	23
Personnel	
• Competence/scope of practice	21–22
• Training	22

Glossary

aspiration: The ingestion of any material below the level of the true vocal folds into the trachea.

epiglottis: Part of the larynx that extends above the vocal folds that closes off the upper part of the larynx during swallowing.

esophagus: Part of the digestive tract that extends from the lower end of the pharynx to the stomach entrance.

fauces: Tissue between mouth and throat, especially the arches formed by these tissues and their underlying muscles.

hard palate: The bony structure forming the roof of the mouth.

hypopharynx: The lower part of the throat between the larynx and the oropharynx (back of the mouth).

larynx: Includes cartilage, muscles and ligaments that extend from the base of the tongue and the hyoid bone to the beginning of the trachea; commonly referred to as the voice box, but is important in protecting the airways from food and beverages as well as objects that may be deliberately or inadvertently swallowed; position lowers in neck with age; elevates during normal swallow.

mucosa: Mucous membranes; membranes that secrete mucous.

oropharynx: The part of the throat that extends from the soft palate to level of the hyoid bone in the larynx; visualized as the part of the throat at the back of the mouth.

palate: Roof of mouth; includes bony structure, called the hard palate (front and middle) and soft muscular tissue, called the velum or soft palate (back).

pharynx: Part of the respiratory and digestive tract that extends from the back of the nasal passage to the esophagus; commonly referred to as the throat; divided into three parts: the nasopharynx, oropharynx and laryngopharynx (oropharynx becomes evident with growth during the first year of life).

proprioceptive: Relating to proprioception (the awareness of bodily movement and position and touch).

regurgitation: The back flow of food or liquid back up the digestive tract after it has been swallowed. The food or liquid may be re-swallowed, expelled nasally or vomited orally.

soft palate: Soft muscular tissue that extends from the back of the hard palate to form the uvula, a structure that can be seen hanging down at the back of the mouth; also includes the side muscular arches at the back of the mouth leading to the throat.

subcortex: Part of the brain below the cortex.

trachea: Part of the respiratory tract that extends from below the vocal folds to the bronchial tubes.

tracheostomy: Surgically made opening in the trachea to allow insertion of a tube to ease breathing.

uvula: See soft palate.

velopharyngeal port: The part of the upper aerodigestive tract where the nasal passage merges with the upper throat at the back of the mouth. The muscles of the soft palate and throat work to close the port to avoid nasal regurgitation during swallowing.

velum: See soft palate.

viscosity: Property of liquids; thickness or resistance to flow.

Sources: Arvedson & Brodsky, 2002; Nicolosi, L., Harryman, E., & Kresheck, J. (2004); Merriam Webster Dictionary.

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Appendices

FEEDING AND SWALLOWING SERVICES QUESTIONNAIRE

District _____ Contact _____

Telephone _____ Email _____

How many children in your district have current IEPs that include feeding/swallowing goals/objectives?

Under what skill area(s) do goals for feeding/swallowing appear on the IEPs (page 4 of state form) of children receiving these services? ___ Self Help ___ Health ___ Social/Behavioral ___ Communication ___ Gross/Fine Motor ___ Independent Living ___ Other

Which district staff implement feeding/swallowing goals/objectives in a child's IEP?

- O.T. Special Education Teacher
- P.T. Regular Education Teacher
- SLP Special Education Aide/Para
- Nurse Regular Education Aide/Para
- Other (Please give position _____)

What determines who implements the feeding/swallowing goals/objectives in a child's IEP?

- Skill area on IEP
- Expertise of staff, regardless of skill area on IEP
- Other (Please explain _____)

What training have personnel who implement feeding/swallowing goals/objectives had?

What are your major concerns in the area of feeding/swallowing?

(Insert District and School Name)

REFERRAL FORM FOR CONCERNS ABOUT FEEDING/SWALLOWING

Below are characteristics of students who may be at risk for or have problems with feeding and/or swallowing. If you have a student who exhibits any of these characteristics, please check all that apply and return this form to _____.

Name _____ Grade _____ Teacher _____

Disability Category (if any) _____

Referral Source _____ Referral Date _____

- _____ Poor general upper body control/posture
- _____ Unusual head/neck posture during eating
- _____ Difficulty recognizing food tactilely
- _____ Frequent refusal to eat or drink
- _____ Difficulty placing or keeping food in mouth
- _____ Difficulty initiating or maintaining suck
- _____ Difficulty controlling food/beverage in mouth or excessive mouth movement during chewing or swallowing
- _____ Difficulty starting to swallow
- _____ Frequent gagging during/after eating or drinking
- _____ Food texture hypersensitivity/aversion
- _____ Frequent spitting or vomiting during or after eating or drinking
- _____ Need to swallow a few times to get food down
- _____ Repeated drinking while or immediately after chewing or swallowing
- _____ Food left on tongue or pocketed on side of mouth after swallowing
- _____ Food regurgitated through nose while or after eating or drinking
- _____ Coughing/choking during/after eating or drinking
- _____ Irritability or behavior problems during eating
- _____ Watery eyes (tearing) during or after eating
- _____ Indication/expression of pain during swallowing
- _____ Gurgly voice quality or breathing, especially after eating or drinking
- _____ Feeding periods longer than 30 minutes-40 minutes
- _____ Frequent bouts of pneumonia or other chronic respiratory problems
- _____ Weight loss of unclear origin, failure to gain weight appropriately or concerns about malnutrition
- _____ Cleft palate or other anatomic malformation likely to affect eating or drinking
- _____ Central nervous system abnormalities or injuries (e.g., cerebral palsy, genetic syndromes, traumatic brain injury,)
- _____ Neuromuscular disorders (e.g., muscular dystrophy, other abnormal muscle tone)
- _____ Intellectual disability
- _____ Pulmonary system deformities or malfunctions
- _____ Metabolic disorders
- _____ Vocal cord weakness or paralysis
- _____ Current or past tube feeding

Additional Information or Comments: _____

Sources: Arvedson and Brodsky, 2002; Homer, 2006; Swigert, 1998

(Insert District and School Name)

FEEDING AND SWALLOWING CONSULTATION REPORT

Name _____ Date of Birth _____ Age _____
Teacher _____ Referral Source _____
Disability Category (if any) _____ Date Initially Identified _____
Current Services _____
Consulting Personnel _____
_____ Consultation Date(s) _____

BACKGROUND INFORMATION

Eating/drinking patterns of concern (Include examples, times, locations, strategies that have been tried and their outcomes)

Relevant birth, developmental, medical and social history (including recurrent upper or lower respiratory issues, tracheostomy, tube feeding, aspiration, oral-motor functioning, cultural factors):

Current health status (including variations from day to day and throughout day; medications, appetite, motor coordination, respiration and oxygen needs, tracheostomy and feeding tubes)

Feeding and nutrition history (including past and current diet, rate of growth, food allergies, food and texture preferences/aversions, relevant cultural factors)

School attendance (including patterns of absence and reasons)

Other information

(Insert District and School Name)
FEEDING AND SWALLOWING CONSULTATION

Name _____ . Date of Birth _____ Age _____

FEEDING/SWALLOWING OBSERVATION (Copy this section if more than one observation is conducted.)

Location _____

Date _____ Start Time _____ End Time _____

Observers (Name and Position) _____

Feeding Arrangements:

Type, texture, temperature and quantity of food(s)/beverage(s) _____

Seating _____

Feeding implements _____

_____ Fed self completely _____ Partially assisted _____ Fed entirely by other(s)

Name/position of person assisting/fully feeding child _____

APPENDIX C

(Insert District and School Name) **FEEDING AND SWALLOWING CONSULTATION**

Name _____ Date of Birth _____ Age _____

FEEDING/SWALLOWING OBSERVATION (Copy this section if more than one observation is conducted.)

	No Concern	Concern/Comments
Neuromuscular Function		
Posture		
Tone		
Reflexes		
Other		
Behavior		
Appetite		
Food acceptance		
Rate of eating/drinking		
Socio-communicative interactions with feeder(s)		
Other		
Sensory Function		
Vision		
Hearing		
Taste		
Smell		
Defensiveness		
Pain on swallowing		
Other		
Physical Function		
Level of arousal		
Maintenance of alertness		
Heart rate		
Respiration rate		
Respiration pattern		
Other		

APPENDIX C

(Insert District and School Name) **FEEDING AND SWALLOWING CONSULTATION**

Name _____. Date of Birth _____. Age _____

FEEDING/SWALLOWING OBSERVATION (Copy this section if more than one observation is conducted.)

Feeding/Swallowing Function	No Concern	Concern/Comments
Accessing food		
Self initiation		
Awareness of food in or near mouth		
Awareness of appropriate quantity		
Response to temperature(s)		
Response to taste		
Response to texture		
Control for sucking, sipping, biting, rotary chewing, bolus formation and preparation for swallowing		
Drooling of saliva		
Food leakage from mouth		
Clearing food from lips and mouth		
Tongue thrust		
Coordination of suck-swallow and breathing		
Elevation of larynx during swallow		
Elevation of larynx during cough		
Rate of feeding		
Duration of feeding		
Energy used to complete feeding		
Persistence		
Need for cueing or encouragement		
Other		

APPENDIX C

(Insert District and School Name)
FEEDING AND SWALLOWING CONSULTATION

Name _____ Date of Birth _____ Age _____

FEEDING/SWALLOWING OBSERVATION (Copy this section if more than one observation is conducted.)

	No Concern	Concern/Comments
Aspiration Indicators		
Throat clearing		
Coughing		
Gagging		
Color change		
Voice change		
Other		

SUMMARY

RECOMMENDATIONS

(Insert District/School Name, Address, Phone)

TO: (Physician's name)

FROM: (name and title)

RE: REFERRAL FOR INSTRUMENTAL SWALLOW STUDY for

Name _____ **DOB** _____

Address _____

Parent/Guardian _____

Phone Number _____

On _____ (dates), a clinical observation was conducted by school personnel (or our school's feeding and swallowing team) due to concerns about _____'s feeding/swallowing skills. This observation and case review resulted in a recommendation for an instrumental swallow study. A copy of the Feeding and Swallowing Consultation Report is attached for your information.

The following information is sought from the instrumental swallow study:

1. _____
2. _____
3. _____

School personnel would appreciate the opportunity to be present. Kindly notify me of the date of the scheduled study and who should be contacted to arrange school attendance. Thank you for your cooperation.

APPENDIX E

Feeding Goals and Objectives:

Goal:

_____ will demonstrate improved ability in feeding/eating for effective participation in school related activities/environments through the achievement of the following objectives:

Objectives:

Positioning

_____ will maintain appropriate positioning for feeding to allow optimal intake of foods and/or liquids (choose one or more)

- When held/placed in a semi-reclined position
- When seated beside the feeder with support and/or equipment provided
- When positioned upright with feet, hips, and knees at 90 degrees
- When positioned with a chin tuck
- When in a sidelying position

_____ Will maintain appropriate positioning for feeding to allow optimal intake of foods and/or liquid when hypertonicity is inhibited before positioning.

_____ Will maintain appropriate positioning for feeding to allow optimal intake of foods and/or liquid when stimulated for increased muscle tone designed to compensate for hypotonicity before positioning.

Sensory

_____ Will accept sensory activities designed to improve awareness of the cheeks, jaw, lips, and tongue in order to increase mobility/movement related to feeding (taste, temperature, smell, texture...)

_____ Will tolerate sensory activities designed to decrease hypersensitivity (taste, temperature, smell, texture...) in order to improve feeding skills.

Oral-Motor

_____ Will demonstrate improved dissociation (separation of movement) through stabilization and/or strengthening of the jaw for increased mobility related to feeding skills.

_____ Will demonstrate improved dissociation (separation of movement) of the lips for increased mobility and/or lip closure in order to improve feeding skills.

_____ Will demonstrate improved tongue dissociation (separation of movement) for increased mobility in order to improve feeding skills.

_____ Will demonstrate improved grading of the jaw in order to increase mobility and segmentation of movement as it relates to effective feeding skills.

_____ Will demonstrate improved grading (segmentation of movement) of the lips as it relates to feeding skills in order to increase (choose one or more)

- Lip closure
- Lip retraction
- Lip protrusion
- Lip mobility

_____ Will demonstrate improved tongue grading (segmentation of movement) as it relates to feeding skills in order to increase (choose one or more)

- Tongue elevation
- Tongue depression
- Tongue lateralization
- Tongue mobility

Self Help

_____ will demonstrate improved self feeding through the utilization of adaptive equipment.

_____ will demonstrate improved ability to grasp a cup/adaptive cup and bring to mouth with reduced spillage (choose one)

- with assistance
- independently

_____ will demonstrate improved ability to bring a cup with a straw to his/her mouth with reduced spillage

- with assistance
- independently

_____ will demonstrate improved ability to grasp a spoon/adaptive spoon to scoop food with reduced spillage (choose one)

- with assistance
- independently

Source: Consolidated School District of New Britain

(Insert District/School Name)

FEEDING/SWALLOWING PLAN

Name _____ Student ID _____

DOB _____ Age _____ Grade _____ Teacher _____

Parent(s) _____

Phone (Home) _____ (Work) _____ (Cell) _____

School Case Manager: Name _____

Location(s)/schedule _____

Phone(s) _____

Primary Physician _____ Phone _____

Other Emergency Contacts: (name, relationship to child, phone) _____

Emergency Hospital Preference (name, address, phone) _____

Medication effects that need to be considered _____

Medical Equipment in use that needs to be considered _____

Precautions/Emergency Procedures related to feeding/swallowing _____

(Insert District/School Name)

FEEDING/SWALLOWING PLAN

Name _____ Student ID _____

DIET:

Recommended by _____
(attach physician's or medical dysphagia team's orders)

_____ full tube feeding (____ G tube ____ J tube)
_____ full oral feeding
_____ mixed oral/tube feeding (describe _____)

_____ parent/guardian provides meals/snacks
_____ regular school meals/snacks
_____ modified school meals/snacks (Medical Statement for Children with Disabilities Requiring Special Meals in Child Nutrition Programs)

Food/liquid content/quantity _____

Food/liquid texture (clarify terminology used and preparation method) _____

Feeding schedule _____

SPECIAL EQUIPMENT:

For food preparation _____

For feeding _____

For oral hygiene _____

Comments:

SEATING

_____ regular seating
_____ wheelchair _____ at table _____ tray attached
_____ special seating (describe _____)

Comments:

(Insert District/School Name)

FEEDING/SWALLOWING PLAN

Name _____ Student ID _____

POSITIONING:

- _____ independently upright
- _____ supported upright (how? _____)
- _____ independently reclining (how? _____ angle _____)
- _____ supported reclining (how? _____ angle _____)
- _____ side lying (specify side _____)
- _____ prone
- _____ supine
- _____ other (describe _____)

Comments:

FOOD PRESENTATION

_____ bottle _____ cup _____ straw _____ spoon _____ fork _____ knife _____ bowl _____ plate

Volume of food/liquid per presentation _____

If child is fed, name and title of feeder(s) _____

Placement of feeder/assistor (location and proximity to child _____)

Placement of feeding implements _____

Degree of pressure to be applied to feeding implements _____

Comments:

FEEDING PATTERN

Number of swallows per bolus _____

Provide _____ (quantity,type) liquid after _____ (number) of food presentations.

Comments:

(Insert District/School Name)

FEEDING/SWALLOWING PLAN

Name _____ Student ID _____

SPECIAL TECHNIQUES

_____ sensory stimulation (describe type, timing) _____

_____ volitional cough

_____ volitional throat clearing

_____ head tilting at _____ angle _____ to left _____ to right

_____ head turning to _____ left _____ right

_____ chin lift

_____ chin tuck

_____ holding breath during swallow

_____ supraglottic swallow

_____ super-supraglottic swallow

_____ Mendelsohn maneuver

_____ effortful swallow

_____ other (describe) _____

Comments:

ORAL HYGIENE

_____ Independently clears food from mouth

_____ Requires assistance Who will do this and how? _____

_____ Exhibits sensorimotor issues Who will address and how? _____

_____ Independently brushes teeth/rinses mouth

_____ Requires assistance by _____

Tooth brushing schedule _____

_____ Has oral prosthesis Cleaning schedule _____

Comments

(Insert District/School Name)

FEEDING/SWALLOWING PLAN

Name _____ **Student ID** _____

CHILD'S GOALS AND OBJECTIVES

_____ in IEP
_____ in 504 plan

TRAINING PLAN (School personnel, parents)

FOR	BY	WHAT	WHEN	WHERE	VERIFIED BY

ADDITIONAL COMMENTS

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