

# Swallowing and Feeding Services in the Schools: From Therapy to the Dinner Table

*Emily M. Homer*

Department of Speech/Language/Hearing, St. Tammany Parish Schools  
Covington, LA

*Patricia Carbajal*

Department of Speech and Language Therapy, St. Tammany Parish School  
Covington, LA

*Financial Disclosure:* Emily M. Homer is coordinator of the Speech/Language/Hearing Therapy Program at St. Tammany Parish Schools. Patricia Carbajal is a speech-language therapist at St. Tammany Parish School.

*Nonfinancial Disclosure:* Emily M. Homer has previously published in the subject area. Patricia Carbajal has no nonfinancial interests related to the content of this article.

## Abstract

*Addressing swallowing and feeding in a school system is a team effort. Working closely with parents is essential to the student's progress. This article profiles swallowing and feeding intervention by a school-based team with a 5-year-old Down's Syndrome student with dysphagia and behavioral feeding disorders. The team was able to work successfully with the parents which resulted in the student making significant progress both at school and in the home setting.*

Speech-language pathologists (SLPs) in the school setting work with children who have swallowing and feeding disorders that range from minor oral motor weaknesses to students who require tube feeding. The goal for the school swallowing and feeding team is twofold. The first and foremost goal is for the child to receive adequate nutrition and hydration at school in a safe manner (ASHA, n.d.; Homer, 2008; Homer, Bickerton, Hill, Parham, & Taylor, 2000). The second goal is for students to tolerate optimal diet textures. Professionals in the schools work together to establish safe and efficient feeding that allows the child to participate with peers and family during mealtimes and to access their curriculum. When parents/guardians are involved throughout the process, the student progresses more quickly and there is often carry-over to the home setting (Angell, Bailey, Nicholson, & Stoner 2009). As a result, an added benefit to establishing safe eating and progressing a student's diet at school is the generalization of skills to the home environment. This article profiles a preschool student at an elementary school who is diagnosed with both dysphagia and a behavioral feeding disorder.

## Swallowing and Feeding in the School Setting

The incidence of swallowing and feeding disorders in children can range between 25–45% of typically developing children and up to 80% of children with developmental disabilities making it likely that almost all school districts in the country have students with swallowing and feeding concerns (Arvedson, 2008). According to the Individuals with Disabilities Education Act (IDEA, 2004) school districts have the responsibility to provide access to a Free and Appropriate Public Education (FAPE) for all children. In order for children to be able to access their curriculum, they must be able to do the following:

- Be safe at school, including eating in a safe manner
- Have adequate nutrition and hydration to be able to access their curriculum

- Be healthy enough to attend school
- Eat their meals in a timely manner (American Speech-Language-Hearing Association, n.d.)

Districts can address swallowing and feeding and provide a free and appropriate public education (FAPE) by establishing a system-wide procedure that establishes a safe feeding plan for each student. A swallowing and feeding procedure in the schools should include the following: (a) referral for identifying students; (b) method of evaluating swallowing and feeding skills; (c) interview of parents/guardians; (d) a swallowing and feeding plan to be followed by classroom staff; (e) a system for working with school cafeterias; and (f) therapeutic intervention. The result is that school staff members are aware of the procedures to follow when a child has swallowing or feeding concerns (Homer, 2008).

### **Case Profile: Student with Dysphagia and Behavioral Feeding Disorders in the School Setting**

Mike is a 5 year-8 month old male with a diagnosis of Down syndrome and a special education classification of mild mentally handicapped. After birth, Mike had a history of medical complications, which resulted in frequent hospital stays and doctor visits. He took medications that had a sedating effect, to control recurring seizures from 6 months to 2.5 years old. Mike's early developmental years were overshadowed by his serious medical conditions. As a result of his medical issues, he had limited exposure to a variety of foods. His parents, because of a fear of him choking, provided him with a diet of strictly puree texture foods. By 2.5 years old Mike's medical condition was stabilized; however, he showed no interest in eating and had missed early experience with different textures and chewing. His parents reported that he associated food with pain and that eating did not appear to be pleasurable to him. He was observed to gag on different textures and would stick his hands down his throat to make himself regurgitate. At night, according to his mother, he would get out of bed, seek out a parent or sibling in their bedroom, and vomit. He was diagnosed with gastroesophageal reflux disorder (GERD) but his parents chose not to follow up with medication. The source of his vomiting was not determined and could have been the result of the GERD or behavioral. The parents reported that a modified barium swallow study revealed a safe pharyngeal swallow. At the time that he entered school, his diet consisted entirely of a pureed diet supplemented by a Pediasure/yogurt/soy milk drink. An oral mechanism examination revealed a delay in oral motor functioning and some sensory issues. In addition to limited exposure to developmentally appropriate foods, he also had limited contact with adults other than his parents. Mike is nonverbal and communicates using signs and gestures.

### ***Swallowing and Feeding Procedure***

The established, system-wide swallowing and feeding procedure was followed in the case of Mike. According to his initial, multidisciplinary special education evaluation, Mike was classified as mild mentally handicapped and was placed in a preschool early intervention classroom at his district elementary school. Swallowing and feeding concerns were identified, as a concern in the evaluation and, as a result, he was referred to the district swallowing and feeding team. In order for the school swallowing and feeding team to determine the extent of Mike's swallowing and feeding concerns and to establish a plan, an interdisciplinary observation (clinical evaluation) was administered, a thorough parental interview was conducted, and an individualized education program (IEP) meeting was held. Following this process, a swallowing and feeding plan was established that specified how Mike should be fed at school to ensure safety. Following the development of his plan, the classroom staff was trained on how to implement the plan. The SLP on the team worked with the cafeteria staff to ensure that Mike's meal plan complied with the restrictions on his swallowing and feeding plan. The school team consisted of the following school-based employees: SLP, OT, nurse, PT, classroom teacher, paraprofessional, school administrator, and cafeteria manager. Each member brings specific expertise and work together to identify and treat swallowing and feeding disorders in the school setting. In addition, the school team works closely with the student's parents who also are members of the team, as well as, the medical team

to ensure that the student is safe when eating at school (Homer et al., 2000; Homer, 2008). The SLP on the team functions as the case manager for the student and works to coordinate the team procedure and document the process (Homer, 2003).

## ***Classroom Staff and Parent Training***

A swallowing and feeding plan and individualized health plan were written and, following the IEP, the classroom staff was trained on both plans. To encourage carry-over to the home setting, the parents were also trained on both plans.

## ***Implementation of the Swallowing and Feeding Plan***

The swallowing and feeding plan addresses positioning, equipment, feeding status, diet and food preparation, and feeding plan techniques and precautions. The plan indicated pureed foods and thin liquids, which were fed to him at lunch in the cafeteria. The parents initially decided to pack his lunch to bring to school. In order for Mike to eat in the cafeteria with his peers, an adapted seat was acquired from the physical therapist, which supported his feet, since he was small and could not stabilize himself on the regular cafeteria seat. Eating in a noisy school cafeteria was judged potentially overwhelming for Mike; therefore a provision in the feeding plan included the option for Mike to complete his meal in the classroom if he did not finish in time. This allowed him the opportunity to eat in the cafeteria with his peers, but to also receive adequate nutrition. The classroom teacher kept a notebook with a daily eating log that allowed for constant communication between home and the classroom.

## ***Student's Feeding Therapy Program***

In Mike's case, direct therapeutic intervention was also recommended. The team identified the following goals for Mike's swallowing and feeding interventions:

- To increase tolerance for different foods and textures by desensitizing the student through oral motor stimulation using a Nuk brush prior to mealtimes and incorporate therapist manipulated exercises to improve tongue lateralization, lip closure, and overall oral motor skills for eating (Beckman et al., 2004).
- To reduce tongue protrusion by introducing various different cups and working with the mother to decrease the use of straw drinking.
- To gradually increase the variety of foods, textures of the foods, and the amount of food and liquids consumed during the school day by adding one or two new foods at a time.
- To promote independent feeding including encouraging finger feeding and spoon to mouth.

These goals were dependant on working closely with the parents through brief conferences, phone calls, and emails, in addition to the regular feedback in the student's communication log notebook.

Recent research has questioned the effectiveness of oral motor exercises for the purpose of improving oral motor skills and functioning (Lof, 2003). A review of current literature and studies concluded that research in the area of oral motor therapy for feeding and swallowing is limited and inconclusive (Arvedson, Clark, Lazarus, Schooling, & Frymark, 2010; Davies, 2003; Snider, Majnemer, & Darsaklis, 2011; Walshe, Smith, & Pennington, 2012). In addition, there seems to be a degree of clinical expertise/expert opinion supporting the use of oral motor exercises to address oral phase dysphagia; however, the effectiveness is based on the nature of the student's disorder, the limitations of the student's neuromuscular condition, the regular intense implementation of the exercises, and the individual's response to treatment. All oral motor treatment should

include consistent data taking to determine its effectiveness (Bahr, 2008; Beckman et al., 2004; Sheppard, 2005).

### ***Therapeutic Intervention: Consultation/Collaboration***

Every student followed by the swallowing and feeding team receives consultative/collaborative intervention to ensure that the plan is being followed with fidelity and that new concerns are identified and addressed. The consultative/collaborative model involves the school team gathering and sharing information, coordinating the work of the team members, and giving feedback (Idol, Paolucci-Whitcomb, & Nevin, 1995). Frequent observations and meetings with the teacher, paraprofessional, and parents are an important part of the collaborative process.

### ***Therapeutic Intervention: Sensorimotor and Diet Progression***

To increase Mike's tolerance for different foods and textures, the SLP established a program of oral motor stimulation on a daily basis. This desensitization addressed reducing his gag reflex and lateralization of the tongue using therapist manipulated exercises which were also implemented by the classroom staff and parents following training (Bahr, 2008; Beckman et al., 2004). A program was designed for Mike where the SLP and OT worked directly with him to increase his ability to chew. His experience chewing was limited to a "chew toy" that his mother gave him at home. The team worked to transfer chewing on the toy to soft dissolvable foods such as graham crackers, saltines, and baby snacks. These were introduced to Mike in the therapeutic setting by dipping them in his preferred drink, placing them on his molars, and giving verbal prompts for him to chew. The therapists taught Mike what chewing was by demonstrating and labeling the activity repeatedly. This process helped to increase his tolerance for increased textures and to encourage chewing. Once the skill was achieved in the therapy setting, the classroom staff and parents were trained to incorporate the additional texture into his diet (Overland, 2011; Weaver, 2008). The SLP and OTs continued to add a variety of foods to chew in the therapeutic setting that encouraged tongue lateralization and formation of a bolus. The regimen of pre-feeding oral sensorimotor exercises and introducing chewable foods in a gradual chaining method resulted in Mike's oral motor skills improving and additional foods being added to his diet (Fraker & Walbert, 2011). As Mike's diet continued to progress at school, the school team kept constant regular communication with the parents and encouraged them to assist in choosing the next food items. Establishing and maintaining communication with parents in the school setting can be challenging and time consuming. Finding a method that is successful for the school team and parents is the key to success in the program.

The team gradually worked up to spoon-mashed foods. Meals were kept pleasant both at school and home, and the family was counseled on the importance of stress-free mealtimes. Mike's avoidance behavior during mealtimes required visual reinforcements to be used to help him comply with the feeding schedule. The district behavior team specialist, a Board Certified Behavioral Analyst (BCBA) determined that Mike was interested in tangible reinforcement and would alter his behavior for a desired object. His interest in the movie "Cars" served as a strong reinforcement. Pictures of the characters were placed on cue cards and Mike was able to hold the card for a few seconds after taking a bite of food.

The school district team followed the National Dysphagia Diet (NDD) to progress Mike from NDD Level 1, dysphagia-puree foods to NDD Level 2, dysphagia mechanical altered foods (McCullough, Pelletier, & Steele, 2003). As the diet progressed, Mike's swallowing and feeding plan was revised. The SLP met with the parents to encourage them to allow Mike to start getting the school lunch. With the parent's support, the team met with the cafeteria manager to review the monthly school menu. A menu was established that included foods that complied with Mike's plan. These foods were the only items placed on his lunch tray. Food items were modified in the cafeteria by classroom staff. Consistency was altered to a mechanical soft texture. Gagging was

effectively decreased by verbally assuring Mike that he was safe which significantly improved mealtime behaviors at home.

### ***Therapeutic Intervention: Self-Feeding***

Once Mike tolerated a variety of food textures without gagging and vomiting, self-feeding was targeted by the feeding team. The school team began by loading the spoon and, followed a sequence of hand over hand, with fading the assistance as he developed the skill. Throughout the process the paraprofessional responsible for feeding Mike in the cafeteria consistently guided him to self-feed with directives such as: “take a bite”, “here’s your spaghetti”, “take a taste”, “pick up the spoon and eat”, and so on. The OT chose utensils, plates, and bowls that were adapted and specialized according to his needs. The team started with Mike’s preferred foods that promoted tongue lateralization and bolus formation and encouraged finger feeding, initially with hand over hand assistance. Drinking from a cup rather than using a straw was encouraged. Mike was verbally prompted to tilt his head back when drinking. The use of these phrases both at school and at home promoted the skills that the school team was addressing and resulted in Mike making regular, consistent progress. Without the home carry-over, progress would have moved significantly slower. By the beginning of his second year in school, at 4.5 years old, the family was able to go to a restaurant, which opened up to new social situations to them. The parents gradually became more confident in their ability to choose foods for Mike and understood his limitations and how they needed to present the food to him.

### ***Working With the Parents***

It is essential that the family’s trust in the team is established at the onset so that they know that the school team will listen to them, want their input, and value it. Sending their child to school for the first time can be a very stressful and emotional time and parents may need the reassurance and support that the school-based team can give them (Garro, Thurman, Kerwin, & Ducette, 2005; Lopez, Clifford, Minnes, & Ouellette-Kuntz, 2008). The parents/guardians should feel that the school team values their opinions and respect that they know and understand their child more than anyone else. These efforts relay the message that the school swallowing and feeding team understands that the parents/guardians are the most important persons in the child’s life (Davis-McFarland, 2008; Handleman, 1995).

The following are suggestions for maximizing parental participation, based on clinical experience and expertise during 20 years of addressing swallowing and feeding in the school setting and working closely with parents:

- Involve the parents/guardians from the very beginning as a valuable member of the swallowing and feeding team.
- Listen to what the parents/guardians have to say and seek their input in how they feed their child at home, including a demonstration at school.
- Connect the parents/guardians with other families and organizations that can offer support, guidance, and help.
- Build on the child’s successes by establishing a system with the parents/guardians that includes training parents/guardians so that what the student does at school is also expected at home.
- Take the time to periodically praise the parents/guardians on how well they are doing with the program.
- Remind the parent/guardian where the child was in the beginning. It can be easy to become stuck on a concern (e.g., the child putting his hands in his mouth), and forget the progress the child has made.

- Respond to the parents/guardian's current concerns by adding new goals to address them both at school and at home. Making the goals meaningful to the family encourages them to invest in the program.
- Determine the most effective way to communicate with the parents/guardians on a regular basis. This can be in the form of notebooks, emails, phone calls, and conferences to share information.

## Conclusion

School systems can have a significant impact on the lives of children with swallowing and feeding disorders and their families. By following a system-approved procedure, including the parents as an essential member of the problem solving team and establishing an ongoing system of communication with the parents/guardians, the school team can help students to develop their swallowing and feeding skills to their maximum potential. Working closely and collaboratively with the family and the medical team ensures that the program is consistent; it addresses the student's most pressing concerns, allows for safety, and provides the student with FAPE. This is one example of a program that was successful in teaming with the parents to help the child to progress. Each student's program will look different but educating and collaborating with the parents/guardians can be the most effective process in addressing student's needs.

## References

- American Speech-Language-Hearing Association. (n.d.). *Clinical Topics/Pediatric Dysphagia*. Retrieved June 15, 2015 from <http://www.asha.org/Practice-Portal/Clinical-Topics/Pediatric-Dysphagia>
- Angell, M., Bailey, R., Nicholson, J., & Stoner, J. (2009). Family involvement in school-based dysphagia management. *Physical Disabilities: Education and Related Services*, 28(1), 6–24.
- Arvedson, J. (2008). Assessment of Pediatric Dysphagia and Feeding Disorders: Clinical and Instrumental Approaches. *Developmental Disabilities Research Reviews*, 14, 118–127.
- Arvedson, J., Clark, H., Lazarus, C., Schooling, T., & Frymark, T. (2010). The effects of oral-motor exercises on swallowing in children: An evidence-based systematic review. *Developmental Medicine and Child Neurology*, 52(11), 1000–1013.
- Bahr, D. (2008, Nov.). "The oral motor debate: Where do we go from here?" Poster session with extensive handout presented at the annual meeting of the American Speech-Language-Hearing Association: Chicago, IL.
- Beckman, D., Neal, C., Phirsichbaum, J., Stratton, L., Taylor, V., & Ratusnik, D. (2004). Range of movement and strength in oral motor therapy: A retrospective study. *Florida Journal of Communication Disorders*, 21, 7–14.
- Davies, F. (2003). Does the end justify the means? A critique of oromotor treatment in children with cerebral palsy. *Asia Pacific Journal of Speech, Language & Hearing*, 8(2), 146–52.
- Davis-McFarland, E. (2008). Family and cultural issues in a school swallowing and feeding program. *Language, Speech, and Hearing Services in Schools*, 39(2), 199–213.
- Fraker, C., & Walbert, L. (2011). Treatment of selective eating an dysphagia using pre-chaining and food chaining therapy programs. *Perspectives on Swallowing and Swallowing Disorders (Dysphagia)*, 20, 75–81.
- Garro, A., Thurman, S., Kerwin, M., & Ducette, J. (2005). Parent/Caregiver stress during pediatric hospitalization for chronic feeding problems. *Journal of Pediatric Nursing*, 20(4), 268–275.
- Handleman, J. (1995). Raising a child with developmental disability: Understanding the family perspective. In S. Rosenthal, J. Sheppard, & M. Lotze (Eds.), *Dysphagia and the child with developmental disabilities* (pp. 355–361). San Diego, CA: Singular.
- Homer, E. (2008). Establishing a public school dysphagia program: a model for administration and service provision. *Language, Speech, and Hearing Services in Schools*, 39, 177–191.
- Homer, E. (2003). An interdisciplinary team approach to providing dysphagia treatment in the schools. In K. Whitmire, N. Helm-Estabrooks, & N. Bernstein Ratner (Eds.), *Seminars in Speech and Language: Surviving and Thriving in the Schools*, 24(3), 215–227.

- Homer, E., Bickerton, C., Hill, S., Parham, L., & Taylor, D. (2000). Development of an interdisciplinary dysphagia team in the public schools. *Language, Speech, and Hearing Services in Schools, 31*, 62–75.
- Idol, L., Paolucci-Whitcomb, P., & Nevin, A. (1995). The collaborative consultation model. *Journal of Educational and Psychological Consultation, 6*(4), 329–346. doi: 10.1207/s1532768xjepc06043.
- Individuals with Disabilities Education Improvement Act of 2004, 20 U.S.C. § 1400 et seq. (2004).
- Lof, G. (2003). Oral motor exercises and treatment outcomes. *Perspectives on Language Learning and Education, 10*, 7–11.
- Lopez, V., Clifford, T., Minnes, P., & Ouellette-Kuntz, H. (2008). Parental stress and coping in families of children with and without developmental delays. *Journal on Developmental Disabilities, 14*(2), 99–104.
- McCullough, G., Pelletier, C., & Steele, C. (2003). National dysphagia diet: What to swallow? *The ASHA Leader, 8*, 16–27.
- Overland, L. (2011). A sensory-motor approach to feeding. Retrieved from <http://journals.asha.org/perspectives/terms.dtl>
- Sheppard, J. J. (2005, June). The role of oral sensorimotor therapy in the treatment of pediatric dysphagia. *Perspectives on Swallowing and Swallowing Disorders (Dysphagia), 14*, 6–10. doi: 10.1044/sasd14.2.6
- Snider, L., Majnemer, A., & Darsaklis, V. (2011). Feeding interventions for children with cerebral palsy: A review of the evidence. *Physical & Occupational Therapy in Pediatrics, 31*(1), 58–77.
- Walshe, M., Smith, M., & Pennington, L. (2012). Interventions for drooling in children with cerebral palsy. *Cochrane Database of Systematic Reviews, 2*, 30. CD008624.
- Weaver, C. (2008). Evaluation and management of behavioral-based and sensory-based feeding problems. American Speech Language and Hearing Association Annual Convention: Chicago, IL.

*History:*

Received April 21, 2015

Revised July 26, 2015

Accepted July 27, 2015

doi:10.1044/sasd24.4.155