



Pediatric Feeding and Dysphagia Newsletter

Dear Fellow Feeders;

Dear Fellow Feeders,

This is the last issue in our subscription year! I sincerely hope you have enjoyed receiving the newsletter and found it informative and entertaining.

In this issue, we continue our discussion of feeding problems among children with autism spectrum disorders. We also feature an excellent case study,

an intensive feeding program and I take you back through the history of feeding just to show you how far we've come!

I hope you will consider renewing your subscription and joining us for next year's travels through this exciting specialty of pediatric feeding disorders.

-Krisi Brackett MS SLP/CCC ,

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Feeding problems among children with Autism Spectrum Disorders

Part II: Interventions for selective eaters

While children with autism spectrum disorders can have a range of feeding problems, selectivity by type has been found to be the most prominent among the few studies that have examined these problems. Because food selectivity by type is the most prevalent, the intervention recommendations described in this article will focus specifically on this problem.

For some children, medical issues such as chronic constipation or gastroesophageal reflux can aversively effect feeding. Whenever possible, these medical issues should be resolved prior to developing a feeding intervention. In a few cases, medical treatment can also affect feeding. Since some medications can decrease appetite or cause nausea, it is important to understand the side-effects of any medications the child is taking and have caregivers discuss medication issues with the prescribing physician. To induce children to take medication, the medication is sometimes mixed with the child's food. This can result in the children avoiding certain foods or unfamiliar foods. If caregivers need to mix medication with food, it is important to ensure the children learn to discriminate the administration of medication from mealtime. Behavioral issues such as sleep problems or severe behaviors like self-injury, aggression, or property destruction may interfere with feeding. In some cases, it is necessary to address these issues prior to developing a feeding intervention.

The development of a successful feeding intervention requires a thorough examination of the child's feeding problem across the settings in which a child eats. Based upon this evaluation and the caregiver's input, measurable goals are established. Feeding interventions are often implemented as a series of smaller steps with each step aimed at achieving one or more of these measurable goals.

Feeding interventions typically consist of one or more behavioral procedures. There are two broad categories of behavioral procedures, those based upon

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Special Points of Interest:

- Current information
- New products
- Research and publications
- Education

Editorial assistance provided by Elizabeth Crais Ph.D. CCC SLP , Division of Speech and Hearing Sciences, UNC-Chapel Hill and Cathy Fox MS OTR/L, Private Practice, Frederick , MD

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Feeding problems among children with Autism Spectrum Disorders
Part II: Interventions for selective eaters
Keith Williams Ph.D., Pediatric Feeding Program, Hershey Medical Center

changing antecedents or things that occur before the target behavior and those based upon modifying the consequences of the behavior.

Antecedent procedures may include, but are not limited to, the following:

Meal and snack schedule – if the child's intake is not currently on a schedule, this is an important initial step. While the meal and snack schedule may not be enough to get children to eat new foods, it can help establish motivation to eat. Children who graze on snack food or drink large amounts of fluid across the day often are not hungry at mealtime. This can sometimes be changed by scheduling the child's intake. Resistance to change and strict adherence to routines are often cited as characteristics of children with autism spectrum disorders; a meal and snack schedule can turn these characteristics into strengths by getting the child into the habit of eating. Establishing a schedule involves not only planning the times food is presented, but developing a set of rules for mealtime behavior. Gaining compliance for mealtime behavior can be helpful because this compliance can generalize to eating.

Graduated exposure – introducing new foods may be easier if only small amounts of the foods are initially presented. In some cases, the initial presentations will consist of only tiny tastes of food, with the size of the food presentations getting systematically larger as the food is accepted without resistance.

Fluid restriction – in a few cases, children consume small amounts of solid foods because they are drinking large quantities of milk, high-calorie formula, or other beverages. In these cases, access to beverages containing calories is limited and water is offered when the child wants to drink between meals and snacks.

Consequence-based procedures may include, but are not limited to, the following:

Contingent attention – the child is praised for appropriate mealtime behaviors, such as eating new foods while inappropriate mealtime behaviors, such as crying or refusing to eat, are ignored. While this procedure may appear to be simplistic, and even common-sense, it is often not used at family meals.

Premack principle – the child is given a bite of preferred food after taking a bite of a new food.

Reinforcement with tangible rewards – the child earns access to a tangible reward, such as a few moments of watching a favorite video immediately after taking a bite of a new food. While access to tangible rewards can be a powerful treatment component, it is important to ensure that access to the reward be contingent on tasting the new food and the child cannot otherwise gain access to the reward.

Fading – new foods are mixed with preferred foods in order to get the child to try the new food. Examples include mixing small pieces of a new fruit in yogurt or applesauce, placing a small piece of a new food on the same spoon as a preferred food, and placing a small piece of a new food on a piece of preferred snack food such as a chip or a cracker.

Token economy – tasting new foods can earn points, stickers, or some other form of token that can be exchanged for reinforcing objects or activities.

Exit criterion – the child is allowed to leave the meal setting as soon as a criterion amount of a new food is eaten. Typically, the child starts by eating a small taste of a new food and the volume of the new food presentation is systematically increased.

While these procedures can be used alone, they are often used in combination. The use of antecedent

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Feeding problems among children with Autism Spectrum Disorders Part II: Interventions for selective eaters

Keith Williams Ph.D., Pediatric Feeding Program, Hershey Medical Center

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procedures can enhance the effectiveness of the consequence-based procedures. In children who are extremely resistant to tasting new foods, a feeding intervention will sometimes take considerable time and patience. It is important to track the progress of the intervention and make changes in the intervention based upon your progress. The implementation of feeding interventions can be difficult, especially in the beginning, and as the child is being presented with new demands such as tasting new foods or sitting at the table, caregivers should be prepared for increases in inappropriate behavior.

The procedures summarized in this article have been used in numerous empirical articles published in several behavioral journals as well as other sources. The references provide an overview of the behavioral approach to treatment and will be helpful to therapists who are not familiar with the behavioral literature on feeding problems.

- Ahearn, W. (2001) Help! My son eats only macaroni and cheese: Dealing with feeding problems in children with autism in C. Maurice, G. Green, & R. Foxx (Eds.), *Making a difference: Behavioral intervention for autism*. Austin, TX: Pro-Ed.
- Babbitt, R. and Williams, K. (2001). Chapter 6: Behavioural aspects of feeding disorders. In V. Preedy, G. Grimble, & R. Watson, (Eds.) Nutrition and the Infant. Kent, U.K.: Greenwich Medical Media.
- Kedesdy, J. & Budd, K. (1998). *Childhood feeding disorders: Biobehavioral assessment and intervention*. Baltimore: Brookes.
- Kerwin, M. (2003). Pediatric feeding problems: A behavior analytic approach to assessment and treatment. *Behavior Analyst Today*, 4, 162-176.

Comment on question about using thickened feeds (question printed in Jan 04 issue)

I'm a speech pathologist working at Children's Hospitals and Clinics in St. Paul Minnesota. I've had the pleasure of receiving your newsletter for the past year or so. I just read your latest newsletter and wanted to comment on one of the questions and answers regarding thickened feedings.

Here at our site, we were running into the same issues regarding how much rice to use and then what nipple to use to get the thickened feeding out. After much trial and error we came up with a consistent recipe for our thickened feedings and nipples that are pre-cut for the extraction.

For infants that aspirate from our NICU, we skip the nectar consistency and go to honey consistency. The recipe we use is always 1 tablespoon of rice cereal to 1 ounce of formula. Depending on the child, we use one of the following 3 pre-cut nipples: the Avent bottle with variable flow nipple (specifically designed for thickened feedings), the Playtex Vent Aire bottle with stage 2 nipple (has a Y cut), or the Gerber Nuk fast flow nipple (silicone or latex).

We have had very good success in getting the infants home on one of these nipples and thickened feedings and the families can find the nipples in the stores. We do order these nipples directly from the company so if there are families that can't easily access the nipples, we can supply them with some for home. Using this plan has helped with continuity between our therapists and also with the nursing staff. We rarely have hand-cut nipple experiences any more and can give the families a clear cut plan that will work consistently at home. In regards to other nipples, our unit is also no longer carrying "preemie" nipples. We have the Gerber slow flow, Gerber Nuk slow flow, and the Munchkin slow flow for feeding options for our babies who seem to get overwhelmed by the "standard nipple". Feel free to share this information with your readers. And feel free to contact me if you want to discuss any of the information further.

Sincerely, Alicia Arrington, MS, CCC-SLP Pediatric SLP
Children's Hospitals and Clinics, St. Paul, MN,
e-mail: alicia.arrington@childrenshc.org

Editors note: Thanks Alicia for sharing your comments!



SAVE THE DATE!

September 17th and 18th, 2004

Paterson, NJ

**PICKING APART THE PICKY
EATER**

TWO VISIONS:

**DAY ONE : A SENSORY INTEGRATION
APPROACH**

**DAY TWO: A MOTOR, MEDICAL AND
BEHAVIORAL APPROACH**

DAY ONE : Madonna Nash MS OTR, a nationally recognized practitioner and speaker from City kids, INC in Chicago, a teacher, An NDTA certified OT with 25 years of clinical pediatric experience will share with us how sensory integration relates to our children with feeding problems.

DAY TWO Allows the senior staff from The Center for Pediatric Feeding and Swallowing in Paterson, NJ to continue the discussion on alignment and movement patterns that affect breathing and feeding, assessment and intervention.

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Dynamics

The history of baby feeding...we've come along way

By Krisi Brackett MS SLP/CCC

Evidence shows us that thousands of years ago many babies were artificially fed from a variety of bottles, feeding cups and other utensils, often with disastrous consequences. In the Middle Ages, a horn was commonly used as a drinking vessel for adults. It is documented that a cow's horn with a scrap of soft leather tied on as a teat was also often used to feed babies.

In 17th century Europe, leather or wood feeding bottles were used; these were later developed into pewter feeding bottles and pap boats, of which many have survived to this day. The majority of these early suckling bottles were of a flask shape, with screw on tops forming a hard round nipple.



Although the materials and design of bottles evolved over the next 400 years, they all had the common attribute of being unhygienic and impossible to clean thoroughly. In conjunction with an overall lack of hygiene, contaminated milk supplies and very little knowledge of babies dietary needs, a horrendous mortality rate of children under two resulted.



In the 18th and 19th century, pap boats and cups were a popular feeding utensil. Many have survived to this day, pewter and Staffordshire ceramic pap feeders being the most common. Al-

though the majority of pap boats were easier to clean than the early feeding bottles, the pap itself was rather undesirable. Pap in its simplest form was just boiled water and flour, with perhaps bread or egg added.

The ceramic suckling bottles of the late 18c and early 19c were difficult to clean, this became a little better when the glass blowers copied the design to produce free blown bottles of the same shape. The food was poured into the opening on the top; placing the thumb over the same opening regulated the flow of milk. The sucking end was stuffed with a piece of cloth or chamois leather. Cow teats preserved in spirit were also used, being tied onto the glass nipple.

A major breakthrough was the invention of vulcanized rubber in the 1840's. The early black Indian rubber teats had a very strong pungent smell and it was some years before suitable rubber teats were being manufactured in great numbers.

At about the same time bottles began to be mass-produced. Most were based on the either the banjo or torpedo shape and used a glass internal tube, attached to a length of black rubber tubing, culminating with a bone mouth shield and rubber teat. Because of the great difficulty in cleaning these bottles they were openly condemned by the doctors of the time, despite this thousands were still being sold well into the 1920's. The design was as such that the baby could be left to feed unattended.



The big breakthrough was the invention of the Allenburg double-ended feeder by Allen and Hanbury in 1894. The design had a teat at one end and a valve at the other end. This enabled the flow of milk to be constant, but more importantly it was the ease of cleaning that made these bottles such a great



success. Many other similar designs were to follow, but such was the success of the Allenburg, the improved 1900 model sold well into the 1950's. The 1950's saw the introduction of the popular narrow neck heat resistant upright

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The history of baby feeding...we've come along way

by Krisi Brackett MS SLP/CCC



Pyrex models.

Baby food

Artificial infant foods became available on a commercial basis, thanks to pioneering efforts of Justus von Liebig, who marketed his "perfect" infant food in 1867. His "formula" was a mixture of wheat flour, cow's milk and malt flour cooked with bicarbonate of potash to reduce the flour's acidity. It was first sold as a liquid but later marketed as an entirely farinaceous powder. "Patent" or "instant" baby foods manufactured by Nestle's and Horlick's contained dried cow's milk with starch or malt and Mellin's Food was made with desiccated malt extract. A final group of foods of pure cereal origin was represented by brands such as Imperial Grain, Eskay's Food, and Robinson's Patent Barley.

Medicine made strides that would have overwhelming effects on health and nutrition. Advances in bacteriology by Pasteur, Koch and their contemporaries made milk handling safer for infant consumption. Milk chemistry and modifications for its improved digestibility were studied in the 1890's. Finklestein devised "protein milk," one with low fat, low carbohydrate and high protein, to "counteract with harmful effects of carbohydrate fermentation in the intestines." Czerny in Austria developed a butter-flour mixture because he felt infant diarrhea was due to fat intolerance.



The term "formula" was derived from Thomas Morgan Botch's approach to "percentage feeding." Complexity in formula construction reached its zenith. Careful attention was paid to exact percentages of fat, carbohydrate and protein. The protein was often split to alter the proportion of whey and casein. A common basic formula, at the time, at Infant's Hospital in Boston was 2-6-2, meaning 2% fat, 6% carbohydrate, and 2% protein. Dr. Lee Forest Hill commenting on his training in Boston said, "One of my duties was examining each day the stools of some 20 infants for neutral fat, fatty acids and soaps. Although I have long since abandoned using carbofuchsin and Sudan 111, nevertheless, I have never overcome the habit of visual and olfactory inspection of stools of sick infants -- "stool gazing" is the present term -- much to the amusement of my house staff." Indeed, pediatric texts of the

era were never without several pictures of stool types, adding vivid color when available.

Other important advances were Henry Coit's artificial milk, acidified milk, and the concept of "curd tension" by Marriott of St. Louis and Chicago's Brennemann. L. Emmett Holt, in 1895, published the highly influential *The Care and Feeding of Children*, the first book for parents.

In 1915, Gerstenberger and his colleagues developed an artificial milk "formula" achieved by adding homogenized vegetable and animal fats and oils to skim cow milk to approximate the fatty acid content of human milk. By 1919, Gerstenberger and Ruh had fed about 300 infants successfully on their S.M.A., Synthetic Milk Adapted. Other companies continued the quest for a closer synthetic approximation of human milk or formula modification for various medical indications. Franklin Infant Food introduced, in 1923, a powdered formulation, later to be called Similac. Enfamil, by Mead Johnson, was a late comer in 1959, but the company, established in 1905, pioneered vitamin research in the 1920's with the first cod liver oil of standardized potency in 1924 and pure solution of Vitamin D in 1929. In 1934, Pablum was introduced as the first precooked vitamin and mineral enriched cereal for infants. That began a fruitful collaboration between E. Mead Johnson and Dr. T. Drake of Toronto. Both men later began extensive and world-famous collections related to the history of infant feeding.

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1. The American Collectors of Infant Feeders <http://www.acif.org/>
2. Baby bottle museum\ : <http://www.babybottle-museum.co.uk>



Case by Case...: Case Study: To Go or Not To Go?

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Many pediatric feeding patients do not make progress after a certain point under a single discipline mode of treatment (I.e. Speech or OT only). Yet with certain patients, parents and therapists struggle over whether they will make progress at all, even with a team-based, intensive, day-treatment approach. Cognitive deficits and atypical learning styles can muddy the waters of prognosis. Furthermore, some parents are unsure about wanting to invest the time and money without an assurance of progress, after having already spent so much time and money on a child's education and therapy. This case illustrates the value of an intensive day treatment program for such a child.

Background: SH is a 5 year old male with a history of chromosome 22 deletion, ventral septal defect, diaphragmatic hernia, and severe reflux. He has been diagnosed with autism. He was referred for home-based feeding therapy, to increase oral acceptance of foods.

He was fed via nasogastric tube from birth to 3 months of age. At 3 months a gastrostomy tube was placed, and he has received all his nutrition via a gastrostomy tube from 3 months until the present. SH has had multiple formula changes and is currently taking Propeptide via the tube. SH continues to have vomiting and soft signs of reflux, including gagging, wet-burping, and frequent upper respiratory congestion. SH currently takes 10 mg of Prilosec twice daily. Unfortunately SH is prone to severe colds and ear infections throughout the cold season. The congestion caused by these infections has caused SH to gag and refuse food offered on a spoon in the past. Allergy consult has indicated that SH may have seasonal allergies, and RAST testing indicated mild elevation for milk.

Observation and Evaluation: At the time of referral, SH did not eat or drink anything by mouth but would lick and taste certain foods. SH appeared healthy and mobile. Physical Therapy evaluation indicated trunk and extremity ROM within normal limits. Areas of weakness included limited thoracic rotation, weak abdominal obliques during transitions, and kyphotic posture with elevated protracted shoulders and pelvic tilt. SH seeks constant movement and vestibular input, creating decreased trunk and head stability. His oral structures and dentition are intact. Cranial nerves are within normal limits. Tongue tip elevation and lateralization are weak. SH's response to medial tongue placement of anything was defensive, but he tolerated placement of food on his lips for licking and tasting. He is nonverbal but communicates by finger spelling and with the use of a small electronic typewriter.

Impressions: Although SH was on Prilosec and a predigested formula, there seemed to be more unresolved GI issues. Prior discomfort during attempts at feeding SH has caused him to believe that eating is painful, triggering a learned pattern of food refusal. This is compounded by a rigid learning style, characteristic of autism. His physical issues also play a part in the mechanics of eating. SH was clearly a candidate for an intensive day-treatment program; however, his parents were not interested in pursuing this type of program.

First Steps:

- Refer to GI for further evaluation of reflux and food allergies, possible endoscopy.
- Initiate behavioral feeding protocol to gain SH's acceptance of water on a spoon.
- Continue to encourage SH's parents to reconsider an intensive program.

SH responded well to the behavioral protocol. After 3 months of 2 half-hour sessions weekly, SH was accepting water and small amounts of pureed baby fruit on the spoon; however, he was still very defensive of the spoon and only tolerated it in the anterior portion of his mouth which made his bites very tiny. Endoscopy has demonstrated atypical lesions showing eosinophilic infiltrates in several areas of the esophagus. SH underwent 6 weeks of prednisone therapy to determine whether the lesions were allergic in nature and would respond to anti-inflammatory treatment; a follow-up endoscopy after cessation of steroid therapy was normal. During the six-week period a dramatic increase in SH's desire to eat and try new foods was noted; however, it also resulted in difficult behaviors. After the steroids were discontinued, SH's behavior normalized and his interest in trying new foods was less pronounced. At this point in treatment, unless the flavor of the food of-

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ferred was extremely motivating (i.e. chocolate), SH would guard his medial tongue, taking very small bites. He could drink water from an open cup, but he lost liquid anteriorly due to poor lip closure.

SH had progressed from not eating at all to tolerating small amounts of food orally in the single-discipline model (i.e. speech therapy only); however, it was clear that SH would progress more quickly in an environment in which his feeding issues and medical issues could be addressed simultaneously by a team of professionals with a common goal, and given the continuous positive practice that a rigorous all-day treatment program would provide. Now over a year after feeding therapy had begun, SH's parents were ready to take the risk and go with him to the Center for Feeding and Swallowing Disorders at St. Joseph's Childrens Hospital in Patterson, NJ.

Day Treatment Program Summary: Upon admission a number of goals were set including:

- Medical management of GER
- Decrease tube feedings
- Increase amount of food and liquid consumed
- Increase texture and variety of food consumed
- Decrease inappropriate mealtime behaviors
- Train caregivers in feeding protocol
- Increase thoracic rotation
- Increase spinal extension
- Sit with neutral postural alignment

Upon discharge, SH's tube feedings had decreased significantly, by 30%. He was eating 3-5 3 oz meals of pureed table foods each day, with great variety of flavor and texture. Also he was drinking several ounces of soy milk with each meal. SH was opening his mouth wide for the spoon in response to the command "big open," with the reward of a favorite video played for a few seconds after each bite. He had also met all of the gross motor goals set for him.

Back Home: His parents were excited to see him eating real food! However, there were concerns about SH's transition back into the real world. His mother was particularly concerned about the use of video as a reward. How would this transfer into SH's kindergarten class? Also the Center recommended a very expensive feeding chair that was not possible for them to buy.

Home-based feeding therapy resumed when they returned, carrying over what had been done at the Center, including the video reward. Instead of the expensive chair, SH's parents were able to adapt a car seat. This gave SH better support than a regular chair and decreased extraneous trunk, head and neck movements. Together his therapist and parents tried to recreate SH's experience at the center as much as possible. The most important aspect of treatment at this point was consistent, continuous positive practice at home.

2 Months Later: Gradually we were able to increase the amount of pureed table foods from 3 oz to 5-6 oz per meal. SH's variety of pureed table foods was good: lasagne, chicken and dumplings, green beans, waffles, oatmeal, cereal bars, beets, beef stew, etc. SH rarely refused anything new. His mother enjoyed taking him to the ice cream parlor for a treat every so often. She still expressed concern about the video but continued using it as a reward.

6 Months Later: Amount of food consumed at mealtimes is 8-10 oz, depending on the texture. SH's repertoire of new foods continued to expand, and textures were introduced. Initially, cracker crumbs were placed on spoonfuls of puree to introduce more texture. As that was tolerated, hard textures were placed on SH's molar surfaces to assist with lateral tongue movements and correct biting and chewing. A straw cup was introduced to facilitate single bolus transport pattern, and increase tone in cheeks. This also increased the amount of soy-milk taken at each meal. Stringy textures like meats are still a challenge, but practice continues to be the key. Alternating bites of solid with sips of liquid assists with bolus formation and swallowing. Fatigue is a factor with some textures. SH sits on the exercise ball for 5 minutes before each meal as a cue for upright posture. Reading books has supplanted the video as the reward, which was a relief to his mother. A music stand has helped keep the books lifted up so posture was not compromised. At school, teachers have been trained in SH's eat-

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Spotlight on Intensive Feeding Programs: The University of Maryland Hospital for Children in collaboration with Mt. Washington Pe-

Location: Mt. Washington Pediatric Hospital; Baltimore, MD

Contact: Jessica Linden, Coordinator of the Feeding Day Treatment Program

Co-Director: Susan Dubroff, PT

Co-Director: Ramasamy Manikam, PhD

Phone: 410-578-5327, Fax:410-542-8890 Web: www.mwph.org

The University of Maryland Hospital for Children in collaboration with Mt. Washington Pediatric Hospital has developed a comprehensive and unique program to address problems related to the management of feeding dysfunction in children. The program is committed to high quality interdisciplinary care delivered in a cost-effective manner, and to training of other professionals in the care and management of feeding disorders.

The intent of this program is to offer patients and their families a structured, therapeutically appropriate environment that is customer focused. It encompasses all of their medical, psychosocial, and rehabilitative needs.

Pediatric feeding disorders are caused by a number of direct and indirect factors, including medical, oral-motor, sensory, appetite, and behavioral problems. Children with feeding disorders and their families need a comprehensive, interdisciplinary, integrated approach to assessment and intervention individually tailored to the unique needs of each child and his/her family. The program focuses on a coordinated and integrated team approach, including parents/caregivers as team members involved in decision-making, as well as employing a number of different treatment approaches, based on the needs of each child and family. As a part of the team process, parents/caregivers help prioritize and set goals and objectives for their child. We place great emphasis on the development of appropriate feeding treatment plans and their follow-through, as well

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ing protocol and are able to give him food for breakfast instead of a tube feeding, with the long-term goal of eliminating tube feeds at school altogether by the end of the year.

A Note About BM's: The dramatic change from mostly predigested formula to a wide variety of foods was traumatic on SH's bowels. Prior to consistent oral eating, SH's b.m.'s were all loose and he was never aware of making them. Constipation became a problem because food made his stools more formed. SH had to learn how to push, and develop an awareness of this bodily function, and this continues to be a challenge. This is managed with diet manipulation, mineral oil supplements and suppositories. We wanted to keep him pooping every day so as not to regress with eating. It has required some education of teaching staff to check with SH frequently and give him many opportunities throughout the day to sit on the potty.

The Day Treatment Program at the Center for Feeding and Swallowing Disorders at St. Joseph's gave SH the jump-start he needed to be a good eater. He has surpassed everyone's expectations. He is eating a wide variety of foods at each meal instead of tube feeds, and his night-time continuous feed has decreased to 250 cc's. When in doubt, and some unidiscipline work go to a program!

Spotlight on Intensive Feeding Programs: The University of Maryland Hospital for Children in collaboration with Mt. Washington

(Continued from page 8)

as ensuring smooth transitions between inpatient and outpatient programs. We are involved in program analysis and education, and outcomes and current research continually inform our efforts.

The primary goals of the Comprehensive Program for Feeding Disorders are:

- 1) to provide medical, rehabilitative and behavioral care to children with severe feeding dysfunction and their families;
- 2) to promote effective application of currently available treatments through the provision of training and consultation to other professionals in the community, and, 3) to provide alternative and least restrictive methods of service delivery to all patients.

Children whose severity of feeding dysfunction meets the criteria for admission are referred to the program for inpatient evaluation and treatment, day treatment, or outpatient services.

Primary service is provided by the core staff consisting of Pediatric Gastroenterologists, Developmental Pediatricians, Nurses, pediatric Psychologists, Occupational Therapists, Speech/Language Pathologists, Dietitians, Social Workers, and direct care staff trained in feeding program implementation. Additional resources are available to patients and include Physical Therapy, Clinical Psychology, Psychiatry, Audiology, Speech and Language, and other medical consultation services including but not limited to Pulmonology, Endocrinology, Radiology, and Orthopedics.

The "flagship" program is the day patient program, however some patients are seen for outpatient feeding therapy. These may be kids who are not yet ready for the intensive day program, kids whose insurance will not cover the program, or families who are unable to commit to a 6 week daily intensive program. If an inpatient requires feeding intervention they are ultimately evaluated by our feeding team and referred into the day program upon discharge.

The cost of the program will vary per child and most are covered by insurance companies. Typically, a family would not pay out of pocket. They may be responsible for a portion of the program or have copays/deductibles to meet. Average length of treatment in our day program is 6 weeks although some children will complete the program in 4 and others need 8.

Information from the most recent performance improvement report revealed that the patient mix included those with severe medical, behavioral, developmental, and social issues. Ninety-five percent had active medical problems including gastrointestinal, cardiac, and respiratory problems. All patients evidenced mild to severe behavioral problems. Forty-seven percent had significant oral-motor and sensory problems. Sixty-three percent were G-tube dependent for their nutrition. All patients were diagnosed with more than one diagnosis. A significant number (79%) had food refusal with sub-optimal calorie intake, 58% selective by type, and 43% selective by texture.

Extensive data is kept on each child's progress. The team meets weekly to go over short term and long term goals that have been met, address weight gain/loss, evaluate the options of cutting tube feedings, etc. Each child is assigned a primary therapist, which can be a speech pathologist, OT, or behavioral psychologist who is responsible for tracking each child's progress daily.

According to their classification system, 47% of the patients' feeding problems were primarily medical, 42% had significant oral-motor and sensory-based feeding problems, and 11% had predominantly behavioral

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Special for Feeding Therapists and Professionals!

Questions, comments, submissions, and suggestions are all welcome. Please be vocal, the hope is that this forum will be educational and will help to connect us as professionals working together.



On the Research Front:

D. Field, M Garland, and K Williams. Correlates of specific childhood feeding problems. *Journal of Pediatric Child Health* (2003) 39, 299-304.

The authors of this study looked at 349 children (ages 1 month- 12 years) who were referred to an interdisciplinary feeding clinic for evaluation of feeding problems. Their goal was to look at predisposing factors and to determine whether certain factors were more often associated with certain feeding problems. Feeding problems were classified into 5 groups: food refusal, selectivity by texture, selectivity by type, oral motor delays, and dysphagia. The authors found that certain feeding problems were more often associated with some conditions than others. The authors feel that many feeding problems are the result of learned aversions and that children with more severe medical and developmental conditions will have more severe feeding problems because of their exposure to aversive feeding experiences. They also mentioned the number one factor associated with food refusal was gastroesophageal reflux. They stated that certain feeding problems can be prevented with the early identification and treatment of reflux, food allergies, and constipation.

Gillis, L. Use of an interactive game to increase food acceptance— a pilot study. *Child: Care, Health, & Development*, (2003) 29, 5, 373-375.

This study demonstrated in a small sample that an interactive food game can be an effective tool for increasing food variety in healthy children with chronic food refusal. The game used a variety of behavioral techniques in a non-threatening format for both parent and child. Children were followed for a year with good results.

This material is provided for informational and educational purposes only; it does not contain specific medical advice. If you have specific health questions or problems, consult a health care professional for personal medical advice.