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LEADING THE SCIENCE AND PRACTICE OF CLINICAL NUTRITION

American Society for Parenteral and Enteral Nutrition

Pediatric Section Newsletter

Letter from the Pediatric Section Chair

Greetings and Happy Spring!

What a pleasure it was to see many of you at CNW 2015 in gorgeous Long Beach, California. There were a variety of informative pediatric sessions that were all very well attended. We are a small but mighty group! Special thanks to Kathleen Gura, PharmD, BCNSP, FASHP, FPPAG who presented at the Pediatric Community Forum. Her lecture on laboratory assessment of children with IFALD was thought provoking and applicable to everactice. Also, thank everyday clinical practice. Also, thank you to Dr. Mehta, MD for providing an A.S.P.E.N. update on behalf of the Board of Directors and to Beth Lyman, RN, MSN, CNSC for her update of the NOVEL project.

Recently, the Section has been busy planning symposiums for CNW 2016. (Yes, it is time already to be thinking about next year!) Various topics have been submitted to the CNW Planning Committee that include, but are not limited to: blenderized tube feedings, homemade infant formulas, feeding aversions, ethical dilemmas in pediatric care, pediatric malnutrition and much more. Each year the Pediatric Section submits multiple symposium ideas to the Planning Committee, more than most sections. This hard work is the product of devoted members. I would like to thank the following individuals for submitting programs this year: Sandra Bouma, MS, RD, CSP, Jodi Wolff, MS, RDN, LD, CNSC, FAND, Kelly Green-Corkins, MS, RD, LDN, CNSC, Mark Corkins, MD, CNSC, FAAP, Timothy Sentongo, MD, ABPNS, Petrea Cober, PharmD, BCNSP and Beth Lyman, RN, MSN, CNSC.

In this edition of the newsletter you will find updates on current pediatric nutrition support literature, a summary of the Pediatric Community Forum at CNW, and a link to the quarterly survey. Please take a few minutes to complete the survey. Results will be shared in the summer edition of the newsletter.

Since its inception, the Section has been geared towards enhancing the clinical practice of pediatric nutrition support while always being mindful of what is in the best interest of the child. True to these tenants, the Section is undertaking a new project in partnership with the Tube Feeding Awareness Association. We are collaborating to develop a nutrition support weaning position paper. If you are interested in helping with this endeavor please contact me directly at ebobo@nemours.org.
Again, thank you to all who made CNW 2015 such a success. I look forward to another productive year together!

Sincerely,

Elizabeth Bobo, MS, RD, LD/N, CNSC

Pediatric Section Community Forum at CNW 15: A Summary

Highlights in this Issue:

- Results from the Blenderized Tube Feeding Topic
- Pediatric GI Research Updates
- Neonatal Research Updates
- Nutrition-Focused Physical Examination in Pediatric

The Pediatric Section Community Forum opened with Elizabeth Bobo, Chair of the Pediatric Section introducing herself, Kelly Green Corkins, Chair Elect and Celina Scala, Newsletter Editor, who was not able to attend CNW 15. Elizabeth also introduced our Board of Directors liaison, Nilesh Mehta, who briefly spoke to the group.

Other announcements included:
The second edition of the A.S.P.E.N. Pediatric Nutrition Support Core Curriculum is now available in both paperback and electronic versions. Many of the Pediatric Section members contributed to this publication as editors, authors and/or reviewers. All the chapters have been updated and there are new chapters. In addition, purchase of the book includes access to videos and podcasts.

The New Opportunities for Enteral tube Location (NOVEL) project is in its second phase. If you were not able to get your facility involved during phase one and would like to become part of this project, please contact Beth Lyman at blyman@cmh.edu.

The Pediatric Section Newsletter has included a survey. Please complete and return the surveys. These surveys help the leadership to focus on what the members would like. In addition, we need newsletter contributors. If you have an interest and expertise you would like to share, please contact Celina Scala at Celina_M_Scala@rush.edu.

Katheen M Gura, PharmD, BCNSP, FASHP, FPPAG, FASPEN, from Boston Children's Hospital, presented on Intestinal Failure-Associated Liver Disease (IFALD): Expanding the Assessment.

Results from the Blenderized Tube Feeding Topic of the Quarter Survey

Does you institution use blenderized tube feedings for pediatric patients?
Yes 41.8%
No 58.2%

If yes, how long have you been using them?

Less than a year		25.0%
1-3 years	37.5%	
4-7 years	25.0%	
Greater than 7 years		12.5%

In what population do you use blenderized tube feedings and why?
Most responses indicated blenderized tube feedings were used for patients with a G tube for long term enteral feeding and per parent's request. Most common populations were cerebral palsy, developmental delay, oncology, patients with excessive vomiting, or post Nissen Fundoplication.

Are there populations in which it is not appropriate to use blenderized tube feedings and why?
Generally the responses were very similar. Blenderized tube feeds were not recommended in patients with small bowel feeding tubes, small bore feeding tubes, those needing continuous feeds, immunocompromised patients, and those whose family doesn't seem able to handle the tube feeding preparation, where sanitation and food safety are concerns or where an appropriate blender such as a Vitamix or Blendtec is not available.

What is the appropriate composition of a blenderized tube feeding?
Responses were varied. Most mentioned that the tube feeding would meet the needs of the individual child based on the DRIs and MyPlate (www.choosemyplate.gov) food serving recommendations by age. Two responses gave specific macronutrients breakdown guidelines; one of "60-70% carbohydrate, 20% fat, and 15% protein", the other approximately "50%

Results from the Blenderized Tube Feeding Topic of the Quarter Survey (cont'd)

carbohydrates, 20-30% protein, and 20% fat". Many responses gave recommendations to make sure all food groups were included daily to meet both macro and micro nutrient needs. Another responses emphasized making sure the breakdown of complex carbohydrates, fat, and protein was appropriate per the age of the child as well as assessing for adequate fiber, Vit D, and "bone mineral levels".

How do you determine the appropriate tube feeding composition?

Used guidelines 56.0%
Created your own 72.0%

Some responses stated they created their own recipes based on the individual child. Those who did use guidelines cited the following sources:

-The Homemade Blended Formula Handbook by Marsha Dunn Klein and Suzanne Evans Morris, 2007
-Recommendations by Therese O'Flaherty
-A current study at Sick Kids Hospital called BLEND
-Various recipes from other hospitals or those previously published by AND, Support Line, and Today's Dietitian

Some respondents also use pre-packaged whole food tube feeding formulas.

How do you determine the appropriateness of a blenderized tube feeding?

Using a nutrient database 100%

What are some common barriers or issues encountered with using blenderized tube feeding?

Common answers were as follows: food sanitation and safety issues; the amount of time these formulas take to prepare; perfecting the viscosity of the formula; tube clogging; hang time limited to 2 hours; parents turning to unreliable sources of nutrition information such as TV, blogs, etc.; the amount of time it takes for dietitians to analyze the adequacy of this diet; buy in from parents, dietitians, and doctors are all needed to make these formulas successful; cost of the blender (though one comment mentions that Vitamix and Blendtec subsidize the cost for families of patients that are enterally fed); and difficulty or lack or resources to prepare these formulas in the hospital when a patient is admitted.

How often should a patient on blenderized tube feeding see a Dietitian?

Weekly	13%
Monthly	52.2%
Every 2 months	26.1%
Every 6 months	8.7%

What resources do you recommend to parents who wish to use blenderized tube feedings at home?

Commonly recommended resources include the following:

-Mealtime Notions website
-The Homemade Blended Formula Handbook by Marsha Dunn Klein and Suzanne Evans Morris, 2007
-Food exchange lists
-Complete Tubefeeding by Eric Aadhaar O'Gorman
-Facebook group for Blended Food for Tubies
-www.foodfortubies.org
-Seattle Children's Hospital tube feeding recipes
-Handouts created by clinicians for their own patients
-Products such as Compleat Pediatric, Compleat Reduced Calorie, Compleat, Liquid Hope, and Real Food Blends
-Oley Foundation
-A.S.P.E.N.
-UVA website
-CDC cooking hygiene

Results from the Blenderized Tube Feeding Topic of the Quarter Survey (cont'd)

If you have not used blenderized tube feedings before, are you interested in doing so?

Yes	50.0%
No	20.6%
Unsure	29.4%

What populations would you anticipate using them in?

Responses stated they would start to use blenderized tube feedings in long term G tube dependent patients, all patients over 1 year of age, patients with intolerance to standard commercial formulas, patients with food allergies, patients whose parents express interest in preparing blenderized tube feeding, CDH patients, short bowel syndrome patients, and patients whose families prefer "all natural" nutrition.

What, if any, are your perceived barriers to starting to use them?

Common responses were that barriers include how time intensive the formulas are for parents to prepare, time intensive for dietitians to write formulas and analyze adequacy, concern for contamination and food safety, cost of the blender and supplies, providing adequate nutrition of both macro and micro nutrients, feasibility to use with NG and J tubes, likelihood of tube clogging, and barriers of a hospital's kitchen to prepare these formulas for patients during admission. One respondent mentioned that during admissions their hospital sends up pureed meal trays and the families thin the food to an appropriate consistency to pass through the tube.

What information do you feel you need before you would feel comfortable using blenderized tube feedings?

Of those responders who would appreciate more information common requests were as follows:
-Example Protocols
-Example Recipes with nutrient analysis
-Literature supporting the use of blenderized tube feedings
-Information on food safety, sanitation, formula preparation, storage, and handling
-Information about insurance coverage
-Information on appropriate formula viscosity to avoid tube clogging

Thank you to everyone who completed this survey, it provided a wealth of information on blenderized tube feedings. Some members are already comfortable and experienced using these formulas while others are interested in more information on how to do so. The Pediatric Section's A.S.P.E.N. Connect page is a great place to start sharing this information! Resources and files can be uploaded to A.S.P.E.N. Connect via the library tab (watch the YouTube video link previously provided in the A.S.P.E.N. Connect section of this newsletter for information on how to upload files) and information can be posted to the group on the discussion board. This is the most efficient and quickest way to provide information and resources to our members. Resources can also be sent to newsletter editor Celina Scala at Celina_M_Scala@rush.edu for inclusion in the next newsletters.

New Hot Topic of the Quarter Survey: Pediatric Enteral Feeding Protocols

Please complete the new hot topic survey by Friday May 29th.
Survey- Pediatric Enteral Feeding Protocols

Pediatric GI Research Updates

Research Updates-Call for Volunteers!

If you are interested in providing research updates for any pediatric specialty area to be included in the quarterly newsletters please contact Celina Scala at Celina_M_Scala@rush.edu.

Epidemiology of Interruptions to Nutrition Support in Critically Ill Children in the Pediatric Intensive Care Unit

This prospective study observed feeding practices in a pediatric intensive care unit (PICU) over 41 days. In total, 100 patients were followed. Of these patients, 21% were malnourished at admission. Results showed that the mean time to initiation of feeds was 22.8 hours after admission. During their PICU course patients had a mean of 1.2 interruptions to nutrition with a mean of 11.6 hours without feeding due to interruptions. The most common causes of feeding interruptions were extubation and surgery. Both avoidable and unavoidable interruptions are addressed.

Epidemiology of Interruptions to Nutrition Support in Critically Ill Children in the Pediatric Intensive Care Unit
Keehn A, O'Brien C, Mazurak V, et al. Epidemiology of Interruptions to Nutrition Support in Critically Ill Children in the Pediatric Intensive Care Unit. *JPEN.* 2015;39(2):211-217.

Caring for Tube-Fed Children: A Review of Management, Tube Weaning, and Emotional Considerations

Enteral nutrition provides either complete nutrition or a supplement to oral intake for many children. This review reports on current literature regarding enteral feeding practices. Providing appropriate enteral nutrition is multifactorial and is best addressed by a multidisciplinary team. This review addresses topics such as blenderized tube feedings, multidisciplinary treatment, feeding schedules, weaning from tube feedings, parent-child interaction, sensory implications, pain, oral-motor implications, and caregiver effects. Conclusions from the available literature, as well as recommendations and thoughts for future research are discussed.

Caring for Tube-Fed Children: A Review of Management, Tube Weaning, and Emotional Considerations
Edwards S, Davis A, Bruce A, et al. Caring for Tube-Fed Children: A Review of Management, Tube Weaning, and Emotional Considerations. *JPEN.* 2015; published online March 19, 2015. doi:10.1177/0148607115577449.

NEW!! Neonatal Research Updates

Many thanks to Jackie Wessel, Med, RDN, CNSC, CSP, CLE for volunteering as the neonatal research update liaison. Jackie is a Surgical Neonatal Nutritionist at Cincinnati Children's Hospital in Ohio. She works predominately with intestinal rehabilitation and surgical infants and has been an active member of the pediatric section of A.S.P.E.N. for many years. For the first neonatal research section of our newsletter Jackie has provided a comprehensive update on neonatal nutrition and hopes to inspire great people to go into pediatrics!

Human milk banking and milk kinship: perspectives of religious officers in a Muslim country

This is a very helpful article because it explains the kinship that the use of donor milk conveys for Muslims. Wet nursing is an established practice in the Middle East. However the wet nurse is considered to be maternally related to the donor. Children of the donor mother as well as all other infants that use that milk are considered to be siblings to the donor baby and they are not allowed to marry.

This article described a survey that was about the establishment of donor milk bank. The conclusion from this survey indicated that a limited pool (3 donors) could be used, but the identities would need to be revealed. I think that this information is helpful when dealing with the use of donor milk for Muslim infants. Their parents may not have questions or be reluctant to use donor milk, but if they are, you can be sensitive to their concerns.

Ozdema R, Ak M, Ozer A, et al. Human milk banking and milk kinship: perspectives of religious officers in a Muslim country. *Journal of Perinatology*. 2015;35:137-141.

Target fortification of breast milk: How often should milk analysis be done?

This article is a follow-up to the prior paper, Targeted Fortification of Breastmilk with Fat, Protein, and Carbohydrate for Preterm Infants by Rochow, Fusch, Choi, and others published in the Journal of Pediatrics 2013, 163:1001-1007. In this article they describe their method of collecting and pooling milk, analyzing the milk using a near infrared milk analyzer, and developing a prescription by the dietitian. This prescription counts the nutrients given by a standard fortifier, then calculates the macronutrients that are needed from their standard standard nutrient profile and prescribes a targeted, very specific fortification that may include protein, fat, and/or carbohydrate.

Their standard profile is based on ESPGHAN guidelines and would deliver at 150 ml/kg: 4.5 gm/kg protein, 12.8 gm/kg of carbohydrate, and 6.5 gm/kg of fat.
This study looked at how often the analysis needs to be done. They examined frequencies fro once a week to daily. Measurements twice a week led to macronutrient levels within a range of $\pm$ 5% of their targeted needs. This change decreases the additional workload time that this method involves.

Rochow N, Fusch G, Zapanta B, et al. Target fortification of breast milk: How often should milk analysis be done? *Nutrient*.2015; 7:2297-2310.

Influences of breast milk composition on gastric emptying in preterm infants

This is an Australian study so the products that were used may not be familiar to most of the US audience. However their conclusions are notable: The difference in fortifiers according to protein components changed gastric emptying. Feedings with higher casein content emptied faster during feedings than other similar fortified feedings. The slower to empty fortifier had extensively hydrolyzed protein. Feed energy concentrations in this study did not influence gastric emptying. Larger 3 hour feedings emptied faster than smaller volume 2 hour feeds.

Increased postnatal age and increasing ml/kg were associated with faster emptying during feeding. They also showed by ultrasound, that the infants' stomachs were rarely empty, with a residual curd often present.

Perrella SL, Hepworth AR, Simmer KN, et al. Influences of breast milk composition on gastric emptying in preterm infants. *JPGN*. 2015;60:264-271.

Association of metabolic acidosis with bovine based human milk fortifiers

Infants who were using the acidified liquid human milk fortifier were more likely to develop metabolic acidosis than those who received powdered HMF. No difference in growth was seen. 100 infants either < 1500 gm or < 32 weeks were enrolled. Incidence of metabolic acidosis 54% vs 10% mean p <.001.

Cibulskis CC, Armbrecht ES. Association of metabolic acidosis with bovine based human milk fortifiers. *J Perinatology*. 2015;35:115-119.

BMI curves for preterm infants

Gender specific validated BMI curves have been created for premature infants to add to the existing measures of growth for a more complete assessment.

Olsen IE, Lawson L. Ferguson AN et al. BMI curves for preterm infants. *Pediatrics*. 2015;135:e572-e581

Bacteriological, biochemical, and immunological properties of colostrum and mature milk from mothers of extremely preterm infants

There were significant differences noted in the colostrum and milk from the mothers of these babies as compared to term infants. The recommendation is that whenever possible, ELBW infants receive milk from their own mother or donors matching as much as possible, the gestational age of the recipient.

Moles L, Manzano S, Fernandez L, et al. Bacteriological, biochemical, and immunological properties of colostrum and mature milk from mothers of extremely preterm infants. *JPGN.*2015; 60: 120-126.

Consensus Statement:

Arsenic in Rice: A Cause for Concern
Their conclusions and recommendations are listed. Arsenic is harmful and we should reduce exposure to infants. [Editorial note: This was included for NICUs that use rice cereal in feedings.]
Hojsak I, Braegger C, Bronsky J, et al. Arsenic in Rice: A Cause for Concern. *JPGN.* 2015;60:142–145.

Review Articles:
Martin CR. Lipids and fatty acids in the preterm infant Part 1 and Part 2. *NeoReviews*. 2015;16: 160-168; 169-178.

Valentine CJ, Dumm M. Pasteurized donor human milk use in the Neonatal Intensive Care Unit. *NeoReviews*. 2015;16:1152-159.

Hallman M. Inositol during perinatal transition. *NeoReviews*. 2015;16:84-93.

Hougteling PD, Walker WA. Why is initial bacterial colonization of the intestine important to infants' and childrens'

General Pediatric Research Updates

Indirect Calorimetry Reveals That Better Monitoring of Nutrition Therapy in Pediatric Intensive

This prospective, observational study completed indirect calorimetry on 30 pediatric intensive care unit (PICU) patients between ages 3 months to 14 years. Patients that met criteria for indirect calorimetry had measurements completed for up to 5 consecutive days. The patient's actual intake was compared to their energy requirement which the authors defined as 110% of measured energy expenditure (MEE) as determined by indirect calorimetry. Of the 104 total measurements completed, their results showed underfeeding occurred 21.2%, adequate nutrition was provided 18.3% and overfeeding occurred 60.5% of days. The authors suggest that the high occurrence of overfeeding indicates the need for more frequent use of indirect calorimetry.

Indirect Calorimetry Reveals That Better Monitoring of Nutrition Therapy in Pediatric Intensive Care is Needed

Dokken M, Rustoen T, Stubhaug A. Indirect Calorimetry Reveals That Better Monitoring of Nutrition Therapy in Pediatric Intensive Care is Needed. *JPEN.* 2015;39(3):344-352.

Nutrition-Focused Physical Examination in Pediatric Patients

Nutrition-focused physical examination (NFPE) is an important part of a complete nutrition assessment in both pediatric and adult patients. Pediatric populations may become malnourished more quickly than adults due to lower muscle mass and body fat as well as higher resting energy requirements per kilogram of body weight. Therefore, NFPE is particularly crucial in accurate nutrition assessment. There is a lack of available training for completing NFPE in pediatric patients which may contribute to NFPE not being routinely completed. This article details the steps for completing NFPE in pediatric patients.

Nutrition-Focused Physical Examination in Pediatric Patients

Green Corkins K. Nutrition-Focused Physical Examination in Pediatric Patients. *NCP.* 2015;30(2):203-209.

Feed Intolerance by Traci Nagy from the Feeding Tube Awareness Foundation*

At the Feeding Tube Awareness Foundation, we hear from thousands of parents who are new to navigating tube feeding with their children. One of the early and more persistent issues that parents face is feed intolerance. So often when you start tube feeding a child, you aren't fully sure what is going on medically. Many children are labeled "failure to thrive" and are not eating or drinking enough when they first start tube feeding. They are often put on a feeding regimen that is a dramatic increase in volume and calories over what they were taking in orally.

The initial feeding regimen is a starting point, but most parents take it as written in stone. They usually aren't made aware of the fact that it can take some time and adjustment to work out what is best for the child.

When a child doesn't tolerate the feed schedule, parents can panic. I did. My son was two months old and we were instructed to bottle feed for 30 minutes, tube feed the rest over 30 minutes, and repeat eight times a day. Our total of 24 ounces over 24 hours was eight ounces higher than my son had ever taken in orally on his own. I was covered in vomit. We slowed the feeds down to where they were taking 60 – 90 minutes to infuse. I didn't sleep. I was exhausted and emotionally drained. I remember standing in my kitchen just crying and thinking why wasn't this working? In a nut shell, my son had pretty significant gastroparesis, but we didn't know that until many months later. Subsequently, we moved to continuous gastric feeding 24 hours a day and then to gastro-jejunal feeds a few months later.

Over the years, we made dozens of changes, and I tracked each one to see how it improved his tolerance of feeds (or not.) My primary goal for several years was minimizing vomit.

Feed intolerance really does matter. The perception that many parents have is that no one cares if their child is vomiting, or retching, as long as the child is gaining weight. However, recurrent retching and vomiting takes a significant toll on both the child and the parents. It impacts oral aversions, oral eating, and quality of life for both the child and the rest of the family.

What would help parents navigate feed tolerance?

First, they need to **understand what feed intolerance looks like**. We have heard the full range from parents who accept numerous vomiting episodes a day, because they think that is what is typical of children who are tube fed, to those who panic over a once a week vomit or retching episode. You can help set the expectations, so that parents know what is in the range of "typical" and what is abnormal and should be addressed.

Let parents know that changes to the feeding regimen are common and that there are many things that can be changed or adjusted to make feeds more comfortable for their child. Few parents understand the myriad of variables that go into feed tolerance; they often just blame the formula and think the child can't tolerate it.

What can help with feed intolerance?

Venting. We hear from so many parents who were never taught to vent gastric (G) and gastrojejunal (GJ) tubes. Infants often need to be vented frequently, as do children who have had fundoplication surgery or have motility issues. Older children may not need as much venting, but it is always best for parents to try venting to see if it is needed or not. Continuous venting using a Farrell Valve bag is a great option for kids who need more continuous venting, particularly overnight while feeding. And, yes, the gastric (G) port on gastrojejunal tubes often does need venting, particularly right after transitioning to jejunal feeds.

Modifying the feed schedule. Is the parent bolus feeding too quickly? Could using a pump make it easier for a parent to deliver a feed at a consistent rate or more slowly over a longer period of time? Would a child do better with a gravity feed over a syringe bolus? Does the child need to be on more continuous feeds either overnight, or both day and night?

Parents fear continuous feeds for two main reasons. They are afraid of their child tangling or choking themselves with the tubing overnight, or that the continuous feed will impact their child's ability to be mobile during the day. You can assure them that tens of thousands of children, including those who that are active, have managed well with continuous feeds. Also, when setting a feed schedule, please keep in mind the ability of the parent(s) to execute it over time. A round the clock bolus schedule might be fine with an infant, but it isn't sustainable over the long-term.

Evaluate the total volume/calories fed. Is it just too much for the child given their medical condition or activity level? For example, kids who have very low muscle tone or are less active may not need as many calories as a child who is more active and mobile. Also, those who are on jejunal feeds may gain very quickly since it is such an efficient way to take in calories, and the child may no longer be vomiting their feeds. Or is the parent afraid of the child being failure to thrive and trying to add extra calories?

Caloric concentration. There is a tendency to increase caloric concentration for children who have issues with volume or motility issues. However, these high calorie formulas can be really hard to tolerate. I always think of it in terms of the foods we eat and how caloric they are. There are few foods that are 45 calories per ounce, and we just don't eat them all day long every day. Moreover, calorie rich formulas have less free water so additional water has to be incorporated into the feed schedule or there can be issues with both constipation and dehydration. Also, consider the jump in calories when changing formulas. The move from 24 to 27 calories may be tolerated well, but the move from 20 to 30, or 30 to 45 may be more difficult. It is important to consider that every child may not be able to tolerate 1.0 and 1.5 formulas, however, you can teach parents formula recipes that will bring the caloric concentration to an appropriate level for their child.

Constipation. So many children who are tube fed have issues with constipation, or bowels just not emptying as they should. Make sure parents understand free water and their child's hydration needs. Addressing the constipation or slower moving bowels can really improve their feed tolerance.

Type of formula or food. Is it whole protein, peptide, amino-acid? Is it real food, or could it be? Is added fiber appropriate or not?

We find that parents do not understand the differences between whole protein formulas and ones that are partially or fully broken down. Nor do they understand how that can impact how a child tolerates their feeds.

Research has shown that a blended diet improves retching in children with fundoplication[1], but experience has shown a broader range of children who experience less vomiting as the amount of real foods is increased in their diet. We hear consistent feedback from those who use blended diets that bowel function is normalized, which in turn, can improve motility.

Type of feeding tube. Does the child need to progress from nasogastric to nasojejunal or from gastric to gastrojejunal feedings? If the child isn't tolerating continuous gastric feeds with an appropriate diet, then they will likely need to move to continuous jejunal feeding. However, encourage parents using bolus gastric feeds to try continuous gastric feeds before moving to jejunal feeds, as all jejunal feeds must be given continuously. Moreover, by switching from bolus to continuous gastric feeds some children may be able to avoid the more invasive procedure needed to place nasojejunal and more frequently, gastrojejunal feeding tubes.

Identifying the underlying medical conditions. Has the child been tested for food allergies, eosinophilic disorders, motility issues, structural issues, etc.? Keep lower incidence conditions like visceral hyperalgesia and cyclic vomiting syndrome in the back of your mind. And, if a child has low muscle tone, they may have issues with motility, too.

Last but not least…

Modifying feeds when children are sick or have experienced trauma, such as surgery. Parents would automatically change the diet of an oral eating child when there is illness, but they do not think of it with a "prescribed diet." Let parents know that when kids are ill, they will likely need to adjust feeds to focus more on hydration, than calories. Feeds may need to slow down. Also, that it can take a week or so (depending on the severity of the illness) to get back to the normal feed schedule. It can be tough for parents of children who are labeled "failure to thrive," but children will recover from the illness more easily if they are tolerating feeds and remaining hydrated.

Moreover, children who have had surgery may not tolerate the same feeding regimen they were on prior to the surgery. For example, a child who tolerated a particular feeding regimen may not tolerate the same feeding regimen after having the percutaneous endoscopic gastrostomy (PEG) surgery for a week or more, depending on the child's medical conditions.

It is really important to emphasize to parents that they only change one thing at a time. You can't determine what is and isn't working if you change more than one variable. It can be a lengthy process, but parents will give you more leeway, and be more patient with the process, if they feel you are working with them to achieve a better outcome for their child.

Sample Feed Tolerance Tracker:

Feeding Regimen:

Formula: _____ Calories/oz: _____

Total Volume:_____ Total Calories: _____

Bolus Feed:

Feed Amount: _____ Times Fed:_____

Feed duration: _____ Fed by: Pump Gravity Syringe

Continuous Feed:

Feed Schedule: _____

Pump Rate/hour: _____ Dose:_____

Oral Eating:

Amount of food: _____ Total Calories: _____

Amount of liquids_____ Total Calories: _____

Use the table to log all events. For vomits and retching, note correspondence to feeds, and note if they are tube feeds or oral feeds.

Modify to what makes the most sense for the child.	Vomit	Retching/Gagging	Bowel Movements (note consistency)	Other, not related to illness: Hiccups, coughing, sneezing, hard swallowing
Day 1: Morning Afternoon Evening Overnight				
Day 2: 9 am feed noon feed 3pm feed 7pm feed Overnight feed				
Day 3: Midnight – 6am 6am – noon Noon – 6pm 6pm – midnight				

Footnotes:

[1] Pureed by gastrostomy tube diet improves gagging and retching in children with fundoplication. *Journal of Parenteral and Enteral Nutrition,* May 2011 35(3):375-9. doi: 10.1177/0148607110377797. Pentiuk S., O'Flaherty T, Santoro K, Willging P, Kaul A.

**Traci Nagy is the Founder of Feeding Tube Awareness Foundation, a 501(c)(3) non-profit organization, dedicated to pediatric enteral feeding. The organization's Facebook page is the largest online support group for tube feeding in the world. Traci is the 2013 recipient of the Lyn Howard Nutrition Support Consumer Advocacy Award from the American Society of Parenteral and Enteral Nutrition.*

The views expressed in this post are those of the author, and do not necessarily reflect the views of A.S.P.E.N.

New Opportunities for Enteral tube Location (NOVEL) project Update from Beth Lyman, RN, MSN, CNSC

1. Please see the attached flyer and forward it to the home care companies you work with.
2. A survey will be going out to every NICU in the US in May so watch for an email from A.S.P.E.N.
3. In the past 3 months the NOVEL project has heard from 3 inventors, all with new ideas for NG tube verification technology. Exciting and promising possibilities!

NOVEL Project Flyer

NOVEL Project Newsletter

Hopefully by now you have had a chance to check out A.S.P.E.N. Connect and get logged in! After setting up your own profile the next step is starting to add contacts and build your connections. A.S.P.E.N. Connect is a valuable tool for networking with other nutrition clinicians around the world. So log on and start making contacts!

Once logged in on the A.S.P.E.N. website, in the top right hand corner of the webpage you will see "Welcome,(your name)". Upon clicking on your own name you will be taken to your "My A.S.P.E.N." webpage. On the right side of the page, click on the link for "A.S.P.E.N. Connect". On your A.S.P.E.N. Connect page you will be able to see contact requests still awaiting your approval above your profile picture. If someone has sent you a contact request you will need to accept it before you are officially contacts. Lower on the page on the left hand side you can see links indicating how many contacts you currently have and to manage your contacts.

If you would like to search for an A.S.P.E.N. member in order to add them as a contact, look at the maroon bar at the top of the page and click on the "Directory" link. From the directory you can search for members using various search criteria. Once you have found the member you are looking for click the "Add as Contact" button and a request will be sent to that person. Once they accept your contact request you are now contacts. A.S.P.E.N. has created a series of helpful YouTube videos on navigating A.S.P.E.N. Connect. Check out the quick 3 min video below on adding contacts and uploading files.

A.S.P.E.N. Connect- Adding Contacts and Uploading Files Video

A.S.P.E.N. Mentoring Program

Are you interested in sharing your experience and expertise with another A.S.P.E.N. member? Would you like to learn from a fellow A.S.P.E.N. clinician? If so A.S.P.E.N.'s new mentoring program is right for you! Set up a profile as either a mentor or mentee at the link below to be paired with another A.S.P.E.N. clinician. Don't miss this great opportunity to network and grow both personally and professionally.
A.S.P.E.N. Mentoring Program

Member Updates and Spotlight

We want to hear from you! The A.S.P.E.N. Pediatric Section group is proud of the many accomplishments of our members and we'd like to highlight what you're doing. If you have any feedback or ideas, noteworthy awards, presentations, published research, or projects that you'd like to share with our members please let us know by contacting the section group newsletter editor Celina Scala at Celina_M_Scala@rush.edu.