



Pediatric Feeding and Dysphagia

Dear Fellow Feeders;

Welcome to the first issue of our 2nd season. As I've been putting this year's writers and topics together, I've been grateful for all the support and encouragement I've had from my colleagues in this exciting field. It's an area that often involves a complex interaction of variables. What I especially enjoy is the problem solving aspect which demands an interdisciplinary approach. We have to put on our sleuthing hats, join forces with our colleagues, and work together to

help our kids reach their potential!

Each year, I teach the pediatric section of the dysphagia course to our graduate students at UNC, Chapel-Hill. I'm frequently asked about conferences and what do I attend? Continuing our education through conferences and reading is important. However, I especially like to talk with students about the value of having mentors. Paying an expert to spend a few days shadowing them can be invaluable.

I would like to extend a personal

The Not-So-Scientific Art of Estimating Calorie Needs

By Nancy T. Gray, MS, RD, LDN

"Children grow when they are fed enough calories."

How many calories are enough? No one knows – for sure, that is. There are plenty of recipes for figuring calorie needs and most provide a good estimate, but estimate is all they do. All have to be adjusted up or down depending on how the child grows. All are dependent on information which may or may not be accurate, such as weights and lengths, activity level, health status, current intake, gestational age, etc.

That said, estimations of calorie or, more accurately, energy needs are necessary to begin the process of helping children grow. What follows are some basic guidelines for creating a healthy recipe for growth. As with any recipe, the quality of the ingredients and the experience of the cook will produce a better outcome.

1. Know the basic concepts:

a. Calories are actually kilocalories. When a package label says that an Oreo cookie is 50 calories, it actually means that it is 50,000 calories or 50 kilocalories (kcal.).

b. Energy needs for children are stated in terms of weight. The recommended intake for two year old children is 102 kilocalories per kilogram per day (kcal/kg/day). This is because big two year olds need more energy than small two year olds. However, proportionally, all two year olds have similar needs which are different from the needs of children of other ages.

c. Energy needs are highly individual. Factors such as activity, body composition and rate of growth affect a typically developing child's energy needs. Add spasticity, athetosis, hypo- or hypertonia, heart or lung complications, etc., and the difficulty esti-

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Special Points of Interest:

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

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The Not-So-Scientific Art of Estimating Calorie Needs.

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imating the energy needs of children with special needs becomes apparent.

2. *Know the child:* The more information known about a child, the more accurate an initial estimate of energy needs will be, and the better they will grow. Age, current length or height, current weight, median (50th percentile) weight for height, growth trend, current dietary intake and medical diagnoses are factors that are very important for a good estimate.

3. *Choose your approach:*

a. The Calculating Approach.

This approach gives the illusion of being very accurate (which we dietitians love). To use it, a good reference is needed that has charts of basal metabolic rate, activity needs, stress needs and disease needs. (See end of article for suggested references.)

Using the child's information, energy needs are figured by starting with a calculation of basal energy expenditure and making adjustments for activity, etc. Different references recommend different calculations. For example, a 6 month old baby born at 34 weeks gestation, currently weighing 5.86 kg. and measuring 61.7 cm., would need about 79 kcal/kg/day using one of these formulas and 89 kcal/kg/day using another formula. As a rule, the Calculating Approach works best for a hospitalized, tube fed and/or immobilized child whose dietary intake and activity level are better known and more consistent than that of a child living at home.

b. The Fudge and Nudge Approach.

The Fudge and Nudge Approach starts with the Recommended Dietary Allowance (RDA) for the age at which the child's height falls on the 50th percentile (height age). This is multiplied by the child's median weight for height (in kg) and divided by the child's actual weight (in kg), producing a fudged estimate of his or her energy needs. It is then nudged up or down based on the child's situation.

Although less precise, this approach is easy and works as well as the Calculating Approach for children in the community. The 6 month old baby mentioned above would have an estimated energy need of 118 kcal/kg/day using the Fudge and Nudge approach. If she were showing slow weight gain and her current intake was below 118 kcal/kg/day, 118-125 kcal/kg/day would be a goal calorie intake. If her current intake was near 118 kcal/kg/day, the goal calorie intake would be nudged upward to 130 kcal/kg/day or more, depending on the severity of her poor growth. Additional factors, such as hypotonia (lower energy needs), chronic lung disease (higher energy needs), etc., affect the amount of the nudge.

c. The Ballpark Approach.

The Ballpark Approach is a very rough guess of a child's needs. It uses the RDA for a child's age (adjusted for prematurity if needed) multiplied by the child's current weight in kilograms. It is helpful as a temporary recommendation until a more specific approach can be used or to quickly reassure parents that a child is getting close to what he or she needs.

4. *Monitor and Adjust:* Regardless of the chosen approach, adjustments will be needed to produce the desired growth. Insufficient growth will need more calories, growth that is too rapid will need fewer calories. *Important:* Too many calories or too few calories can be dangerous. Calorie intakes greater than 150 kcal/kg/day or less than two thirds of the RDA for a child's height age, should be avoided unless a physician or dietitian is actively involved in monitoring the child's progress.

5. *Remember the Big Picture:* Calories do not work alone. Protein, vitamins, minerals, and fluids are all important ingredients in the recipe for growth. Also, even the best estimates of energy needs are only as good as the ability of caregivers to provide what's recommended. Finally, the nebulous ingredients of love and emotional support make the success of the recipe all the more challenging to achieve and rewarding to obtain. Two helpful references are - *Manual of Pediatric Nutrition*, (3rd Edition, B. C. Decker, 2000), by Kristy M. Hendricks, Christopher Duggan and W. Allan Walker, and *Handbook of Pediatric Nutrition*, (2nd Edition, Aspen Publishers, 1999), by Patricia Queen Samour, Kathy King Helm and Carol E. Lang.

Tip: Recommend a diet that is appropriate for a child's oral motor pattern.

Example: if a child is suckling, they are competent to handle liquids and purees.

-from Cathy Fox, MS, OT
Cfoxot@aol.com

Intensive Feeding Programs

The Center for Pediatric Feeding and Swallowing at St. Joseph's Children's Hospital

Address: 703 Main St.
Paterson, NJ 07503
Phone: (973) 754-4300
Fax: (973) 754 – 4330
www.sjhmc.org

Mission: Provide a collaborative medical and behavioral approach to complex pediatric feeding and swallowing problems.

Clinical Director: William J. Roche MS, CCC-SLP
Medical Director: Peggy Eicher, MD

Multidisciplinary Team:

- developmental pediatrics
- behavioral psychology
- physical, occupational and speech therapy
- nutritionist
- feeding therapists
- nurse practitioners
- gastroenterology
- otolaryngology
- pulmonary
- Genetics
- Radiology
- Endocrinology
- general pediatrics
- Cardiology
- Dentistry
- respiratory therapy
- family counseling
- financial coordinator

Structure of Program: 3-tiered diagnostic and treatment model

1. **Out-patient:** Assessment and management plans are devised for treatment at the center or for community therapists. Patient follow-up, parent and community therapist training is essential.

2. **Day-treatment:** Daily individual treatment plan is established, treatment is provided 5 days per week for an average of 3 – 8 weeks.

3. **In-patient care:** Designed for severely ill children who suffer from FTT, may need intensive medical treatment as well as behavioral intervention.

Admission Process: Includes sending a videotape of the patient moving, eating and/or being tube fed; filling out an intake form which contains feeding, medical and insurance information; and sending medical records. St. Joseph's receives an average of 33 referrals/month.

Currently, they can take an average of 4 – 5 kids at a time in the day treatment program.

* Children with autism will be eligible for the program as of July 19th when a specially trained psychologist from the Markus Institute joins their staff.

How long does it take to get in: For day treatment there is an average wait of 1 – 1 1/2 months. Wait for an evaluation is around a month. Insurance issues are usually what holds kids up.

Cost: Price of the day treatment program will vary depending on the child's needs but an average estimate would be \$560/day.

The Facility: The program is housed in a beautiful new building consisting of a secured unit with rooms for therapy and feeding sessions with connected observation rooms, and a play room for naps and down time. A kitchen is used to puree the food.

Feeding Times: Most of the kids will receive 4 feeding sessions per day. Food is provided to the parents to feed the kids at night and on the weekends.

Day-treatment: Parents can observe in the beginning but are not typically in the room so that the therapists can establish feeding protocols. Parents and caregivers are trained to follow feeding protocols in preparation for the transition home.

Housing: Currently, there are two options for families. They can stay in a nearby hotel (cheapest rate will be around \$79/night) or they can stay in the hospital's apartment for \$49/night.

Follow-up: Local patients return to the clinic monthly for tune ups. Long distance patients will follow-up with staff through phone calls and videos.

Success rate: Data is collected on all the patients. Categories studied include vomiting, constipation, dysphagia, suctioning, g-tube dependence, tube feeds, liquids via cup or bottle, puree, table food, mashed foods, chewing, and, a variety of foods.

- 94% improvement in one or more category in their 4 week stay.
- Kids averaging a variety of 2.5 foods entering the program left after 4 weeks on 8.2 types of food (124% improvement)
- 36% reduction in g-tube use
- 76% reduction in vomiting

Books: Preemies: The Essential Guide for Parents of Premature Babies

Book Review: Preemies: The Essential Guide for Parents of Premature Babies

Authors: Dana Wechsler Linden, Emma Trenti Paroli, Mia Wechsler Doron, MD
Publishers: Pocket Books, Simon & Schuster
Cost: \$24.95

Preemies was written specifically as a user friendly informative and up to date reference tool for parents of premature infants. The authors include Dr. Mia Wechsler Doron, neonatologist at UNC Hospitals, and two mothers of preemies, her sister, Dana Wechsler Linden, and Emma Trenti Paroli. The book was written in response to Dana having premature twins. Her sister Mia provided support for her but realized how much more information was needed in this area for parents.

Preemies is divided into the following sections; before birth, in the hospital, a life together, other considerations, and the appendices. Each section is organized to provide information, explanations for problems and situations the premature infant might face, followed by questions and answers. Explanations are given for medical, emotional, and technical subjects in lay terms.

Examples of questions found in the text include:

-Why would my baby need higher vent settings?

-Should I be worried that my baby isn't gaining weight like he should?

-They don't know if my son has pneumo-

nia. Shouldn't they be able to tell?

Informative sections are provided for many common problems facing preemies such as RDS (respiratory distress syndrome), NEC (necrotizing enterocolitis), PDA (patent ductus arteriosus), BPD (bronchopulmonary dysplasia), as well as many others.

Because preemies often have complicated feeding issues, information is provided on the journey from parental nutrition, to gavage feedings, to breast or bottle feedings. Caloric needs, delivery of nutrition, and associated complications are discussed.

The authors suggest that ideally, premature infants need to gain 15 – 30 grams per day, what they would have gained in the womb. Most preemies need to get about 120 calories for each 1,000 grams of their current body weight. Most preterm formulas contain 24 calories per ounce while term formulas and breast milk have 20 calories per ounce.

The appendices include conversion charts for weight (pounds to grams), temperature (Fahrenheit to Celsius), and growth charts as well as an extensive resource list.

Preemies also contains a nice chapter called "I was a preemie too" which lists famous people who were born premature and thrived. Did you know that Isaac Newton, Mark Twain, Winston Churchill, and Albert Einstein were preemies?

I found the book very well organized, easy to read and informative. Because it is geared toward parents, caregivers, and the non-medical reader, it would be an excellent resource to have for our families. Also, it would be appropriate for therapists who want to stay current on the typical course of preemies but want a break from heavy medical lingo. I enjoyed the book and highly recommend it!

On the Research Front...

Juburg, D.R., Alfano, K., Coughlin, R.J., Thompson, K.M. An Observational Study of Object Mouthing Behavior by Young Children. *Pediatrics*. 1999; 107 (1)135-142.

This article reports on the results of an observational study investigating mouthing behavior of objects for typically developing children up to 3 years old. Mouthing behavior in young children is poorly quantified but a normal part of early childhood. The study, which looked at 385 children, used a diary format for parents to fill out as they observed their children.

Results indicated mouthing behavior of children depends on age and the items mouthed. Pacifier use was the item most frequently mouthed in the 0–18 month old and 19-36 month ranges. As in other studies, mouthing duration decreased as age increased. Subsequently, mouthing activity is positively

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A Classification system for Feeding Disorders by Dr. Mary Christiaanse

Concerns regarding children's eating is a common complaint that parents bring to their medical care provider. The parents of 2 to 29 % of otherwise healthy children bring up feeding concerns to their pediatrician. The prevalence of feeding concerns in children with developmental or neurologic conditions approaches 50%. In response to these concerns, teams of professionals have joined together to specifically address pediatric feeding issues. It is a very complex content area that often demands input from medicine, nutrition, neuromotor specialists, psychologists and social workers. The purpose of this article is to present a classification system that has been proposed by Kedesky and Budd in their recent book Childhood Feeding Disorders (1998). I have found this system to be very helpful when approaching a child with feeding or growth concerns. Their system keeps the evaluation focused and comprehensive.

The foundation of their classification system lies in the division of feeding problems into first a description of the type of feeding problem and secondly, the etiologic constructs. The four descriptive categories orient professionals to the type of feeding problems they are addressing. The four categories are

- 1) Children who eat too little
- 2) Children who eat too much
- 3) Children who eat the wrong thing
- 4) Children with a feeding skill deficit.

Although these descriptors may sound simplistic, I think they offer more information than terms such as failure to thrive organic/ nonorganic can encompass. Children who eat too little include those children with mild to extreme food selectivity and/or with poor growth. Children who eat too much are the children with obesity. Children who eat the wrong things are children who eat non-food items (pica or rumination). Children with a feeding skill deficit are unable to get the food they need into them. Although some children may fall into more than one category, one would use the primary description in classifying a child. For example, a child with cerebral palsy may have a primary feeding skill deficit from his motor dysfunction that

then leads to him not eating enough. If he did not have a primary skill deficit, he would eat.

Kedesky and Budd's eight etiologic constructs then allows for a systematic assessment of all the factors that impact on feeding behavior after you have decided what descriptive category a child falls into. The eight constructs are diet, physical competence, appetite, illness, interaction/management, child constitution, caregiver competence and systematic etiologies such as poverty.

A *diet* analysis needs to be included in any assessment of feeding behavior. Questions to be answered include how many calories is the child consuming, from what food source are they consuming them, and are their micronutrient needs being met? Dietary deficiencies may be the only problem and needs to be addressed first.

Physical competence alludes to the child's ability to ingest food. Neuro-motor specialists with an understanding of oral-motor skills can address the questions of whether the child is a safe to eat, if they are positioned correctly, or if the food texture being presented is appropriate for the child's skill level.

Appetite is still poorly understood but certainly plays a part in a child's willingness to eat. Factors that we know affect appetite include the spacing of meals. Frequent small meals decreases one's appetite and large quantities of liquids will curb the desire to eat solids.

Illnesses can impact a child's ability to grow, enjoy meals, and feed safely. Any child with a feeding problem should have a thorough medical evaluation to look for medical factors affecting their feeding behavior. These issues may be as obvious as constipation or as complex as inborn errors of metabolism. Gastroesophageal reflux often plays a role in childhood feeding difficulties particularly in children who are neurologically impaired.

Professionals need to examine the feeding relationship and its components. These are factors pertaining to the *child*, the *caregiver*, and the *interaction*

itself. Questions to be answered include what is the child's temperament? Do they have sensory integration issues? Does the caregiver have an understanding of their child? Many feeding clinics have the ability to actually look at the feeding interaction in a sample meal either videotaped at home or carried out in the clinic setting. This allows for an investigation of the meal time situation- the cues being offered by both the child and the caregiver and the consequences of behavior.

Finally, the *resources* of the family need to be considered. These are not only financial resources but also social resources. Families under stress from domestic violence or environmental deprivation may not be able to successfully address feeding concerns.

Once we have a descriptive characterization of the child's major feeding problem and an understanding of the impact of the eight etiologic constructs on the child's eating behavior, a comprehensive treatment plan can be developed.

Childhood Feeding Disorders: Biobehavioral assessment and intervention by Jurgen H. Kedesdy and Karen S. Budd, Paul H. Brookes Publishing Co, Inc. Baltimore, MD, 1998.

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Case by Case....



Name: Josh
Diagnosis: Cerebral palsy

Age: 6 years
Referred: For severe drooling

Initial evaluation: Based on a child history, physical exam, and observation of movement and function, initial exam revealed the following:

- **Oral-motor:** normal range with labial movements but decreased strength, mildly low facial tone, open mouth posture (due to low tone and frequent sinus infections reinforcing mouth breathing), midline tongue protrusion but unable to lateralize tongue or produce tongue tip elevation, normal palatal elevation, extremely hypersensitive gag (Josh vomited with tongue exercises), severe drooling (Josh had tried Robinol without success), mild articulation errors, clear strong voice.
- **Eating/swallowing:** demonstrates mouth stuffing, poor bolus formation and control with food residue on lips, cheeks, and roof of mouth, uses rotary chew with lip closure, no signs of swallowing dysfunction .
- **GI issues:** daily emesis, retching, sensitive to smells, bad breath, hacking, coughing.
- **ENT:** recent tonsillectomy and adnoidectomy, frequent sinus infections.
- **Pulmonary:** no significant history.
- **Behavior:** picky eater, is teased at school and called “spit boy”, afraid of oral exercises because of sensation of needing to vomit, during eating demonstrates mouth stuffing.

Intervention:

1. **GI Intervention:** Josh was referred to pediatric GI who intervened with gastroesophageal reflux management, initially Zantac with brief improvement of symptoms and then Prilosec.

Result: cessation of emesis, retching, bad breath, and hacking, decreased drooling, less sensitivity in mouth and to smells.

2. **Oral-Motor:** Josh was followed weekly for 30-minute sessions. All exercises were recommended for daily practice at home.
 - a. tongue lateralization (using a mirror, pushing apple-jacks from one side of his mouth to the other with his tongue, lateral placement of puree foods).
 - b. improve tongue tip elevation (midline protrusion, pushing apple-jack placed on anterior tongue to alveolar ridge, placing tongue behind top teeth, licking lips).

Result: able to lateralize tongue, elicit tongue tip elevation on command, improved articulation, less drooling.

3. **Behavioral:** Frequent verbal reminders given to “close your mouth and swallow”, a sticker was used daily on Josh’s hand as a reminder to swallow (only worked for one day), routine established to place utensil down between bites, verbal cues given to take smaller bites and to use liquids between solids to assist with mouth clearance of residue.

Result: With frequent verbal cues, Josh is drooling less and able to maintain a dry shirt for most of the day, continues to need cues to take small bites and place utensil down.

Follow-up: Josh is receiving OT services for sensory issues and will continue to follow up with GI. Caregivers report that drooling increases in the evening, which may be related to the Prilosec wearing off. They are considering adding a 2nd dose in the evening. Josh will start articulation therapy in the fall.

Feeding Pumps: Are they all created equal?

No, feeding pumps are not created equally. Many of our patients have used a feeding pump at some point in the struggle with intake and weight gain. For some, it's a short-term solution until the child can adequately tolerate bolus feedings or consume enough intake orally. For others, the recommendation for a slower infusion of formula, whether its slow bolus feeds or continuous feeds is more long-term. This can be a difficult decision, especially for the active child.

As feeding therapists, we often make recommendations that change feeding schedules. Schedule changes may be manipulated toward bolus feedings to simulate a more "typical" hunger/emptying cycle or be slowed to ensure better tolerance in the stomach. If a child is showing any signs of intolerance to tube feedings such as gagging, retching, spit-ups, vomiting, increased drooling, rumination, arching, bloating, or oral hypersensitivity, intervention should be initiated to make the child more comfortable. This may be achieved through medical management of GI symptoms, manipulation of nutritional supplements or change to the delivery of the tube feedings.

The Decision to slow tube feedings and use a pump is a difficult one and often looked at as a step backward by caregivers but it may be the only way to transition the child to oral feeds. It is tedious to transition a child to oral intake if they show poor tolerance of tube feedings, which may affect oral sensitivity and acceptance.

How does a child get a feeding pump? The physician makes a request for a portable pump, a home health agency is contacted and they in turn contract with companies who will supply the pump. The majority of the time, the patient's family has little choice in type of pump. Feeding pumps are usually rented (insurance covers the rental) and bags are typically changed every 24 hours. A comparison of two commonly used pediatric feeding pumps revealed some interesting facts.

	<u>Enteralite/Zevox</u>	<u>Kangaroo PET/Sherwood</u>
Size	4.97"Hx4.47"Wx2.0"D	5.75"Hx3.81"Wx2.0D
Weight	1.30 lbs.	1.40 lbs.
Battery	24 hours @ 125 ml/hr Has compact wall charger 5 hours to recharge	14 hours @ 125 ml/hr needs charger base 6 hours to recharge
Operating Orientation	any position	upright only
Flow Rate Accuracy	1 – 600 ml/hr +/-5%	1 – 400 ml/hr +/- 10%
Dose	3000 ml	2000 ml
Interval Feed Time to Next Feed Indication	yes yes	yes no
Pediatric Use	yes, age<1 yr	yes, age<1 yr
Prime (how fast you can fill it)	fast prime@600ml/hr	no prime feature (gravity)
Options	360 degrees rotatable Convertible to a backpack	one position only backpack, upright only
Warranty	2 years	1 year

When comparing the two most commonly recommended pumps for pediatric use, the Zevox is clearly the better choice for our long-term mobile pump feeders. It's light, works in any position, and can easily be carried in a backpack by even small children. Lynne Farber, UNC Hospital's pediatric surgery nurse, agreed with this recommendation. The kangaroo bags are less expensive than the Zevox, so the Kangaroo pump is more commonly recommended. Ms. Farber recommends to families of long term pump

Feeding Pumps: Are they all created equal? (continued)

users to have their insurance company buy the pump. She will also assist families of appropriate patients in fighting for the Zevex pump by writing letters to advocate for a more mobile set up for the child. As feeding therapists, this is an area we can help our families to make appropriate decisions.

Example: Tommy is a 5-year-old patient with hearing impairment, autism, and severe food allergies. He is on continuous feedings via regular Kangaroo pump (not portable), which his school can not accommodate. He eats a small amount of food orally at school and is hooked up in the evening (connected to an IV pole, his insurance company will not cover a portable pump) for the bulk of his nutrition. He is not able to tolerate bolus feedings. He goes to bed connected and his parents must awaken each night to turn it off and unhook him. He also needs to go to the bathroom during the night because of the feedings. His parents are exhausted and he has behavior problems worsened by his lack of freedom during tube feedings. Through intervention, he was changed to the Zevex pump. He now puts his backpack on after school, runs and plays while being tube fed and then is turned off just after he goes to bed. It has made an enormous difference in the whole family's lifestyle.

Not all children should be changed to the Zevex pump. However, it can be extremely valuable to the ones who are mobile and need continuous feeds. It's important that feeding therapists understand the differences between feeding pumps and assist families with decision making and advocacy for their children. It can make an important difference in quality of life for these children and their families as well as assist in the success of oral feeding.

Q and A: What is the effect of large tonsils on feeding? For some older children eating regular diets as well as a few infants, it has seemed that very large tonsils have led them to stay with liquids and not tolerate solids.

There are several possibilities. Enlarged tonsils will decrease the pharyngeal space which may result in an obstruction. Because of the decreased space, some kids will resort to a primitive pattern (suckle) which is not effective with solids. Also a possibility, is that solids may get trapped in the tonsils causing choking or aspiration if food is inhaled during inspiration. In rare cases the large tonsils may prevent full epiglottic tilt increasing aspiration risk.

Question answered by Dr. Peggy Eicher, medical director, St. Joseph's Hospital, Pediatric Feeding and Swallowing Center.

General Information: tonsils and adenoids are relatively small at birth. After the age of 6 –8 weeks to 1 year, there is an accelerated growth that continues until 8 – 9 years of age. Atrophy of the tonsils and adenoids begins at about the time of puberty unless the child is exposed to an unusual number of infections, and it continues for the next 10-15 years. The location of these lymphoid masses in the pharynx at the juncture of the nasal and oral airways naturally exposes them constantly to airborne infections.

Cause of tonsillar hypertrophy is not completely understood. One possibility is that the tonsils play a role in production of antibodies or that growth hormones may monitor tonsil hypertrophy. It

Dysphagia Research Society

The Dysphagia Research Society is a group of professionals dedicated to the science of normal and disordered swallowing. Their mission is :

- To encourage interdisciplinary research
- To attract new investigators to the field
- To promote the dissemination of knowledge
- To provide a multidisciplinary forum for presentation of research
- To foster new methodologies and instrumentation in dysphagia research and its clinical applications

William J. Ravich, MD is the current president of the group. President elect is Jeri Logeman, Ph.D..

The Dysphagia Research Society has an annual meeting every October, to be held this year in New Mexico. It's the best conference to attend for the most up to date research on normal and disordered swallowing and interesting debate and discussions on one of our favorite subjects.

To find out more:

Web site: go to yahoo and type in Dysphagia Research Society , Phone: 713 – 965-0566

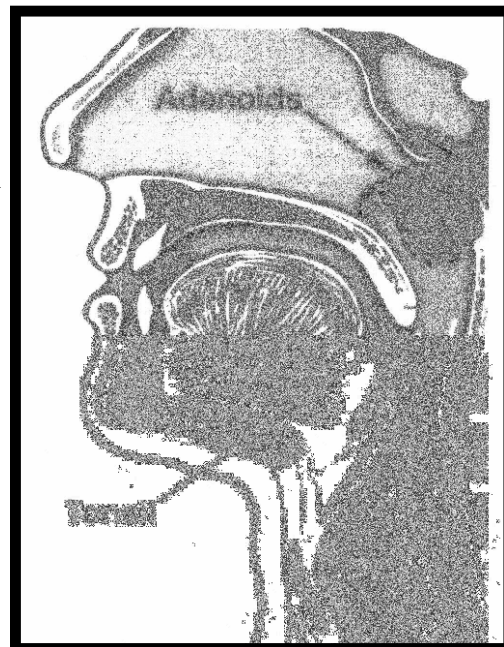
Q & A continued:

has also been noted that repeat infections result in enlarged tonsils. The adenoids are subject to the same types of acute and chronic infections as the tonsils. Also, allergy or gastroesophageal reflux may play a significant role. Tonsil hypertrophy varies greatly in growing children, and in some cases one tonsil may be larger than the other. However, kids with the largest tonsils often do not have a history of infection.

Hypertrophy can become life threatening in children in whom the tonsils become so large that they interfere with respiration. Large tonsils may also interfere with intake causing selective eating patterns or aspiration risk.

Information obtained from:

Dr. Drake, pediatric otolaryngologist, UNC Hospitals



Becker, Walter. Ear, Nose and Throat Diseases: a Pocket Reference. New York: Thieme Medical Publishers, 1994., pg. 39

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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

(Continued from page 4)

correlated with teething but negatively with increased mobility.

Duration of mouthing varied among children, with some not mouthing any objects and a very small number mouthing objects for greater than 2 hours per day. The study also revealed a wide variety of objects mouthed, including many non-toy objects. The authors mention that these non-toy items may put the child at serious health risk .

The authors discuss 2 previous studies which provide some information about children's mouthing behavior. Zartarian et al. (1998) videotaped 4 children to report on mouthing patterns and Groot et al. (1998) looked t 42 children in the Netherlands.

The study was conducted in phases. The first phase in February 1998 resulted in 30/150 families completing the diary for a 1 week observation time. The second phase in April 1998, 187 parents responded over a 3 week observational time frame.

The final phase focused on younger children (3 – 18 months) and involved a 2 month period of observation. 168 families responded.

The authors feel that future research will need to capture the high frequency but low duration of (in and out) of some mouthing behaviors. Also mentioned is the validity of the diary format as compared with videotaping subjects.

Zartarian VG, Ferguson AC, Leckie JO
Quantified mouthing activity data from a four-child pilot field study. *J Exp Analg Environ Epidemiol* 1998; 8:543-553

Groot ME, Lekkerkerk MC, Steenbekkers, LPA. *Mouthing Behavior of Young Children: An Observational Study*. Wageningen: Agricultural University, House hold and Consumer Studies;1998. ISBN 90-6754- 548-1.