A Pediatric Gastroenterologist's Evaluation of Failure to Thrive

By Alexandra P. Eidelwein, MD

The most common definition of Failure to Thrive (FTT) is weight below the third to the fifth percentile for age on more than one occasion or weight measurements that fall more than two major percentile lines using the standard growth charts for the National Center for Health and Statistics. Growth and nutritional status can be evaluated in six principal ways: anthropometry, clinical examination, biochemistry, body composition, dietary assessment, or functional tests. The differential diagnosis of FTT is comprehensive, and specifically in the developed world, involves not just organic disorders, but should include psychological conditions that could influence the evaluation and management of children with this condition, including child abuse and neglect.

During the evaluation of infants and children with FTT, the role of the primary care is to start collecting information including growth chart data, family history, and dietary history. At the initial visit with a pediatric gastroenterologist (GI), that data is reviewed and helps provide clues that lead to a possible cause of FTT. During the evaluation, initial attention is given to the growth parameters to attempt to differentiate patients with proportional and disproportional growth. Disproportional growth occurs when a child's weight is low but he/she has a normal head circumference and normal height, while proportional growth has all low values. This differentiation helps separate patients with other causes of FTT, including endocrinologic, genetic or familial from those caused by nutritional or gastrointestinal disorders.

In patients with more disproportional FTT, when weight is affected first, the initial evaluation includes a nutritional assessment to calculate caloric intake and evaluation of possible losses that lead to clues of an initial diagnosis. Common causes of FTT in infants include decreased caloric intake, secondary to poor sociology-economic factors at home; feeding errors; swallow dysfunction; gastroesophageal reflux; social problems; and malabsorption syndromes, including cystic fibrosis and milk protein enteropathy. Other causes of FTT include chromosome abnormalities and endocrinological, metabolic and genetic disorders. Finally, heart or lung problems and chronic infection can lead to FTT. In older infants and toddlers, food allergies and Celiac Disease should be considered, and in older children, inflammatory bowel disease and eating disorders should be added to the differential diagnosis.

The first visit with a pediatric GI doctor starts with a dietary evaluation, including caloric count, and recommendations are made to correct any poor caloric intake. This may include changes in formula or offering high calorie supplements. Hospital admission should be considered in cases of life threatening malnutrition. Laboratory evaluation, including nutritional data (albumin, pre-albumin), electrolytes, kidney and liver function, hemoglobin, WBC, will be assessed during the initial visit. Urinalysis and urine culture should also be performed. Specific gastrointestinal disorders can be evaluated by laboratory data, including: celiac serology, immunoglobulins, RAST for common food allergens. Stool samples to rule out malabsorption of fat and carbohydrates (elastase and qualitative fat, ph and reducing substances), inflammatory changes (calprotectin and lactoferrin), and occult blood should also be performed. Finally, a sweat chloride test is recommended.

Radiologic evaluation of FTT includes UGI /SBFT, gastric emptying scan, and modified barium swallow in individual cases. Upper endoscopy evaluation is recommended to rule out gastroesophageal reflux disease, eosinophilic esophagitis, allergic enteropathy, celiac disease, and lactase/sucrase deficiency. Colonoscopy should be considered to evaluate and rule- out allergic colitis and inflammatory bowel disease, especially in patients with chronic diarrhea. All of the data from these tests and procedures help the GI physician determine the cause of the FTT so a comprehensive resolution plan can be created to help the child.

Close follow-up with alternating visits between the GI physician and the dietitian is recommended. Adding psychological support helps to address any psychological stressors discovered during the process of diagnosis and treatment, especially when the course of evaluation is prolonged. Speech evaluation sometimes is recommended to evaluate and treat a possible swallow dysfunction. The specific treatment plan depends on the cause of the delayed growth. A multidisciplinary approach is extremely important, and the communication between the primary care and several subspecialties (GI, endocrinology, pulmonology, cardiology) is fundamental.

If food refusal continues and FTT cannot be managed with an oral diet, children may need a gastrostomy tube (GT). Children that receive a GT should continue to be followed closely by a pediatric GI physician with the support of a dietitian and a psychologist to help families with adjustments and adaptation of new stages of treatment. The decision to remove a GT should be made with a complete assessment of swallow function, documented adequate oral intake, and excellent growth for at least 4-6 months.

FTT can lead to long-term complications with permanent mental, emotional and physical delays. These complications can be avoided with early interventional approach and cooperation between the primary care physician and different subspecialists, including pediatric gastroenterology. Our goal is to provide the earliest possible intervention to help patients and families.

Nutrition Intervention for Failure to Thrive

By Ashley Rogers, MS, RD, LDN

Parents and health care providers often become concerned about their child's weight if they are smaller than peers of the same age. Children with failure to thrive usually have a weight that is below the 3rd or 5th percentile for their age, and/or declining growth velocity. FTT can result from a variety of underlying nutritional causes, such as:

- Improper mixing of the infant formula or poor milk supply from breastfeeding mothers.
- Difficulties chewing or swallowing.
- Intolerance to milk protein.
- Infections, which can put great energy demands on the body and force it to use nutrients rapidly.
- Metabolic disorders that can make it difficult for the body to break down, process, or derive energy from food.

Successful intervention from the time of diagnosis requires active multidisciplinary team involvement from physicians, registered dietitians, social workers, and primary caregiver. Medical Nutritional Therapy (MNT) is essential for evaluating the underlying cause of FTT. The goal of nutritional intervention is to achieve catch-up growth, which is growth at a faster than normal rate for age ensuring the child's relative deficit of body size is restored.

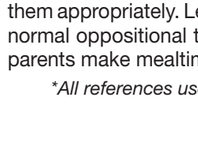
Dietary and behavioral recommendation that aid in treatment of FTT:

- Limit the consumption of excessive fluids. At mealtimes, offer solid foods before liquids.
- Avoid junk foods. They have little protein and fewer calories.
- Maximize the calories in all foods consumed. This can be achieved by adding margarine, mayonnaise, gravies, peanut butter and cheese to foods.
- Offer a high calorie nutritional supplement for additional calories and protein.
- Have scheduled mealtimes. Allow one hour before a meal or snack without food or drink. Children need to eat often, not constantly.
- Offer foods every two to three hours, to allow three meals and two to three snacks per day.
- Avoid making mealtimes too long, allow about 15 minutes for a toddler.
- Relax during feedings or mealtimes. This will help with the child's overall intake of food.
- Avoid battles, encourage the child and provide positive reinforcement.
- Encourage independent feeding, especially finger foods.
- Limit distractions during mealtimes such as television, music, etc.
- Eat together as a family. Young children want to mimic parents or older siblings.
- In severe cases, enteral nutrition may be required with a continuous or nocturnal feeding to help nourish the child.

The primary goal of managing FTT is to improve the child's nutritional status by providing adequate nutritional intake for catch-up growth. Catch-up growth is generally initiated within two days to two weeks, depending upon the severity of the initial deficit. The frequency of follow-up depends upon the child's age and the severity of undernutrition. The follow-up visits should continue until catch-up growth is demonstrated and a positive weight trend is maintained. FTT is a very serious condition but is also very treatable and reversible if it is managed correctly with a multidisciplinary team.

The Psychosocial Perspective of Failure to Thrive

By Kate Christian, LCSW



Non-organic failure to thrive (NOFTT), also called psychosocial failure to thrive, is defined as decelerated or arrested physical growth associated with poor developmental and emotional functioning. NOFTT usually occurs in children under two years of age who has no known medical condition that causes problems with growth. Psychological, social and/or economic problems are thought to play a role in NOFTT and infants born to parents having these struggles are at higher risk of developing NOFTT.

NOFTT may occur when maladaptive behaviors are exhibited by the infant and/or primary caregiver. These behaviors may be related to difficulty establishing calm and consistent feeding routines, problems of attachment between the parent and the infant, or parents who are depressed, under an extreme amount of stress, and drug or alcohol abuse.

The diagnosis of NOFTT is usually made based on growth rate well below where it should be when plotted on standardized growth charts without a known medical cause. Behavioral health specialists can assist physicians and dieticians in assessing aspects of the relationship between parent and child and identifying specific thoughts and behaviors that may be affecting mealtimes and eating routines.

Behavioral health specialists can help parents become aware of family interactions that might be contributing to a child's difficulty eating adequately and gaining sufficient weight. A behaviorist can help families' implement nutritional and mealtime changes recommended by a physician or dietician since this can be a frustrating and anxiety-provoking time for both parent and child. Parents can learn to be sensitive to their child's temperament and more attentive to his/her hunger cues so they can learn to interpret and respond to them appropriately. Learning skills to manage developmentally normal oppositional toddler behaviors during meals can help parents make mealtimes pleasant and positive.

**All references used in all articles are available upon request.*

Our behavior health clinicians can help your pediatric patients with:

- **GI-related disorders** including recurrent abdominal pain, food allergies, celiac disease, irritable bowel syndrome & inflammatory bowel disease, constipation & encopresis
- **Other disorders** including adjustment to illness, family dysfunction, sleep difficulties, conduct disorder, depression, generalized anxiety, panic attacks, eating disorders, non-compliance to medical regimens, and more…

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Hello Friends,

First, and foremost, I hope each of you weathered the recent storms safely. For those of you who were affected by the storms, our heart-felt compassion goes out to you and your loved ones. We hope you rebuild quickly and enjoy the summer months ahead.

Over the years we have tackled a number of gastrointestinal disorders commonly seen in our office. One disorder we see in infants, children, and sometimes adolescents that we have not talked about is Failure to Thrive (FTT). The common pediatric patient who is considered FTT has weight below the third to fifth percentile on multiple occasions. While these infants and children are all considered small for their age, the underlying cause for this disorder can vary from decreased oral intake to increased demand to increased GI loss or a variety of social issues.

If you have a patient who does not seem to be gaining weight and/or growing properly, our team of specialists would love to help him/her. Please do not hesitate to call our office and schedule a comprehensive evaluation with one of our providers. If needed, we will also have the patient see one of our dieticians and/or behavior health clinicians.

Sincerely,

Al-Tawil

Youhanna Al-Tawil, M.D.
Medical Director, GI for Kids, PLLC

The Knoxville Celi-ACT Support Group Gluten-Free Camp at Camp Wesley Woods

Celi-Act Knoxville area celiac patients helping each other. www.celi-act.com Established by GI for Kids, PLLC

Camp Wesley Woods

Join us this summer for a camp set aside for kids with celiac disease and gluten intolerance!

The camp will be at Camp Wesley Woods in Townsend, TN. Prices include all gluten-free meals, lodging, and camp activities. Camp dates are:

- **July 17 – 22: $345 for full week for children in grades 6 – 12**
- **July 20 – 22: $180 for half week for children in grades 2 – 5**

For more information, please contact Susan Roberts at mickyr@aol.com. You can also visit our Celi-ACT Support group at: www.celi-act.com.