

Social/Emotional Factors in Failure to Thrive

Cheryl Pratt Ph.D.
Ira J. Chasnoff M.D.

Failure to thrive (FTT) is a term used to describe inadequate growth or the inability to maintain growth, usually occurring in early childhood. There is no universally accepted definition of FTT, and the term describes a condition or group of symptoms rather than a specific disease.

Definition of FTT

The phrase FTT first appeared in the 1933 *The Disease of Infancy and Childhood 10th Edition*. In 1960, Elmer referenced “maternal deprivation syndrome” to describe the psychosocial aspects of poor weight gain. In recent years, the terms *undernutrition* and *inadequate growth* have been used.

An objective parameter for defining FTT is a deceleration of growth; thus, FTT is the term that often is used when growth parameters (height and weight) fall 2 or more percentiles, are persistently below the third or fifth percentiles, or are less than the 80th percentile of median weight for height measurement (Sirotnak, 2011). It is only if FTT is severe that brain growth is impaired, as evidenced by low head circumference. In any case, however, because multiple biologic, psychosocial, and environmental processes can lead to undernutrition, FTT should never be a diagnosis by itself (Gahagan, 2006).

Prevalence of FTT

The incidence of growth failure of children in America is difficult to assess. FTT is believed to affect up to 5% of the overall population; however, it is most commonly found in the first six months of a child’s life (Sirotnak, 2011). In the United States, FTT is seen in 5-10 percent of children in primary care settings and accounts for up to 3-5% of all pediatric hospital admissions (Cole and Lanham, 2011). FTT affects up to 30% of infants seen in ambulatory care and emergency room settings, 22% of those infants born prematurely with low birth weight, and as many as 57% of those infants living in low-income areas or below the poverty level in urban and rural areas (Benoit, 2009).

Etiology of FTT

For many years the pediatric community has divided FTT into two broad categories: organic FTT and non-organic FTT. Organic FTT is applied when an infant or child presents with signs and symptoms of a medical diagnosis that has led to poor weight gain and feeding difficulties. Organic causes of failure to thrive may include premature birth, especially if the fetus experienced intrauterine growth retardation; maternal smoking or the use of alcohol or illicit drugs during pregnancy; mechanical problems that impact a child’s ability to suck or swallow (e.g., cleft lip, cleft palate, microgathia or a neurological deficit such as oromotor control, hypotonia, hydrocephalus); and children with a congenital heart defect, renal failure, or cystic fibrosis, as these children expend so much energy in the process of eating that their caloric intake cannot keep up with caloric expenditure. Other causes of increased caloric expenditure are hyperthyroidism, metabolic disorders, immunodeficiencies, and recurrent infection (Kessler and Dawson, 1999; Panetta et al, 2008).

Healthy appearing full term infants can present with organic FTT due to feeding difficulties that may be the result of ineffective and disorganized sucking problems; feeding resistant behaviors due to gastroesophageal reflux disease; and, in toddlers, food texture intolerance or poor appetite (Ramsay et al, 2002). Inadequate intake also can result from metabolic abnormalities such as excessive vomiting caused by obstruction of the gastrointestinal tract, kidney dysfunction, and drugs. Poor absorption of food, inability of the body to use absorbed nutrients, or increased loss of nutrients as in chronic diarrhea, celiac disease, giardiasis, cystic fibrosis, and excessive juice intake, also can result in organic FTT. Other causes for organic FTT include increased lead levels, biliary atresia, hepatitis, iron deficiency anemia and malignancy.

The diagnosis of non-organic failure to thrive focuses on psychosocial reasons for a child's growth problems. Often the focus is on the infant/caregiver relationship. According to Chatoor and colleagues (2004) until recently, there was a tendency to link non-organic FTT with neglect and/or maternal deprivation syndrome as synonymous terms. Recent research findings have rejected this assumption. Although growth failure occurs in all socioeconomic groups, low-income families who lack basic parenting skills and basic knowledge of infant growth and development and families facing extreme psychological stress also may present with infants who exhibit non-organic FTT (Locklin, 2005). Risk factors and characteristics of families associated with non-organic FTT include young age of parent (teenage parent); unplanned or unwanted pregnancy; lower levels of parental education, especially failure to complete high school; absence of a father; increased life stress; absence of a support network including family, friends, or other social supports; domestic violence; mental illness including postpartum depression and high level of maternal anxiety; family dysfunction such as abuse, domestic violence, or divorce; poor feeding skills on the part of the parent; difficult parent-child interactions and/or reactive attachment disorder, parental history of childhood abuse; parental substance abuse; poverty; family history of criminality; community violence; parents who have a negative perception of their infant; parents who themselves have an insecure attachment model; parents who experienced caregiver instability and crises in their own childhood; and parents who have cognitive deficits (Higgins et al, 2008; Choi, et al, 2010; Paris et al, 2009; Weston, et al, 1993; Stewart, 2007; Benoit, 2009).

In an estimated 30- 35% of FTT cases there may be a mixed presentation of both organic and non-organic failure to thrive (Schwartz, 2000; Shaw, 2002), so both aspects should be included in an initial evaluation. For example, mothers who have experienced a great deal of stress during their pregnancy often have infants who are quite fussy and develop a regulatory disorder because maternal stress hormones have impacted the infant's HPA axis and regulatory system (Porges, 2004).

Long-term outcome

A variety of studies have demonstrated an increased risk of long-term growth and developmental delays in children who have exhibited FTT. Several studies have found long-term cognitive outcomes are within normal limits at age 6 if the infant is diagnosed and early therapeutic interventions are instituted. Weight and height differences may continue to occur over time in these children, with treated children falling into the normal growth parameter ranges but being shorter and lighter than children who did not suffer FTT in infancy (Boddy et al, 2000). Some studies indicate that children with early FTT never really catch up and are more prone to develop social problems, behavioral problems, eating disorders, poor arithmetic performance, and poor work habits due to their early experiences and because they continue to live in the same family and/or community environment (Drotar and Eckerie, 1989; Black et al 2007; Benoit, 2009).

A 20 year longitudinal study of 31 children with non-organic failure to thrive revealed that when there was a significant change in the quality of care given to the child, including creation of or movement into a more sensitive and positive emotional environment, the child as an adult experienced higher levels of self-esteem, higher educational attainment, increased levels of social support, and more positive relationships and social skills. Long-term outcomes were poorer when there was little improvement shown after intervention or where the changes were not sustained for long periods of time (Iwaniec et al, 2003). More positive outcomes also were found in studies in which the child and family were referred for interdisciplinary team interventions, with the team working in partnership with the family in order to provide health education and counseling and ongoing monitoring of growth parameters, nutritional counseling and education, supportive economic assistance when needed, child developmental education and interactive guidance, infant massage, education on social and nurturing techniques, family mental health therapeutic interventions including family therapy, individual therapy, and parent-child interaction therapy, and developmental therapies where needed (Batchelor, 2008; Benoit, 2009; Higgins et al, 2008; Stewart and Meyer, 2004).

Developmental and infant mental health perspectives

Normal child development occurs within a positive parent-child relationship (Lieberman, 1993; Sameroff et al, 2004). Thus, when working with young infants, it is crucial for the therapist to be aware of normal social-emotional developmental stages and how normal developmental drives may impact the child's feeding behaviors.

- The first two to three months of life relate to homeostasis. Feeding difficulties emerging during this time period often relate to breast feeding problems, formula intolerances, sucking and swallowing problems, medical problems, and/or post-partum depression.
- At 4 to 10 months of age, feeding problems may reflect the previous cited difficulties along with an emerging attachment disorder. 7-9 months of age in particular should reflect an onset of focused attachment as stranger awareness emerges.
- Between 18 and 24 months, self-awareness and symbolic representation occur, and with increasing separateness comes a corresponding increase in mood swings, secure base behaviors, and a sense of vulnerability in the young child. The toddler's assertion of autonomy, use of the word "no" and temper tantrums also occur during this developmental period. Fragile parent child relationships become even more strained during this time, and feeding problems can become more problematic especially when combined with normal infantile anorexia (Rosenblum, et al, 2009).

The parents' own mental health colors how they perceive the infant's expression of emotions. An infant's mental health is shaped by the early interactions with his or her primary caregiver. Asynchronous interactions, which are seen when the adult partner is not sensitively attuned and responsive to the cues of the infant, negatively impact the infant's emotional development (Stern, 1985). The parents' sensitivity, self-concept, role development as parents, life experiences, representations of their own early relationships, representation of their children, and social and community influences continue to influence the security of the child's attachment.

Interventions

A full medical evaluation to identify and address possible organic bases of FTT should be the first step in intervention. If there are medical concerns, the child's pediatrician will order appropriate diagnostic tests, and referrals may need to be made to other pediatric sub-specialists such as pediatric gastroenterology, pediatric endocrinology, ENT, etc.

However, most cases of FTT do not have an organic basis, and non-organic issues must be fully assessed. Interventions for non-organic feeding disorders and FTT in young children require a professional to maintain both a sensitive and comprehensive approach to the child and his/her family. The goal for all interactions with the family is one of encouraging a partnership with the parents in resolving the infant's feeding problem. When feeding difficulties are first identified it is important to completely assess the problem through taking a history as well as growth parameter assessment. It is useful to ask the parent to keep a food diary/journal in order to appropriately assess caloric intake, as well as to identify problematic behaviors and reactions of the child to feedings. One should observe the parent feeding the child in the home as well as in another setting. It also is very helpful to observe another caregiver feeding the child in two different settings. If there are concerns regarding interactions between the child and parent a comprehensive psychosocial history should be undertaken with special emphasis on all the relationship-based risk factors associated with FTT. Consultation with a pediatric nutritionist regarding the caloric intake and diet is important. Depending on the findings the nutritionist may need to intervene for further assessment and parent education. If difficulties are related to financial and environmental concerns, a referral to a social worker should be made. An Infant Mental Health Specialist may be required to further assess and intervene with the parent-child dyad if there are concerns regarding the interactions and mental health status of the parent and child. If there are concerns regarding the child's feeding abilities (e.g. oromotor difficulties, problems with sucking, swallowing, chewing, etc.), Child and Family Connections can conduct a global assessment through Illinois' early intervention system. Request that at least one of the global evaluators have expertise in feeding difficulties (speech and language pathologist or a pediatric occupational therapist with a sensory processing and feeding background). Parental mental health problems may require a referral to a psychiatrist. All members of the interdisciplinary team should communicate clearly with one another for interventions to be truly effective.

Early childhood is a critical period in which the foundation of long-term emotional health is laid down. This is especially important given the increasing rates of FTT being seen due to rising poverty levels and subsequent family stress and trauma in many communities. Early identification of feeding problems may prevent FTT as well as facilitate the child's ongoing developmental trajectory within a positive parent-child relationship.

References

- Batchelor, J. (2008). Failure to thrive revisited. Child Abuse Review, 17, 147-159.
- Benoit, D. (2009). Feeding disorders, failure to thrive, and obesity. In Charles Zeanah (Ed.). Handbook of Infant Mental Health. New York: Guilford Press, pgs. 377-391.
- Black, M., Dubowitz, H., Krishnakumar, A., and Starr, Jr., R. (2007). Early intervention and recovery among children with failure to thrive: Follow-up at age 8. Pediatric Digest.
- Boddy, J., Skuse, D., and Andrews, B. (2000). The development of sequelae of nonorganic failure to thrive. Journal of Child Psychology and Psychiatry, 41(8), 1003-1014.
- Chatoor, I., Surlles, J., Ganiban, J., Beker, L., Paez, L., and Kerzner, B. (2004). Failure to thrive and cognitive development in toddlers with infantile anorexia. Pediatrics, 113(5), 440-447.
- Choi, H., Yamashita, T., Wada, Y., Narumoto, H., Nishizawa, S., Masaki, D., and Fukui, K. (2010). Factors associated with postpartum depression and abusive behavior in mother with infants. Psychiatry and Clinical Neurosciences, 64, 120-127.
- Cole, S. and Lanham, J. (2011). Failure to thrive: An update. American Family Physician. 83(7), 829-837.
- Drotar, D. and Eckerie, D. (1989). The family environment in nonorganic failure to thrive: A controlled study. Journal of Pediatric Psychology, 14(2), 245-257.
- Gahagen, S. (2006). Failure to thrive: A consequence of undernutrition. Pediatric Review, 21(8), 257-264.
- Higgins, M., Roberts, I., and Glover, R. (2008). Postnatal depression and mother and infant outcomes after infant massage. Journal of Affective Disorders, 109, 189-192.
- Iwaniec, D., Sneddon, H., and Allen, S. (2003). The outcomes of a longitudinal study of non-organic failure to thrive. Child Abuse Review, 12, 216-226.
- Kessler, D. and Dawson, P. (Eds.). (1999). Failure to thrive and pediatric undernutrition: A transdisciplinary approach. Baltimore: Paul H. Brooks Publishing Co.
- Lieberman, A. (1993). The emotional life of the toddler. New York: Free Press.
- Locklin, M. (2005). The redefinition of failure to thrive from a case study perspective. Pediatric Nursing, 31(6), 474-479; 496.
- Panetta, F., Magazzu, D., Sferlazzas, Lombardo, M., Magazzu, G., and Lucanto, M. (2008). Diagnosis on a positive fashion of nonorganic failure to thrive. Acta Paediatrica, 97, 1281-1284.
- Paris, R., Bolton, R., and Weinberg, M. (2009). Postpartum depression, suicidality, and mother-infant interactions. Archives of Womens Mental Health, 12, 309-321.
- Porges, S. (2004). Neuroception: A subconscious system for detecting threats and safety. Zero to Three, May 2004, 19-24.
- Ramsey, M., Gisel, E., McCusker, J., Bellavance, F., and Platt, R. (2002). Infant sucking ability, non-organic failure to thrive, maternal characteristics, and feeding practices: A prospective cohort study. Developmental Medicine and Child

Neurology, 44(6), 405-415.

- Rosenblum, K., Dayton, C., and Muzik, M. (2009). Infant social and emotional development: Emerging competence in a relational context. In Charles Zeanah (Ed.). Handbook of Infant Mental Health. New York: Guilford Press, pgs. 80-103.
- Sameroff, A., McDonough, S., and Rosenblum, K. (Eds.). (2004). Treating parent-infant relationship problems: Strategies for intervention. New York: Guilford Press.
- Schwartz, I. (2000). Failure to thrive: An old nemesis in the new millennium. Pediatricians Review, 27, e1-e11.
- Shaw, M. (2002). Failure to thrive in children. Journal of Clinical Gastroenterology, 35(5), 371-374.
- Sirotnak, A. (2011). Failure to thrive. Medscape Reference. WebMD. November 28, 2011.
- Stern, D. (1985). The interpersonal world of the infant: A view from psychoanalysis and developmental psychology. New York: Basic Books.
- Stewart, R. (2007). Maternal depression and infant growth-a review of recent evidence. Maternal and Child Nutrition, 3, 94-107.
- Stewart, K. and Meyer, L. (2004). Parent-child interactions and everyday routines in young children with failure to thrive. American Journal of Occupational Therapy, 58, 342-346.
- Weston, J., Colloton, M., Halsey, S., Covington, S., Gilbert, J., Sorrentino-Kelly, L., and Slein, S., (1993). A legacy of violence in nonorganic failure to thrive. Child Abuse and Neglect, 17(6), 709-714.