## 1.12 FAILURE TO THRIVE

### Introduction

Failure to thrive (FTT), also known as weight faltering, is a descriptive term that refers to a child with relative undernutrition and subsequent inadequate growth over time, when compared to other children of similar age, gender, and ethnicity. Several definitions have been proposed based on abnormal anthropometric criteria, but none is uniformly accepted. The etiology of FTT is often multifactorial and results from a complex interplay between psychosocial, behavioral, and physiological factors. Ultimately, this interaction leads to inadequate caloric intake (in the setting of normal or excessive metabolic demands), inadequate absorption of calories, impaired utilization of absorbed calories, or a combination of these. FTT is often successfully managed in the outpatient setting. However, hospitalization may be necessary for very complex situations, when a child's safety is in question, or when outpatient management has not been successful. FTT accounts for up to 5% of all pediatric hospitalizations, with a growing proportion of these occurring in children with medical complexity. Pediatric hospitalists should use evidence-based approaches to guide evaluation and management, provide leadership for multidisciplinary teams, and coordinate care to optimize outcomes.

### Knowledge

Pediatric hospitalists should be able to:

- Describe the differential diagnosis of FTT for children of varying chronological and developmental ages, recognizing that most children with FTT do not have an underlying medical disorder.
- Explain why infants and toddlers are at greater risk for FTT than older children.
- Describe the association between FTT and child abuse and neglect.
- Describe normal growth patterns for children and the sequential effect of undernutrition on weight velocity, height velocity, and head growth.
- Describe the key historical or physical examination findings that may indicate a psychosocial, behavioral, or physiological factor contributing to poor growth.
- Describe the relationship between food insecurity and FTT, including the indirect contributions of increased family stress, parental depression, and a chaotic family environment.
- Explain indications for admission to the hospital and state criteria for determining the appropriate level of care.
- Describe the goals of hospitalization including stabilization, diagnosis, treatment, observation, and education.
- Discuss the importance of observation of feeding behaviors and recording of nutritional intake over time in the evaluation of FTT.
- Describe the role of targeted diagnostic testing in the evaluation of FTT, recognizing that routine screening tests are not beneficial in most cases.
- Discuss the indications for consultation with a pediatric speech or occupational therapist, nutritionist, gastroenterologist, or another specialist.
- Discuss the need for catch-up calories in FTT, as well as the methods by which to achieve adequate caloric supplementation.
- Define refeeding syndrome and describe methods that lead to its early detection and prevention.
- Discuss potential sequelae of FTT (such as behavioral or developmental abnormalities, increased susceptibility to infections, and others) and list the risk factors associated with each.
- List the risk factors for FTT-readmissions after the index hospitalization, such as increased age on admission and medical complexity.

### Skills

Pediatric hospitalists should be able to:

- Stabilize patients presenting with metabolic abnormalities, cardiopulmonary compromise, or other urgent problems as a result of dehydration, malnutrition, or an abnormal pathophysiological state.
- Obtain a thorough patient history, including a detailed social, family, dietary, and feeding history, attending to markers of abnormal behavioral, psychosocial factors, and food insecurity.
- Perform a directed physical examination, including careful measurement of anthropometric data, attending to findings that may indicate an underlying medical or genetic condition, developmental abnormality, or child abuse and neglect.
- Utilize standardized growth charts to identify isolated growth abnormalities and to assess the growth pattern over time.
- Directly observe and correctly interpret a feeding session, with attention paid to feeding behavior and the child-caregiver interactions.
- Assess the level of evidence and risk/benefit ratio for an expanded diagnostic evaluation.
- Calculate caloric needs and adjust feeding regimens to maximize weight gain while avoiding gastrointestinal compromise.
- Engage and coordinate care with subspecialists and support services (such as speech and/or occupational therapy, nutrition, social services, and others), both during the hospitalization and upon discharge, when indicated.

### Attitudes

Pediatric hospitalists should be able to:

- Appreciate the impact of food insecurity and other social determinants of health on the development of FTT.
- Consider the concerns of the family/caregivers when obtaining a history, developing a diagnostic approach, and offering anticipatory guidance and management options.
- Realize responsibility for providing support and education to the family/caregivers on FTT, with specific focus on the patient-specific underlying diagnoses and family/caregivers' social situation.
- Recognize the importance of communicating effectively

with the family/caregivers and healthcare providers regarding findings and care plans.
- Exemplify collaborative practice with the primary care provider, specialists, and support services as indicated to ensure coordinated longitudinal care for children with FTT.

### Systems Organization and Improvement

In order to improve efficiency and quality within their organizations, pediatric hospitalists should:

- Work with healthcare providers and community leaders to develop a system for effective and safe transitions of care from the inpatient to outpatient healthcare providers, preserving the multidisciplinary nature of the care team when appropriate.
- Lead, coordinate, or participate in institutional and community efforts to identify food insecurity and connect children and the family/caregivers to government and other available resources.
- Advocate at the local, state, or national level in support of government and other programs that address food insecurity among children and the family/caregivers.
- Lead, coordinate, or participate in efforts to develop evidence-based guidelines for the evaluation and management of FTT in the hospital.

## References

1. Homan GJ. Failure to thrive: a practical guide. *Am Fam Physician*. 2016;94(4):295-299.
2. Puls HT, Hall M, Bettenhausen J, et al. Failure to thrive hospitalizations and risk factors for readmission to children's hospitals. *Hosp Pediatr*. 2016;6(8):468-475. https://doi.org/10.1542/hpeds.2015-0248.