

## Standardizing Inpatient Failure to Thrive Management

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1. Target population: These recommendations are intended to apply to otherwise healthy children admitted to the hospital solely for evaluation of failure to thrive. Excluded are medically complex children with comorbidities or clear organic pathology contributing to FTT (e.g., neurologically impaired, metabolic disease, malabsorption, congenital heart disease).
2. Definitions of FTT are fraught with difficulties and there is no consensus definition. Many are based on anthropometric criteria which are inherently flawed in that they describe a sizeable population of normal children, who for genetic or ethnic reasons are small. This incorrectly attributes pathology to otherwise normal children. A practical working definition is: **Inadequate growth over time, relative to standard growth charts, after taking into account age, gender, and ethnicity.** Flawed definitions based purely on anthropometric criteria include:
  - a) Weight < 5th percentile for age
  - b) Weight for length < 5th percentile for age
  - c) A rate of weight gain that is exhibited by a decrease in 2 major percentiles over time
3. Recommendations:
  - a) Hospital admission is not necessary for most children with FTT, and is often deleterious to the long-term care of many children with mild to moderate intake deficiency. Hospitalization should be reserved for children who are severely malnourished, seriously ill, or at risk for neglect or harm (*Fryer 1988*).
  - b) If admitted, a multidisciplinary group of healthcare providers (including a social worker, occupational/feeding therapist, nutritionist, and case manager) should be involved (*Hobbs 1996*).
  - c) **Prior to admission**, obtain: newborn screen results, outpatient growth charts, and results of any testing or consultation already done. Discuss with PCP concerns leading to hospitalization and goals of hospitalization.
  - d) A detailed feeding, diet, and social history is indicated including direct observation of feeding and trained observations of parental-child interactions and bonding. While MDs and RNs should observe feeding, a formal feeding assessment is best documented by a feeding therapist and/or a lactation specialist if the child is breastfeeding. Thus, **a dysphagia consult should be requested for all FTT admissions and/or a lactation consult for all breastfeeding infants.**
  - e) **Consult the clinical nutritionist** for a detailed nutritional analysis and growth assessment as well as guidance in developing and implementing an individualized caloric supplementation plan. Children with FTT will need supplemental caloric intake for catch-up growth. Often supplementation starts with a 10-20% increase above the dietary reference intake for the child's expected weight for age (or reported home intake). Some children with FTT need up

- to a 50% increase. Nutritional consultation during initiation of a high-calorie age-appropriate diet is indicated. For infants, this may include recommendations for hypercaloric formula.
- f) **Order strict ins/outs for all FTT admissions. Order a calorie count for children taking solid foods.** Formula-fed babies (or babies taking expressed breast milk from a bottle) do not need a calorie count as caloric intake can be determined from the volume of recorded intake. A calorie count is difficult in a breastfed baby given that the volume is unknown. Intake is instead documented as minutes feeding on each breast, which can still be useful as there are standard expectations around how long it should take a baby to feed. Weighing an infant immediately before and after feeds *can* be done if it is important to document exactly how much volume an infant is receiving from breastfeeding. Usually this is not necessary and is not typically done, though may be indicated in specific scenarios.
  - g) **Routine subspecialty consultation is discouraged.** Sometimes, there are *specific* indications for gastroenterology consultation (e.g. suspected malabsorption), endocrinology consultation (e.g. short stature), or neurologic consultation (e.g. microcephaly). **FTT alone should not trigger routine subspecialty consultation.**
  - h) **There is no evidence that a panel of routine laboratory screening tests for FTT is indicated in the absence of guiding evidence from the history, physical, and feeding assessment.** The yield of a standard lab panel in these children is exceedingly low (*Sills 1978*).
  - i) **Very few children with FTT will need complex testing for rare diseases such as metabolic, genetic, or endocrinologic disorders. Such testing should be ordered based on specific indications from the history and physical that suggest organic pathology.** Despite all of this, we understand that some physicians choose to order screening laboratories and would urge that **if you choose to do so despite the lack of evidence, you limit testing to basic, low-cost screening tests** (listed below) and resist pressure to order expensive, send-out tests for unlikely diseases.
    - i. CBC with red cell indices (to evaluate for anemia and iron deficiency)
    - ii. Complete chemistry panel (including tests for renal and hepatic function)
    - iii. Celiac screening
    - iv. Urinalysis (to evaluate for infection or RTA)
    - v. Stool examination for fats and reducing substances
    - vi. Sweat chloride test for cystic fibrosis.
    - vii. Screening for hypothyroidism or growth hormone deficiency should be considered only if length has decelerated and is < 50th percentile on the length-for-age chart.
  - j) **All efforts should be made to allow the child to feed orally.** Indications for NG tube supplementation might include failed outpatient management despite a several (3-6) month trial of increased oral caloric supplementation, or clear evidence after dysphagia consultation that oro-motor dysfunction is a likely contributor to poor growth.
  - k) There is no evidence that the traditional approach of documenting multiple days of in-hospital weight gain alters outcomes. Weight gain is expected over weeks to months, not days. **If appropriate outpatient weight monitoring is arranged, keeping the child hospitalized solely to document weight gain is unnecessary.** There is lack of consensus for standardized inpatient management of FTT, including criteria for when discharge is appropriate. Such criteria might include:
    - i. No evidence of severe malnutrition (\*defined below) requiring inpatient monitoring

- for refeeding syndrome.
  - ii. No evidence of dehydration and assurance that child is able to maintain goal hydration.
  - iii. No serious intercurrent medical problem.
  - iv. No psychosocial circumstances putting child at risk for immediate harm.
  - v. Evidence that the patient can take sufficient calories to reasonably expect growth in the outpatient setting.
  - vi. If NG feeds were initiated, appropriate parental teaching and home-based support has been arranged.
  - vii. If parental mental health issues are identified, appropriate referrals have been made and follow-up plans firmly established.
  - viii. There is a clear and detailed follow-up plan in place for close (weekly) outpatient weight monitoring.
- l) A critical part of discharge readiness includes **verbal communication with the PCP. The discharge summary should document a clear plan about who specifically is following the child's outpatient growth and feeding** (often the PCP, but might be another provider or a gastroenterologist in certain cases). If NG feeds were initiated it is mandatory to discuss with the PCP (and document in the discharge summary) who will manage the NG tube and any feed changes after discharge.

\*Severe malnutrition definition: Weight/height z-score or height z-score < -3  
 WHO z-score charts available at <http://www.who.int/childgrowth/standards/en/>

## References

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