

## FALTERING GROWTH: A PRACTICAL GUIDE

**Faltering growth is the term we use when a child is clearly not growing as expected, that is, not at the same rate as other children of the same age. At present, there isn't an agreed definition of this term.**



**Emma Coates**  
Paediatric Dietitian  
Wrexham Maelor  
Hospital, Betsi  
Cadwaladr  
University Health  
Board

Emma has been a Paediatric Dietitian for four years. She works mostly in the community setting with a varied caseload, including children with disability, dysphagia, CF, coeliac disease and PKU. Emma also works with children with ADHD and ASD.

Here is a brief summary of some of the key points when considering faltering growth and what it means:

- A complex problem which affects up to five percent of children under five years of age (1).
- It can occur across all socio-economic groups.
- Between five to 10 percent of cases are related to a medical condition (1).
- It may be documented as 'failure to thrive' (FFT), but this terminology has been criticised in the past and the preferred term is now faltering growth.
- Defined as 'falling' through two or more centile on the UK-WHO growth chart (2).

Inadequate energy intake is the cause of faltering growth, which may be the result of a child taking insufficient amounts, poor food availability, or increased requirements. There are a number of factors that can contribute to this. Faltering growth was traditionally divided into two categories, 'organic' and 'non organic'. This is no longer used in current practice as they often overlap. Table 1 summarises the causes of faltering growth.

### ASSESSMENT

A thorough assessment is essential for identifying faltering growth and how it should be managed. A full assessment should include feeding, medical and social history, but it is also important that the child is mea-

sured correctly and that these measurements are taken at regular intervals during the treatment journey.

### HOW DO WE MEASURE GROWTH?

We measure weight, length/height, and head circumference to obtain an overall, '360 degree' assessment of the child's growth. These must be measured correctly, which requires training and practice to ensure competence. A range of useful video guides for weighing and measuring children can be found at [www.rcpch.ac.uk/who-uk-growth-charts-resources-videos](http://www.rcpch.ac.uk/who-uk-growth-charts-resources-videos) (accessed June 2013)

**Weight:** For children under two years of age, digital baby scales should be used. Children under two should be weighed naked and at the same time of day.

**Height/length:** Until the age of two years, a child's length should be measured using a length board or mat. This is not always the easiest measurement to take, as the child is required to be laid flat and straightened along the board or mat. The child is held in this position with the head against the head board whilst the foot board is brought up to the feet when the child's heels are flat on the board. Children often dislike being held in this position and wriggle around, so allowing extra time in a clinic session may be useful in order to complete this measurement.

**Head Circumference:** Whilst the child is held in a sitting position, the widest part of the head should be measured using a thin plastic or disposable paper tape. This should be repeated up to three times to ensure an accurate measurement has been obtained. Measurements should be rounded off to the nearest millimetre.

### FEEDING HISTORY - NUTRITIONAL ASPECTS

**1. Breast or formula fed?** Until six months of age, breastfed babies grow more rapidly than formula fed babies. After six months of age, growth in formula fed babies accelerates quicker than breastfed babies

**2. Solids:** If they have been introduced, when did this occur? How much are they taking? What consistency/texture of solid food is the child managing/tolerating? Is this age appropriate for the child? Inappropriate weaning, or feeding difficulties during the weaning stages, can lead not only to inadequate calorie intake but also to nutritional deficiencies, particularly iron deficiency. Lack of variety (tastes and textures) at this time can lead to restrictive eating later in the child's development.

Table 1: Causes of faltering growth

Acute or chronic illness	Other clinical factors	Other factors
Increased requirements, e.g. cystic fibrosis	Oro-motor dysfunction	Behavioural problems
Failure to absorb nutrients, e.g. coeliac disease	Dysphagia	Early adverse feeding conditions, e.g. early tube feeding
High metabolic rate, e.g. congenital heart disease	Gastro-oesophageal reflux	Poor feeding environment
Failure to utilise nutrients, e.g. metabolic disorders	Poor dentition or dental caries	Inadequate feeding/weaning conditions or knowledge
Neurological disorders, e.g. cerebral palsy	Constipation	Limited budget/poverty
	Nutritional deficiency, e.g. iron deficiency anaemia	Parental views/beliefs on feeding
	Poor appetite as a consequence of medication, e.g. ADHD medication	Child's temperament
		Maternal mental health
	Parent/baby attachment/relationship	
	Neglect and/or abuse	

Table 2 Assessment continued - medical and social aspects

Medical history	Social history
Pregnancy history and gestation, for example, was the baby full term or premature?	Who is the main carer and who lives with the child? Where does the child live? They may have 2-3 'homes' if parents are separated and another carer is involved, e.g. a grandparent
Maternal health - consider postnatal depression	Are there any problems within the family? Domestic violence, abuse/neglect?
Has the child been assessed by a GP or paediatrician?	Are there any problems within the family? Domestic violence, abuse/neglect?
Past or current medical conditions	What is the financial situation within the family? Are they entitled to any help, e.g. Healthy Start vouchers, Flying Start health visitor support?
Symptoms - any diarrhoea, constipation, vomiting, reflux?	Are there any concerns regarding substance or alcohol misuse past or present?
Family medical history, consider if there are any allergies or diagnoses that can affect growth within the family	How well do parents/carers understand the nutritional needs of their child and how to put this into practise?
Growth potential - discuss parental growth and final stature. Ethnicity can impact on this too	

**3. Snacks:** If they are available, what kind? When are they given? Young children require regular meals and snacks to meet their daily nutritional needs. Lack of structured mealtimes, where grazing is encouraged, can lead to overall poor intake and further feeding difficulties at a later stage in the child's development. However, a lack of snacks in between mealtimes may be contributing to an overall reduced total daily intake.

**4. Milk and other fluids:** How much fluid is being given/taken in total? Is this appropriate? Too much fluid may be the cause of poor appetite for solid food and weight may be faltering if the fluids consumed are low calorie: juice, water, or squash, for example. Milk feeds (breast or formula) are encouraged throughout the weaning process and should remain as the child's main drink until they are 12 months old. Water can be given for extra hydration if required. Alternatively, over consumption of milk feeds, leading to lack of interest in solid food, can lead to faltering growth due to inadequate nutrition as the child's nutritional needs increase with age.

**5. Total intake for the whole day:** Parents will often report that their child's intake may vary from day to day, having 'good and bad days'. Asking parents to keep a food diary for a few days may be useful to gauge how much the child is having and whether this is in line with their estimated nutritional requirements. Is there enough food available?

References

1 Shields B et al (2012). Weight faltering and failure to thrive in infancy and early childhood, *BMJ*;345:e5931 <accessed online at www.bmj.com - June 2013>  
 2 Guidance from the Royal College of Paediatrics and Child Health and examples of the UK-WHO 0-4 years growth chart can be found at: www.rcpch.ac.uk/child-health/research-projects/uk-who-growth-charts-early-years/uk-who-0-4-years-growth-charts-initi <accessed June 2013>

USEFUL WEANING RESOURCES:

- The British Dietetic Association's position statement (April 2013) Complementary Feeding: Introduction of solid food to an Infants Diet, available at [www.bda.uk.com/policies/WeaningPolicyStatement.pdf](http://www.bda.uk.com/policies/WeaningPolicyStatement.pdf) <accessed June 2013>
- The Great Ormond Street Hospital for Children's website for weaning advice for sick children [www.gosh.nhs.uk/health-professionals/clinical-guide-lines/infant-feeding-weaning/](http://www.gosh.nhs.uk/health-professionals/clinical-guide-lines/infant-feeding-weaning/) <accessed June 2013>

OTHER ASPECTS WHEN TAKING A FEEDING HISTORY

During your assessment, it is important to recognise that the child and parent/carer relationship and feeding environment can greatly impact on feeding, potentially contributing to faltering growth.

Discussing who feeds the child, when and where this occurs, is important. This may be observed at an agreed feed or mealtime, where a full feeding session can be assessed. The interaction between the child and parent/carers during a mealtime can be observed, which may be stressful at times, particularly if there are feeding difficulties. Previous negative feeding experiences, such as force feeding, reflux, or a period of enteral feeding may be a precipitating factor for faltering growth. This may become more significant as parents/carers continue with usual feeding methods and behaviour. Highlighting any parental/carer anxieties around feeding may be helpful when assessing the child as these may be limiting the child's feeding progress.

Table 2 summarises key points to consider when collecting a medical and social history

MANAGEMENT

Once you have completed your assessment and highlighted where problems are occurring, a treatment plan can be discussed and agreed with parents/carers. This may involve not only dietetic input, but members of a wider multidisciplinary team; a Speech and Language Therapist, for example, should there be oro-motor difficulties and/or dysphagia. Advice regarding safe textures and consistencies can be included in the treatment plan. A consultant paediatrician should provide advice and assessment of the medical aspects of the child's overall health and a child psychologist is important for highlighting and implementing feeding behaviour change for the child and parents/carers. Additional support from a social worker should be included if there are concerns regarding the child's family and social situation. Community based specialist nursing teams may be involved in regular reviews of the child if parents/carers require support to implement care plans.

The dietetic aims in the management of faltering growth are to achieve 'catch up' growth, or, at the very least, to halt the child from 'falling' through any further centiles on the growth chart. Attempting to meet daily nutritional requirements by providing additional calories and nutrients in an appropriate, safe and tolerated way should be discussed, negotiated and agreed with parents/carers. High calorie formulas, vitamin and mineral supplements, food fortification and enteral feeding are all possible options depending on the child's needs.

Minimising anxiety and stress for the parents/carers should enable the required changes to occur, meaning the child's nutritional intake improves. Faltering growth isn't always straightforward to manage, particularly if there are a number of causative factors involved. Dietetic input as part of an MDT approach can and often does bring about significant improvements for the short and longer term of the child's health, provided parents are able to engage with our services and implement advice and care plans.

**Questions relating to:** *Faltering growth: a practical guide*

Type your answers below and then **print for your records**. Alternatively print and complete answers by hand.

Q.1	Summarise faltering growth, describing the key points that need to be considered.
A	
Q.2	What are the main causes of faltering growth and their contributing factors?
A	
Q.3	How is a child's growth measured?
A	
Q.4	What nutritional factors must be considered when compiling a child's feeding history?
A	
Q.5	How can milk and fluid intake affect faltering growth?
A	
Q.6	How can the parent/carer relationship and the environment affect a child's growth?
A	
Q.7	What points need to be considered when compiling a child's medical history in relation to his/her growth?
A	
Q.8	What might a treatment plan for faltering growth include?
Q.9	Describe the dietetic aims in the management of faltering growth.

Please type additional notes here . . .