Faltering Growth

Definition / Supporting Information

There is no universally agreed definition of faltering growth. A child whose weight and / or height are declining across more than two centiles should trigger further evaluation (see Faltering growth: recognition and management of faltering growth in children [NICE guideline NG 75]).

Newborns may lose 5–10% of birth weight in the first few days of life; losses > 15% are concerning. In children, weight loss > 5–10% from baseline may be concerning.

Keywords / also known as: failure to thrive, slow weight gain, reduced weight gain, inadequate nutritional intake

Essential History

Ask about:

- Birth history including birth weight and gestation
- Detailed feeding and diet history
  - Bottle or breast fed? For formula fed infants amount and frequency, for breast fed infants duration and frequency of feeds and any problems with latching
  - When did weaning start?
- Any vomiting?
- Pattern and frequency of stools:
  - Liquid stools may indicate a small-bowel pathological condition
  - Bulky, foul-smelling stools may result from fat malabsorption
  - Mucus or blood in the stools may indicate an inflammatory condition
- Specific weight gain
  - Review growth in red book
- Detailed medical history
- Excessive exercise
- Mental health including self-harm
- Family history
  - Growth patterns of siblings
  - Immune deficiencies, neurological, or metabolic disorders
  - Any unexplained growth deficiencies in close relatives
- Social history
  - Maternal health including drugs and alcohol abuse
  - Availability of social support for the parents

  - Economic or legal circumstances that threaten family stability
  - Nature of the relationship between parents
  - Presence of affective disorders in the primary caregiver
  - Recent disruptive events in family life
  - Poverty

'Red Flag' Symptoms and Signs

Ask about:

- Excessive fluid loss
  - Vomiting
  - Diarrhoea
  - Polyuria
  - Excessive sweating
- Secondary amenorrhoea

Look for:

- Weight crossing two centile lines on growth chart
  - Can be used in those > 2 years, Body Mass Index (BMI) < 0.4th centile suggests undernutrition needing assessment and intervention (see Faltering growth: recognition and management of faltering growth in children [NICE guideline NG 75, section 1.2.4])
  - A fall off in weight centile usually exceeds and precedes any fall in height centile
  - A fall in head circumference centile usually only occurs in children with very severe failure to thrive
- Signs of abuse
  - Physical, sexual, emotional and neglect
    - See Child maltreatment: when to suspect maltreatment in under 18s [NICE clinical guideline CG89, Section 1.3]
- Signs of respiratory or cardiac disease
  - Presence of clubbing in older children
  - Heart murmurs
- Hepatomegaly / splenomegaly or palpable mass on abdominal examination
- Focal neurological signs / cranial nerve abnormalities / generalised weakness / spasticity
- Cleft palate
- Developmental delay
- Dysmorphic features (see Congenital Malformations)

Differential Diagnosis

In the majority of cases faltering growth is due to insufficient calorie intake with no serious underlying medical or social cause, and is likely to respond to dietary and feeding management.

The following are predisposing factors and causes of faltering growth:

- Conditions leading to reduced calorie intake
  - Breastfeeding difficulties
  - Parental bonding and attachment difficulties
  - Maternal depression
  - Abuse including neglect
  - Unusual parental beliefs regarding nutrition
  - Abnormal eating behaviours including anorexia and bulimia (see Appetite Loss)
- Gastro-oesophageal reflux disease (GORD)
  - See Gastro-oesophageal reflux disease in children and young people: diagnosis and management [NICE guideline NG1]
- Malabsorption
  - Coeliac disease
  - Inflammatory bowel disease
  - Disaccharide malabsorption
  - Intestinal lymphangiectasia
  - Jejunal atresia
  - Duplication cysts
  - Chronic parasitic infections
  - Non-IgE-mediated food allergies
    - See Food allergy in under 19s: assessment and diagnosis [NICE guideline CG116]
- Chronic disease
  - Chronic lung disease
  - Chronic anaemia
  - Chronic liver disease
  - Chronic kidney disease
  - Chronic infection
  - Chronic pancreatic disease
- Drugs, including:
  - Appetite suppressants, antiretrovirals, immune suppressants (eg, ciclosporin), anti-malarials (eg, atovaquone with proguanil hydrochloride Malarone(R))
- Endocrine abnormalities

- Inborn errors of metabolism
- Malignancy
- Excessive exercise
- Structural abnormalities of the oropharynx or nasopharynx
  - Cleft palate
  - Choanal atresia
  - Treacher-Collins syndrome
  - Pierre Robin syndrome
  - Laryngeal web
- Structural abnormalities of the gastrointestinal tract
  - Stenosis or atresia of the oesophagus or duodenum
  - Tracheoesophageal fistula
  - Vascular ring
  - Strictures, achalasia
  - Malrotation
  - Antral web
  - Pyloric stenosis
- Neuromuscular disorders

Investigations

To be undertaken by non-specialist practitioners (eg, General Practitioner (GP) Team) or by specialist practitioners (eg, Paediatric / Paediatric Respiratory / Paediatric Cardiology / Paediatric Nephrology Team(s)):

- If the cause of a child's growth failure remains uncertain after careful history and physical examination, a limited number of screening studies may be considered:
  - Full blood count
  - Blood pH
  - Coeliac screen
  - Urea, electrolytes, and creatinine
  - Thyroid function tests
  - Urinalysis and urine culture
  - Stool examination
    - Reducing substances
    - pH
    - Occult blood
    - Ova and parasites
- More extensive testing should be done in consultation with the relevant specialists depending on the symptoms and examination findings.

Treatment Approach

To be undertaken by non-specialist practitioners (eg, GP Team):

- In breastfed infants with inadequate weight gain, support and education are appropriate interventions (see Faltering growth: recognition and management of faltering growth in children [NICE guideline NG75, sections 1.1 and 1.4])
  - Appropriate weight gain in the following few days provides evidence that the infant is well and confirms the diagnosis of initial underfeeding
- See Gastro-oesophageal reflux disease: recognition, diagnosis and management in children and young people [NICE guideline NG1, Sections 1.2 and 1.3] for the management of gastro-oesophageal reflux disease.

To be undertaken by specialist practitioners (eg, Paediatric / Paediatric Respiratory / Paediatric Cardiology / Paediatric Nephrology Team(s)):

- Therapy should be directed towards the underlying disease or condition where a specific diagnosis has been identified
- The severity of the child's condition should dictate the initial approach to treatment
- Management usually requires the involvement of a multidisciplinary team
  - General or specialist paediatrician
  - Dietician
  - Child and Adolescent Mental Health Services (CAMHS) team if concerned about eating disorder
  - Social worker in child protection cases
- Hospital admission may be necessary for a subset of patients whose malnutrition is combined with or results from another significant medical condition
- Child protection procedures (see Child maltreatment: when to suspect maltreatment in under 18s [NICE clinical guideline CG89]) should be followed in cases of:
  - Suspected child abuse or neglect
  - Parental ill health
  - Domestic abuse

When to Refer

Most infants and children with faltering growth warrant a paediatric review. In particular, refer to specialist practitioners (eg, Paediatric / Paediatric Respiratory / Paediatric Cardiology / Paediatric Nephrology Team(s)) if:

- A diagnosis is made of a chronic disease pertaining to an organ subspecialty discipline
- Nutritional rehabilitation warrants the attention of a dietician

- If there are child protection concerns (see Child maltreatment: when to suspect maltreatment in under 18s [NICE clinical guideline CG89])
- Weight and / or height crosses two centile lines for children with birthweight 9-91st centile
- Weight crosses one centile line if birthweight was < 9th centile [NICE guideline NG75, section 1.2.1]
- Poor weight gain persists despite intensive community and dietary interventions

'Safety Netting' Advice

- Poor weight gain in infancy should be followed up assiduously
- Initial weekly visits to the clinic for infants may be necessary to reassure the parents and practitioner that the therapy undertaken is having the desired effects
- Children < 6 months old, when provided with adequate calories, begin to gain weight in a few days
- Older children may take longer than their younger counterparts before sustained weight gain is established

Patient / Carer Information

Please note: whilst these resources have been developed to a high standard they may not be specific to children.

- Unintentional weight loss (for adolescents) (Web page), the NHS website
- Breastfeeding: the first few days (Web page), the NHS website
- Growth and failure to thrive (Web page), Patient
- Eating disorders in young people – what parents need to know: information for parents, carers, and anyone who works with young people (Web page), Royal College of Psychiatrists
- Worries about weight and eating problems: information for young people (Web page), Royal College of Psychiatrists
- CR168. Junior MARSIPAN: Management of Really Sick Patients under 18 with Anorexia Nervosa (Web page), College Report, Royal College of Psychiatrists

Resources

National Clinical Guidance

Childmaltreatment: when to suspect maltreatment in under 18s (Web page), NICE clinical guideline CG89, National Institute for Health and Care Excellence

Faltering growth: recognition and management of faltering growth in children (Web page), NICE clinical guideline NG75, National Institute for Health and Care Excellence

Gastro-oesophageal reflux disease in children and young people: diagnosis and management in children and young people (Web page), NICE clinical guideline NG1, National Institute for Health and Care Excellence

Eating disorders: recognition and treatment (Web page), NICE clinical guideline NG69, National Institute for Health and Care Excellence

Early years - UK-WHO growth charts and resources (Web page), Royal College of Paediatrics and Child Health

Food allergy in under 19s: assessment and diagnosis (Web page), NICE guideline CG116, National Institute for Health and Clinical Excellence

Coeliac disease: recognition, assessment and management (Web page), NICE clinical guideline NG20, National Institute for Health and Care Excellence

Medical Decision Support

BMI Percentile Calculator for Child and Teen (Interactive tool), Centers for Disease Control and Prevention

Child Protection Companion (Website), RCPCH Child Protection Companion

Suggested Resources

Please note: these resources include links to external websites. These resources may not have national accreditation and therefore PCO UK cannot guarantee the accuracy of the content.

Cleft Palate: Examination in the Newborn (eLearning - requires log-in), RCPCH Compass

Wright CM. Identification and management of failure to thrive: a community perspective. Arch Dis Child 2000;82(1):5–9. [PubMed]

Shields B, Wacogne I, Wright CM. Weight faltering and failure to thrive in infancy and early childhood. BMJ 2012;345:e5931. [PubMed]

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