

Appetite Loss

Definition / Supporting Information

Loss of appetite (anorexia) is a common symptom in children, distinct from, but closely related to, faltering growth.

- A transient loss of appetite is often associated with acute illness
- Prolonged loss of appetite, when associated with poor weight gain or weight loss, may signify a serious or chronic illness.
- In infants, it is difficult to differentiate between loss of appetite and poor feeding
- Safeguarding issues should always be considered in the differential diagnosis of a child presenting with loss of appetite.

Keywords / also known as: anorexia

Essential History

Ask about:

- Diet of the child and family
 - What they consume and how much over an average day
 - A food diary can help produce a more detailed evaluation of a child's intake, this should include all snacks consumed.
- Calories consumed
 - Part of the adequate evaluation of nutritional intake
 - Can be calculated upon the basis of the dietary history (eg, food diary)
- Parental expectations about what the child should be consuming
- Birth, family, medical, and medication history
- For infants:
 - Contact with sick friends / family and exposure to illness
 - Gastrointestinal symptoms
 - Vomiting
 - Constipation
 - Diarrhoea
 - Abdominal distension
 - Amount, frequency, and character of stools (using the [Bristol stool chart](#))
 - Any difficulties with the effort of feeding or co-ordinating suck, swallow or chewing (see Dysphagia)

- If formula-feeding:
 - Determine how the formula is prepared (exact proportions of water to powder or concentrate)
 - Calculate total caloric intake:
 - Volume of formula x caloric density of formula
 - Standard is 20 kcal/oz or 70 kcal/100 ml
- If breastfeeding, assess:
 - Perceived adequacy of maternal milk production
 - Change in sensation of fullness after feeding
 - Ability of infant to breastfeed
 - Presence of any maternal issues such as cracked nipples, infections or medications
- For children and adolescents:
 - Intake and output
 - Whether eating leads to symptoms, such as pain, vomiting, diarrhoea, and fatigue
 - Quantity and type of stools
 - Body image, social context, and stressors
 - Consider the **SCOFF** questionnaire as a screening assessment for eating disorders:
 - Do you make yourself **S**ick because you feel uncomfortably full?
 - Do you worry you have lost **C**ontrol over how much you eat?
 - Have you recently lost more than **O**ne stone in a 3 month period?
 - Do you believe yourself to be **F**at when others say you are too thin?
 - Would you say that **F**ood dominates your life?
 - A score of 2 or more positive answers should raise the possibility of an underlying eating disorder
 - Menses in adolescent girls
 - Primary or secondary amenorrhoea
 - Possible substance abuse
 - Consider HEADSSS assessment when taking an adolescent psychosocial history:
 - Home
 - Education
 - Activities
 - Drugs
 - Sexuality
 - Suicide / Depression

- Safety

‘Red Flag’ Symptoms and Signs

Ask about:

- Prolonged loss of appetite
 - When associated with poor weight gain or **weight loss**, this may signify a serious or chronic illness
- Risk factors for emotional deprivation / child maltreatment (see When to suspect child maltreatment [[NICE clinical guideline CG89](#)])
 - Common cause of faltering growth
 - Parental risk factors include:
 - Domestic violence
 - Substance misuse
 - Stress / mental health issues
 - Poor parenting skills
 - Social isolation / lack of support
 - Lack of resources (e.g. physical deprivation / poverty)
 - Early observation of parent–infant interaction, including feeding techniques, may be helpful
- In children and adolescents:
 - Altered body image, social context, and stressors
 - Substance abuse

Look for:

- Evidence of weight loss or faltering growth
 - Weigh the patient and plot on a growth chart
 - Obtain serial weights to calculate growth
 - For breastfed infants, consider weighing infant before and after feeds
 - In children ≥ 2 years of age, calculate:
 - Body mass index
 - Body mass index percentile
 - Weight for length / height
- Abnormalities on physical examination
 - Altered mental status (see Altered Conscious Level)
 - Features suggestive of anaemia (eg, pale conjunctivae)
 - Examine oral mucosa for thrush or ulcerations
 - Oral aphthous ulcers may be related to Crohn’s disease
 - Examine nose and palate
 - Orofacial cleft and nasal obstruction may interfere with feeding

- In the neonate assess for tongue tie if there are feeding difficulties
- Abnormalities on cardiorespiratory assessment
- Hepatomegaly / splenomegaly
- Signs of malnutrition or vitamin deficiencies (eg, lanugo hair)
- Findings suggestive of genetic disorders (eg, Down's syndrome, Turner's syndrome)
- Features associated with eating disorders:
 - Hypotension
 - Bradycardia
 - Hypothermia
 - Lanugo hair
 - Discoloration of teeth or calluses on fingers
 - May be related to purging behaviours
 - Symptoms associated with the ingestion of toxins in adolescents
- Evidence of poor effort / co-ordination when feeding.

Differential Diagnosis / Conditions

Newborn period

- Possible causes of poor oral intake by an infant developmentally capable of feeding include:
 - Infection
 - Diminished appetite through decreased central drive:
 - Sepsis
 - Meningitis
 - Urinary tract infection
 - See Urinary tract infection [[NICE clinical guideline CG54](#)]
 - Congenital viral infection
 - Diminished appetite due to pain on eating:
 - Oral thrush
 - Herpangina (ulceration of mouth; usually due to virus)
 - Central nervous system disorder
 - Gastrointestinal problems
 - Gastro-oesophageal reflux
 - See Gastro-oesophageal reflux disease [[NICE guidance NG1](#)]
 - Tongue tie
 - Cow's milk protein intolerance
 - Cardiac disease (eg, heart failure, cyanotic heart disease)
 - Structural or functional craniofacial abnormality (eg, cleft palate, velopharyngeal insufficiency)

- Structural or functional gastrointestinal abnormality (eg, choanal atresia)
- Chronic kidney disease
- Metabolic or genetic problems (eg, inborn errors of metabolism, Down's syndrome, Prader–Willi syndrome)
- Endocrine disorders (eg, congenital hypothyroidism)
- Drug intoxication (see Drug Overdose and Poisoning) including:
 - Maternal substance abuse
 - Perinatal administration of opioids or magnesium

Childhood and adolescence

- Infections (acute or chronic)
- Neurological causes
 - Cerebral palsy
 - Congenital degenerative disease (eg, neurodegenerative disorders, spinomuscular atrophy, muscular dystrophy)
 - Hypothalamic lesion
 - Increased intracranial pressure, including brain tumour
- Cardiac causes
 - Heart failure
 - Cyanotic heart disease
- Gastrointestinal causes
 - Significant gastrointestinal disease commonly leads to poor appetite
 - Oral or oesophageal lesions (eg, thrush, herpes simplex, dental caries, ankyloglossia)
 - Gastro-oesophageal reflux
 - See Gastro-oesophageal reflux disease [[NICE guidance NG1](#)]
 - Eosinophilic oesophagitis
 - Dietary protein intolerance
 - Bowel obstruction, especially with gastric or intestinal distention
 - Short-bowel syndrome
 - Inflammatory bowel disease
 - Coeliac disease
 - Cystic fibrosis
 - Constipation
 - Oesophageal motility disorder (eg, cricopharyngeal dysfunction, achalasia, connective tissue disorder)
- Metabolic causes
 - Chronic kidney disease, renal tubular acidosis
 - Liver failure
 - Inborn errors of metabolism

- Lead poisoning
- Endocrine causes
 - Hypothyroidism
 - Adrenal insufficiency
 - Hyperparathyroidism
- Nutritional causes
 - Marasmus
 - Iron deficiency
 - Zinc deficiency
- Drugs such as:
 - Morphine
 - Digitalis
 - Digoxin Antimetabolites
 - Methylphenidate hydrochloride
 - Amphetamines
 - Topiramate
- Prolonged restriction of oral feeding, from the neonatal period (eg, in sick or extremely premature neonates)
 - The infant may not be interested when oral feeding is attempted
 - Mother and infant may require training, typically involving:
 - Dietician
 - Psychologist
 - And / or speech and language therapy team
 - Oral contribution to the diet should be increased gradually
- Tumour
- Chronic febrile conditions (eg, rheumatoid arthritis, rheumatic fever)
- Neurodevelopmental disorders
 - Autism spectrum disorder
 - Attention-deficit hyperactivity disorder

Psychological factors

- Emotional deprivation (see When to suspect child maltreatment [[NICE clinical guideline CG89](#)])
 - Common cause of faltering growth
 - Thorough social history is essential to the evaluation
 - Early observation of parent–infant interaction in the hospital, including feeding techniques, may be helpful
- Anxiety, fear, depression, or mania (limbic influence on the hypothalamus) may affect feeding

- Patient may avoid food if meals produce uncomfortable symptoms such as:
 - Abdominal pain
 - Nausea
 - Diarrhoea
 - Bloating
 - Urgency
 - Dumping syndrome
- Eating disorders
- Excessive weight loss and food aversion in athletes, simulating anorexia nervosa

Investigations

- Evaluation is guided by clinical suspicion
- In infants, ensure that newborn screening has been performed
- Watching a child feed, especially an infant, is a critical step in diagnosis
- If growth is poor evaluation should be systematic and extensive including:
 - Parental growth patterns
 - Mid-parental height
 - Nutrition
 - Environmental influences

To be undertaken by non-specialist practitioners (eg, GP Team) or specialist practitioners (eg, Emergency Department / General Paediatric Team(s)):

- Blood chemistry including:
 - Urea and electrolytes
 - Liver function tests
 - C-reactive protein
 - Bone profile
- Full blood count, blood film and erythrocyte sedimentation rate (ESR)
- Urine for microscopy, culture, and sensitivity

To be undertaken by specialist practitioners (eg, Emergency Department / General Paediatric / Paediatric Gastroenterology Team(s)) as guided by clinical suspicion:

- Blood / cerebrospinal fluid for:
 - Viral studies
 - Bacterial studies
- Serum studies
 - Lactate / Ammonia
 - Liver function tests (including albumin)
 - Vitamin and mineral levels (specifically zinc, calcium, vitamin D, magnesium)
 - Coeliac screen

- Immunoglobulin A (IgA)
- Serum and urine levels of:
 - Amino acids
 - Organic acids
- Therapeutic drug monitoring
- Toxin screens (eg, chronic lead exposure or acute lead intoxication) (see Toxbase [[National Poisons Information Service](#)])
- Chromosomal studies
- Specific genetic testing

Imaging

- Imaging is guided by clinical suspicion
- If growth is poor, consider assessment of bone age by:
 - Bone imaging
 - Tooth development

Diagnostic procedures

To be undertaken by specialist practitioners (eg, General Paediatric / Paediatric Gastroenterology / Paediatric Surgery Team(s)) as guided by clinical suspicion.

- Endoscopy and / or biopsy of oesophago-gastro-duodenal (OGD) system
- Colonoscopy
- Sweat chloride testing
- Oesophageal motility testing
- pH impedance probes

Treatment Approach

To be undertaken by non-specialist practitioners (eg, GP Team) or specialist practitioners (eg, General Paediatric / Paediatric Gastroenterology / Paediatric Surgery Team(s)):

- In all children, sepsis should be treated promptly if suspected as the underlying cause of the appetite loss
- Appetite assessment is based on serial evaluation of weight and food intake
- Assess parental expectations to ensure that they are realistic
 - Especially in the setting of a normal growth pattern

To be undertaken by specialist practitioners (eg, Emergency Department / General Paediatric / Paediatric Gastroenterology Team(s)):

- Treatment that improves symptoms may result in rapid improvement in oral intake
- In infants, lactation consultation as indicated where available

- Enlist the help of a dietician to plan diets and supplementation
 - Foods more acceptable to the child
 - High calorie milkshakes or snacks
 - Commercial high calorie supplements

Feeding supplementation

- Occasionally required to promote growth in some growth disorders (eg, congenital heart disease)
- Consider placement of gastric or jejeunal feeding tubes.
- Initial nasogastric or nasojejunal feeding
- Place gastrostomy tube if prolonged supplementation is required
- Parenteral nutrition
 - May be indicated in specific situations
 - Expertise and close supervision are required
 - Parents / carers need special training if parenteral nutrition is to be provided at home
- Refeeding after severe malnutrition:
 - Consider potential cardiac and metabolic complications (refeeding syndrome)
 - May require inpatient monitoring
 - Daily monitoring of electrolytes initially

See Nutrition support in adults - Oral nutrition support, enteral tube feeding and parenteral nutrition [[NICE clinical guideline CG32](#)]

When to Refer

Refer urgently to specialist practitioners (eg, Emergency Department / General Paediatric / Paediatric Gastroenterology / Paediatric Surgery Team(s)) if:

- Suspected sepsis
- Signs of shock (arrange emergency transport):
 - Tachycardia
 - Prolonged capillary refill time
 - Hypotension (N.B. this is a late, pre-terminal sign of decompensated shock)
 - Tachypnoea
 - Lethargy

Refer to specialist practitioners (eg, Emergency Department / General Paediatric / Paediatric Gastroenterology Team(s)) if:

- Loss of appetite without an obvious explanation, especially in association with weight loss or faltering growth

- Suspected eating disorder
 - Also involve child and adolescent mental health services (CAMHS)

When to Admit

- Signs of sepsis / shock
- Weight loss or lack of weight gain (see Faltering Growth) unresponsive to outpatient management
- To initiate enteral or parenteral feeding because of inadequate oral intake
- Significant metabolic derangements caused by prolonged malnutrition

‘Safety Netting’ Advice

- Prolonged loss of appetite, when associated with poor weight gain or weight loss, may signify a serious or chronic illness and should prompt parents to seek medical review
- Children with faltering growth need close monitoring of their caloric intake and weight gain
 - Inform GP and health visitor or school nurse of any concerns to arrange follow-up monitoring
 - See When to suspect child maltreatment [[NICE clinical guideline CG89](#)]

Patient / Carer Information

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

- [Eating disorders: advice for parents](#), (Web page), the NHS website
- [Breastfeeding problems](#) (Web page), the NHS website
- [Bottle feeding advice](#) (Web page), the NHS website
- [Underweight children aged 2–5](#) (Web page), the NHS website
- [Underweight children aged 6-12](#) (Web page), the NHS website

Resources

National Clinical Guidance

[When to suspect child maltreatment](#) (Web page), NICE clinical guideline CG89, National Institute for Health and Care Excellence.

[Gastro-oesophageal reflux disease in children and young people](#) (Web page) NICE clinical guideline NG1, National Institute for Health and Care Excellence.

[Urinary tract infection in children and management](#) (Web page), NICE clinical guidance CG54, National Institute for Health and Care Excellence

Medical Decision Support

[Emotional Abuse](#) (Web page), 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.***

[Multivitamin preparations for vitamin deficiency](#) (Web page), Medicines for Children

[Vitamin D Deficiency](#) (eLearning - requires log-in), RCPCH Compass

[Together for Short Lives](#) (Web site), Together for Short Lives.

[Eating disorders](#) (Web page), NICE Clinical knowledge summary, National Institute for Health and Care Excellence.

[CR168 Junior MARSIPAN: Management of Really Sick Patients under 18 with Anorexia Nervosa](#) (Web page), College Report from the Royal College of Psychiatrists.

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Kohn MR, Madden S, Clarke SD. Refeeding in anorexia nervosa: increased safety and efficiency through understanding the pathophysiology of protein calorie malnutrition. *Curr Opin Pediatr* 2011;23(4):390–394. [[PubMed](#)]

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