

Eating Disorders in Children and Adolescents

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Eating disorders are defined as those disorders in which there is excessive concern with the control of body weight and shape, accompanied by grossly inadequate, irregular or chaotic food intake. It is widely accepted that eating disorders occur in young adults and adolescents, however, a number of reports have described series of young patients with eating disorders aged from eight years upwards.^{1,2} The range of disorders in children includes selective eating, food avoidance emotional disorder, functional dysphagia and pervasive refusal syndrome.

ANOREXIA NERVOSA.

The DSM IV diagnostic criteria for anorexia nervosa are as follows:

1. Refusal to maintain body weight at or above a minimally normal weight for age and height (e.g weight loss leading to maintenance of body weight less than 85% of expected; or failure to make weight gain during growth period).
2. Intense fear of gaining weight or becoming fat, even though underweight.
3. Disturbance in the way one's body weight and shape is experienced, undue influence of body weight or shape on self evaluation, or denial of the seriousness of current low body weight.
4. Absence of at least three consecutive menstrual cycles

Subtypes:

Restricting Type:

During the current episode of anorexia nervosa, the person has not regularly indulged in binge eating or purging behaviour.

Binge-Eating/Purging Type:

During the current episode of anorexia nervosa, the person has regularly indulged in binge eating or purging behaviour.³

The above criteria are intended primarily for use with older patients and do not adequately address the problems of anorexia nervosa in children. For example, criterion D in DSM IV applies only to post-menarcheal females and states that there should be an "absence of at least three consecutive menstrual cycles". This is clearly inapplicable in this age group, where the majority are premenarcheal. Equally unhelpful is the statement that weight should be maintained at less than 85% of that

expected, for expected weight can only be calculated on the basis of height and age. Yet growth may also be impaired because of poor nutrition, so further adjustments have to be made. For these reasons, the Eating Disorders Team at Great Ormond Street Hospital for Sick Children in London, U.K, developed a more practical diagnostic criterion for early onset anorexia nervosa.⁴ The current criteria is as follows:

Great Ormond Street diagnostic criteria for early-onset Anorexia Nervosa:

1. Determined weight loss (e.g. food avoidance, self-induced vomiting, excessive exercising and abuse of laxatives).
2. Abnormal cognitions regarding weight and/or shape.
3. Morbid preoccupation with weight and/or shape.⁵

Weight loss: Since children should be growing, static weight may be regarded as equivalent to weight loss in adults. Weight loss is a real cause for concern in children, since they have lower total body-fat deposits and therefore do not have much fat to lose. One measurement for weight loss uses the Tanner-Whitehouse Standards⁶ where 100% represents the desired weight for a child's sex, age and height, and 80% or less is classed as 'wasting'.

Food avoidance: Children with anorexia nervosa give a variety of reasons for refusing food, the most common of which appears to be a fear of becoming obese. Other reasons include feelings of nausea or fullness, abdominal pain, appetite loss and difficulty swallowing.⁷

Self-induced vomiting: Fosson et al (1987) reported that at least 40% of the 48 children included in their study of early-onset anorexia nervosa were known to be vomiting at presentation.

Excessive exercising: This is not uncommon in children with anorexia nervosa. Daily exercise workouts may be a feature in these children's lives. Sometimes exercise may be carried out in secret in the privacy of the bedroom or bathroom.

Laxative abuse: This is not as common as in adult populations partly because children have less access or opportunity to obtain laxatives, but nevertheless, it still occurs.

Abnormal cognitions regarding weight and/or shape: The main beliefs are centred around body image and its distortion,

although it must be acknowledged that body image is difficult to assess reliably. Many children with anorexia nervosa will report that they consider themselves fat even when severely underweight, which is similar to the clinical observation seen in adult patients with the same condition.

Preoccupation with weight: Children with anorexia nervosa tend to be preoccupied by their own body weight and are often experts at calorie counting. This preoccupation is closely related to fear of fatness.

Physical Aspects

The majority of physical changes in anorexia nervosa are predominantly related to the effects of starvation and dehydration. This includes slow pulse rate, low blood pressure and poor circulation leading to cold hands and feet. Often there is excess fine hair especially on the back, known as 'lanugo'. Teeth may be pitted, eroded and decayed from gastric acid during vomiting.

A wide range of biochemical changes have been described in anorexia nervosa, although there is little information specifically relating to children. These include low haemoglobin and white cell count, low levels of potassium and chloride, raised liver enzymes such as alanine transaminase and alkaline phosphatase, and low levels of plasma zinc and serum iron.

A number of endocrine changes appear in anorexia nervosa and evidence suggests that this is due to the secondary effects of starvation. Changes include increased cortisol, growth hormone and cholecystokinin, and decreased luteinizing hormone, follicle stimulating hormone, oestrogen, triiodothyronine and thyroid stimulating hormone.

BULIMIA NERVOSA

The DSM IV diagnostic criteria for bulimia nervosa is as follows ⁸:

1. Recurrent episodes of binge eating e.g, eating large amounts of food in two hours, and a sense of lack of control during the episode.
2. Regular use of methods of weight control:
3. vomiting
4. laxatives
5. diuretics
6. fasting or strict diet
7. vigorous exercise.
8. Minimum average of two binges a week in three months.
9. Self-evaluation is influenced by body weight or shape.
10. The disturbance does not occur exclusively during episodes of anorexia nervosa.

Sub-types:

Purging Type: During the current episode of bulimia nervosa, the person regularly engages in self-induced vomiting or laxative misuse, diuretics or enemas.

Non-purging Type: During the current episode of bulimia nervosa, the person has used other inappropriate compensating behaviours such as fasting or excessive exercise, but not regularly used purging behaviour. ²

Self-induced vomiting can lead to complications such as fluid and electrolyte disturbance and gastro-intestinal bleeding. Other physical complications include dental erosions, enlargement of the salivary glands, and muscle weakness.

OTHER EATING DISORDERS IN CHILDREN

Food Avoidance Emotional Disorder

This term was first introduced by Higgs et al (1989)⁹, to describe a group of underweight children presenting with inadequate food intake and emotional disturbance who did not meet the criteria for anorexia nervosa.

The operational definition we use has evolved from Higgs and colleagues original description together with clinical experience and is as follows:

1. Food avoidance not accounted for by primary affective disorder.
2. Weight loss.
3. Mood disturbance not meeting criteria for primary affective disorder.
4. No abnormal cognitions regarding weight or shape.
5. No morbid preoccupation regarding weight or shape.
6. No organic brain disease or psychosis.

Selective Eating

Selective eaters are a group of children who present with very restricted eating habits in terms of the range of foods they will accept. Characteristics include:

1. Have eaten a narrow range of foods for at least 2 years.
2. Unwillingness to try new foods.
3. No abnormal cognitions regarding weight or shape.
4. No fear of choking or vomiting.
5. Weight may be low, normal or high.

Pervasive Refusal Syndrome

This term was first described by Lask et al (1991).¹⁰ The main features are:

1. Profound refusal to eat, drink, walk, talk or self-care.
2. Determined resistance to efforts to help.

Initially these children present with features fairly typical of anorexia nervosa, but the food avoidance is gradually followed by a more generalised avoidance with a marked fear response.

Functional Dysphagia

Children with this condition generally present with complaints of difficulty or pain on swallowing. Features include:

1. Food avoidance.
2. Fear of swallowing, choking or vomiting.
3. No abnormal cognitions regarding weight or shape.
4. No morbid preoccupation regarding weight or shape.
5. No organic brain disease or psychosis.

For more information on the above eating disorders in children see Lask & Bryant-Waugh (1999).⁵

INCIDENCE AND PREVALENCE

For a number of reasons, the incidence and prevalence of childhood-onset anorexia are not known. There have been no epidemiological studies which have focussed specifically on this age group and the strict diagnostic criteria used in wider epidemiological studies may lead to a substantial underestimate of the true incidence.² However studies in adolescent populations estimate the prevalence to be in the order of 0.1-0.2%^{11,12} and it is likely to be even lower in children. Although debatable, an increase in actual referral rate of anorexia nervosa in children has been reported.² Gender distribution: Five to ten percent of cases of anorexia nervosa in the adolescent and young adult population occur in males.¹³ However, in children, studies have reported that between 19 and 30% of children with anorexia nervosa have been boys.^{7,9,14,15}

At present, there is little epidemiological information on the other eating disorders in children.

MANAGEMENT AND INTERVENTIONS¹⁶

Initial assessment

Comprehensive assessment should include physical, psychological and social components. Those with low to moderate risk should be managed as an outpatient. Those who are severely emaciated, with serious risk of self harm, with severe deterioration or with poor response to treatment are deemed high risk and should be considered for inpatient treatment or urgent referral to specialist services.

Anorexia nervosa – outpatient care

Psychological interventions

Psychological interventions are the key element in the management of anorexia.

The delivery of psychological interventions should be accompanied by regular monitoring of a patient's physical state

including weight and specific indicators of increased medical risk.

- When delivering psychological treatment consider, in conjunction with the patient:
 - Cognitive analytical therapy (CAT)
 - Cognitive behaviour therapy (CBT)
 - Interpersonal psychotherapy (IPT)
 - Focal psychodynamic therapy
 - Family interventions focused explicitly on eating disorders
- Focus of treatment should be on weight gain, healthy eating, and reducing other symptoms related to eating disorders.
- Dietary counselling should not be provided as the sole treatment for anorexia nervosa.

Medication

Pharmacological interventions have a very limited evidence base for the treatment of anorexia nervosa.

- Medication is not effective as sole or primary treatment; caution should be exercised in its use for comorbid conditions such as depression or obsessive-compulsive disorder, as these may resolve with weight gain alone
- Avoid using drugs that affect the heart such as antipsychotics, tricyclic antidepressants, some antibiotics and some antihistamines.

Anorexia nervosa – inpatient care

- Body Mass Index (BMI) is a measure of weight in relation to height. Normal BMI range is 18.5-24.9. BMI below 17 is a concern and GPs should consider referral to specialist services. However, BMI below 15 is serious and inpatient care should be considered.
- Consider inpatient treatment for patients with high or moderate physical risk, who have not improved with appropriate outpatient treatment or have significant risk of suicide or severe self-harm.
- Admit to setting that can provide the skilled implementation of refeeding with careful physical monitoring (particularly in the first few days of refeeding) and in combination with psychosocial interventions
- Consider increased risk of self-harm and suicide at times of transition for patients with anorexia nervosa, especially that of the binge-purging sub-type.

Psychological treatment

- Psychological treatment is a key element of an inpatient stay, but evidence for what kind of treatment or approach to treatment is effective, is limited.
- A structured symptom-focused treatment regimen with the expectation of weight gain should be provided, with careful monitoring of the physical status during refeeding.

- Provide psychological treatment with a focus on both eating behaviour and attitudes to weight and shape, and wider psychosocial issues with the expectation of weight gain
- Do not use rigid behaviour modification programmes.

Feeding against the will of the patient

- Feeding against the will of the patient should be an intervention of last resort in care and should only be done in the context of the Mental Health Act 1983 or Children Act 1989.

Post-hospitalisation treatment in adults

- Following discharge, extend the duration of psychological treatment over that normally provided to those who have not been hospitalised, typically for at least 12 months.
- Offer outpatient psychological treatment that focuses on both eating behaviour and attitudes to weight and shape, and on wider psychosocial issues, with regular monitoring of both physical and psychological risk.

Anorexia nervosa –physical management

Anorexia nervosa carries considerable risk of serious physical morbidity. Awareness of the risk, careful monitoring and, where appropriate, close liaison with an experienced physician, are important in the management of the physical complications of anorexia nervosa.

Managing weight gain

- Aim for an average weekly weight gain of 0.5–1 kg in inpatient settings and 0.5 kg in outpatient settings. This requires about 3500 to 7000 extra calories a week
- Provide regular physical monitoring and consider multivitamin/multimineral supplementation in oral form for both inpatients and outpatients.
- Total parenteral nutrition should not be used unless there is significant gastrointestinal dysfunction.

Managing risk

- Inform patients and their carers if the risk to their physical health is high
- Involve a physician or paediatrician with expertise in the treatment of medically at-risk patients for all individuals who are at risk medically.
- Consider more intensive prenatal care for pregnant women to ensure adequate prenatal nutrition and fetal development.
- Oestrogen administration should not be used to treat bone-density problems in children and adolescents as this may lead to premature fusion of the epiphyses.
- Healthcare professionals should advise people with eating disorders and osteoporosis or related bone disorders to refrain from physical activity that significantly increases the likelihood of falls.

Additional considerations for children and adolescents

The involvement of families and other carers is particularly important.

The right to confidentiality of children and adolescents with eating disorders should be respected.

Family members, including siblings, should normally be included in the treatment of children and adolescents with eating disorders. Interventions may include sharing of information, advice on behavioural management and facilitating communication.

Anorexia nervosa

- Family interventions that directly address the eating disorders should be offered to children and adolescents with anorexia nervosa.
- Offer children and adolescents individual appointments with a health professional separate from those with their family members or carers.
- For children and adolescents, once a healthy weight is reached, ensure increased energy and necessary nutrients are available in the diet to support growth and development.
- Involve carers of children and adolescents in any dietary education or meal planning.

Inpatient care of children and adolescents with anorexia nervosa

- Inpatient care of children and adolescents should be within age-appropriate facilities (with the potential for separate children and adolescent services), which have the capacity to provide appropriate educational and related activities. They should also balance the need for treatment and urgent weight restoration with the educational and social needs of the young person.
- Consider using the Mental Health Act 1983 or the right of those with parental responsibility to override the young person's refusal to receive treatment that is deemed essential.
- Seek legal advice and consider proceedings under the Children Act 1989 if the patient and those with parental responsibility refuse treatment where treatment is deemed essential.

Bulimia nervosa

Following the initial assessment consider:

- As a possible first step, an evidence-based self-help programme – direct encouragement and support to patients undertaking such a programme may improve outcomes. This may be sufficient treatment for a limited subset of patients.

Psychological treatment should form the key element of treatment, so consider:

- For adolescents: Cognitive behavioural therapy for bulimia nervosa (CBT-BN) adapted as needed to suit their age, circumstances and level of development.
- Where there has been no response to CBT or it has been declined: other psychological treatments, particularly interpersonal psychotherapy (IPT). (Note: patients should be informed that IPT takes 8–12 months to achieve results comparable with CBT-BN).

Medication may have a role

- Consider a trial of an antidepressant drug as an alternative or additional first step to using an evidence-based self-help programme.
- In terms of tolerability and reduction of symptoms, SSRIs (specifically fluoxetine) are the drug of first choice for the treatment of bulimia nervosa.
- The effective dose of fluoxetine may be higher than for depression.
- Beneficial effects will be rapidly apparent and are likely to reduce the frequency of binge eating and purging, but the long-term effects are unknown.
- No drugs, other than antidepressants, are recommended for the treatment of bulimia nervosa.

Physical management

- Assess fluid and electrolyte balance where vomiting is frequent or there is frequent use of laxatives.
- If electrolyte balance is disturbed, consider behavioural management as the first option
- If supplementation is required, use oral rather than intravenous preparations.

Bulimia nervosa – inpatient or day care

- Consider inpatient treatment for patients with risk of suicide or severe self-harm.
- Admit patients to a setting with experience of managing this disorder.

PROGNOSIS¹⁷

If untreated, anorexia nervosa carries high mortality rates of

10-15%. If treated, one third have full recovery, one third partial recovery and one third have chronic problems. Poor prognostic factors for anorexia nervosa include: chronic illness, late age of onset, bulimic features such as vomiting and purging, anxiety when eating with others, excessive weight loss, poor childhood social adjustment, poor parental relationships and male sex.

Prognosis for Bulimia nervosa is generally good, unless there are significant issues of low self esteem or evidence of severe personality disorder.

USEFUL RESOURCES

National Eating Disorder Association

Tel: 0800 931 2237

Website: www.nationaleatingdisorders.org

Royal College of Psychiatrists

17 Belgrave Square

London SW1X 8PG

Tel: 0171 235 2351

Website: www.rcpsych.ac.uk

Competing Interests

None declared

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