Eating disorders in children and adolescents

Dasha Nicholls

The eating disorders of childhood and adolescence lie in the murky waters between those of adulthood anorexia nervosa and bulimia nervosa, and the feeding disorders of childhood. Early-onset eating disorders include anorexia nervosa, on which this article will focus. The younger the patient, however, the more likely he or she is to present an 'atypical' picture. Anorexia nervosa and bulimia nervosa have been previously addressed in this journal, by Palmer (1996) and Fairburn (1997). With older adolescents, ideas relevant to adult patients will be appropriate at times. Nevertheless, developmental issues should be borne in mind.

Children and adolescents, quite rightly, place the burden of responsibility for their care on adults. This is true in terms of nutritional and emotional care. While DSM–IV (American Psychiatric Association, 1994) and ICD–10 (World Health Organization, 1992) make a distinction between feeding disorders and eating disorders, the point at which the responsibility for food intake changes from parent to child is one of the central issues for negotiation. Some children will try, and succeed, in controlling their intake from an early age, while others do so only in the context of illness.

Box 1. The spectrum of eating disorders in childhood and early adolescence

Early-onset anorexia nervosa
Bulimia nervosa
Food avoidance emotional disorder (FAED)
Selective eating
Pervasive refusal syndrome

The focus of this paper is management. Working definitions are required, however, and one useful way of conceptualising an eating disorder of childhood is as one "in which there is an excessive preoccupation with weight or shape, and/or food intake, and accompanied by grossly inadequate, irregular or chaotic food intake" (Bryant-Waugh & Lask, 1995).

The spectrum of early-onset eating difficulties

The range of early-onset eating disorders, where one or all of the physical, psychological or social domains is affected, are shown in Box 1 (Bryant-Waugh, 1999).

Each will be considered in turn, since the clinical characteristics and approach to treatment differ. In addition to these broad categories, a number of other eating difficulties are recognised. 'Functional dysphagia' is difficulty swallowing, associated with a fear of choking. This symptom is found clinically in patients with food avoidance emotional disorder (FAED), selective eating and sometimes anorexia nervosa. It is also found as a new symptom of acute onset, often following trauma. The validity of functional dysphagia as a separate diagnostic category needs clarification. Failure to thrive should be considered when long-term growth failure is seen in association with low weight, extending back to early childhood.

Eating difficulties can be part of other disorders such as depression, obsessive–compulsive disorder and pervasive developmental disorders. In addition, physical illness may often be associated with

manifest loss of appetite, to which psychological factors can significantly contribute. We have come to use the term FAED when food avoidance is marked and merits treatment intervention in its own right. When comorbid disorders exist, either psychological or physical, they need to be addressed in addition to the eating difficulty.

Early-onset obesity and hyperphagic short stature have not traditionally been considered with the eating disorders, but also present with marked abnormalities of eating. They are not considered further here.

A simplified diagnostic algorithm is given after the subtypes have been discussed.

Management and treatment

Anorexia nervosa

Responsibility

Anorexia nervosa (for definition see Box 2) remains the psychiatric disorder with the highest mortality, and can create enormous anxiety and conflict in personal and professional relationships. The 'brokerage of responsibility' (Palmer, 1996) is central to the treatment of anorexia nervosa, and Palmer discusses this in relation to adult patients. With children the issue is further complicated by age, and the difficulty of determining to what extent the child/adolescent can be considered both competent and well enough to make decisions about treatment. Responsibility for recovery can be seen to lie with the child, the parents or the doctor. When the doctor takes charge this allows the parents and child to be relieved of the anxiety. The chances are increased of parents colluding with the anorectic child, in a fight against the doctor. The doctor taking charge not only relieves the child of internal conflicts, but can reinforce the parents' sense of failure.

For this reason, parents should be helped to take responsibility, unless the age of the child, or urgency, suggests otherwise. This means establishing parental control of food and fluid intake. The child is encouraged to negotiate the 'how' of food intake, but not the 'whether'. For example, children may like mother to sit with them during meals, and hold their hand. Alternatively they may prefer for food not to be discussed at meal times, and any extra calories are made up in drink form at the end of the day. Whatever approach is taken, it should be applied consistently between the parents, even if the parental couple are no longer living together. Once control of eating is established other areas where the child can develop or regain control are negotiated.

In adolescence, or when the illness is long-standing, it may be appropriate for more responsibility to lie with the patient. Techniques such as motivational interviewing (Treasure & Ward, 1997) can be used to engage the patient in the idea of change, although these have yet to be adapted for use in younger children.

Hospitalisation

The reasons hospitalisation is most commonly advised are listed in Box 3. The need to admit may require reconsideration at any stage of treatment and close review is necessary until the patient has stabilised. Admission to a paediatric ward for primarily medical reasons tends to work successfully only if skilled psychiatric care is also available. There is increasing popularity for day programmes to replace the need for hospitalisation. The efficacy of these for children and more severe cases has yet to be fully evaluated.

Feeding via nasogastric tube or other method should be considered in children who are unable to tolerate oral re-feeding for physical or emotional reasons. Parental consent for this is essential.

Irreconcilable differences can occur between professionals, parents and the child about the need for treatment, most commonly hospitalisation. When a child is under the age of 18 and living at home, it is almost always more appropriate to evoke the

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Box 2.   Childhood-onset anorexia nervosa

Great Ormond Street Hospital definition:
Determined weight loss (e.g. food avoidance, self-induced vomiting, excessive exercising, abuse of laxatives)
Abnormal cognitions about weight and/or shape
Morbid preoccupation with weight and/or shape

Box 3.   Reasons for hospitalisation

Weight loss of more than 25%
Dehydration
Signs of circulatory failure, such a slow pulse, low blood pressure, or poor peripheral circulation
Persistent vomiting or vomiting blood
Severe depression or suicidal behaviour
Failure to progress in out-patient treatment

powers available under the Children Act 1989 than under the Mental Health Act 1983. One of many reasons for this preference is the continued parental responsibility intrinsic to the Children Act.

Target weight

Patients with anorexia nervosa make every attempt to pin down professionals to a target weight. The clinician's target is for normal growth and development to be restored. Height will change during recovery, and thus the target weight range will also change. Weight for height is the most obvious short-term indicator. Lai *et al* (1994) found that menses resumed at an average of 96% weight for height, but there was considerable variation around this. Pelvic ultrasound scan can show whether uterine size and ovarian maturation has progressed. Height velocity in growing children should return to normal (or be greater) on recovery. If pelvic ultrasound is not available, then a target weight range of 95–100% weight for height is recommended. Weight recovery tends to occur at a rate of about 2–3 kg per month.

Physical aspects

Effects in adults known to be reversible with weight gain may be irreversible in children. Differences in size and body composition put children at greater risk for certain aspects of acute and chronic starvation. Prepubertal children become emaciated more quickly because of the relative deficiency of body fat (Irwin, 1984), and they dehydrate more quickly than adults. Important aspects of physical assessment are shown in Fig 1.

Height and weight are plotted on standard growth charts for comparison to population norms and parental heights (Freeman *et al*, 1995). Previous information about the child's growth will give a more complete picture. The 'growth spurt' in girls occurs at age 12±1.8 years. Thereafter growth slows down and stature is only likely to be affected in prepubertal or early pubertal (premenarchal) onset. Body mass index (BMI) is not a linear constant in childhood (Cole *et al*, 1995), and calculation of the weight to height ratio is a better indicator of weight deficits (Cole *et al*, 1981). Alternatively a BMI
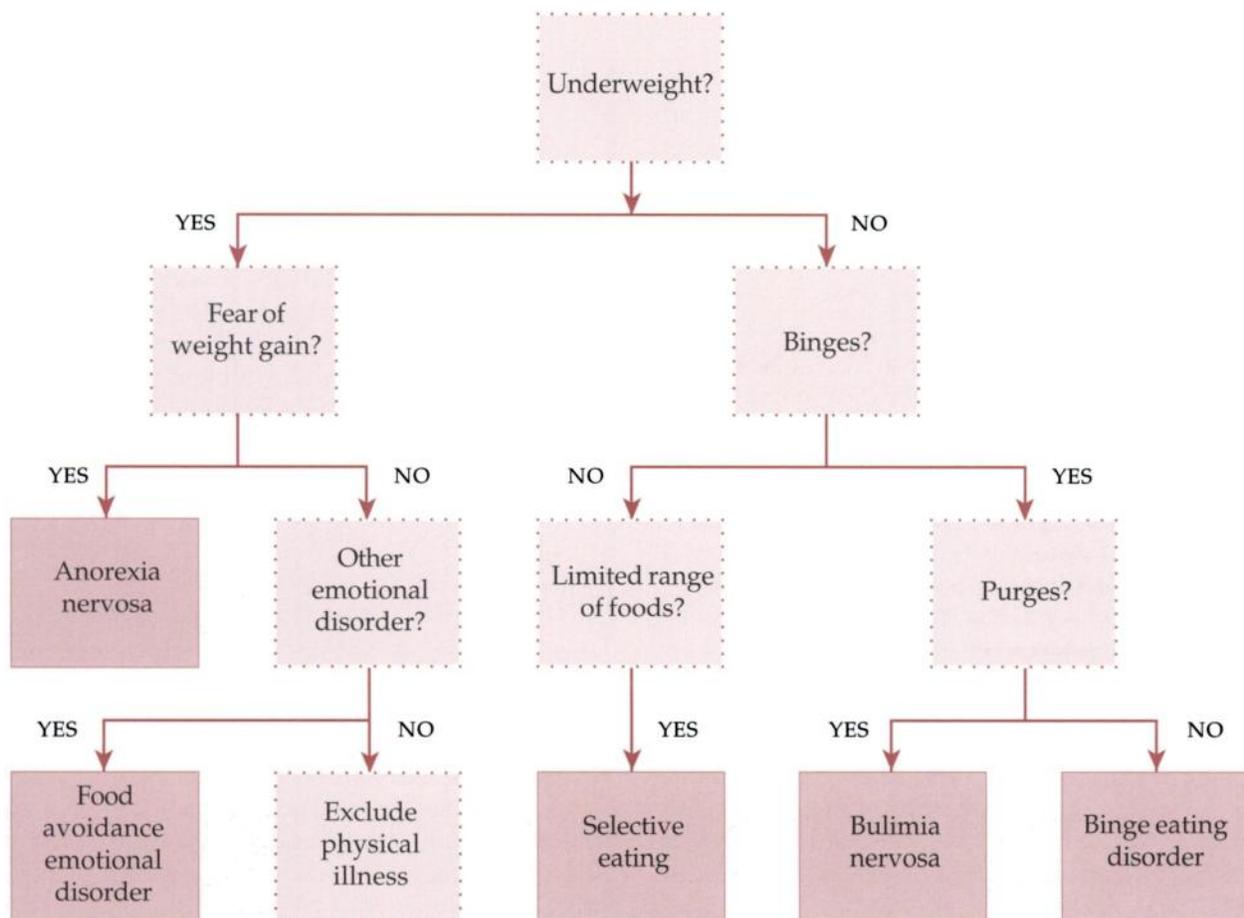
Fig. 1   Simplified diagnostic decision tree

standard deviation (s.d.) score or centile can be calculated (normal range ±2 s.d.). A Cole's slide rule or a BMI chart can be used for this (further information may be obtained about these from the Child Growth Foundation, 2 Mayfield Avenue, Chiswick, London W4 1PW). Clinically however, rate of weight loss may be more important than either BMI standard deviation score or weight for height alone.

Distinction should be made between those children who are appropriately prepubertal and those in whom the onset of puberty has been delayed. Significant delay is usually defined as more than 2 s.d. from the mean. Menses are deemed to be delayed if there is failure of onset within 4.5 years of the start of puberty, or by chronological or bone age of 14 years. Onset of anorexia nervosa during puberty will result in pubertal arrest. Tanner staging, pelvic ultrasound appearances, and discrepancy between bone age and the chronological age of the patient can help in evaluating the degree of pubertal delay. Chronic physical illness or genetic factors resulting in pubertal delay need to be taken into account.

Osteoporosis is an established risk in adults with anorexia nervosa. In younger patients the problem of bone loss is compounded by failure of bone accretion. Nutritional rehabilitation remains the treatment of choice for low bone density in childhood. Calcium supplementation can be considered, although it is likely to have limited value in an underweight child. Oestrogen should not be considered without consulting a growth specialist, because of the risks of stunting from premature epiphyseal fusion.

Family therapy and parental counselling

Family therapy and parental counselling have been shown to be equally effective (le Grange *et al*, 1992). A family approach may be appropriate from the start, particularly if the child is able to articulate her views or demonstrate her conflicts with family members. If not, futile arguments with the 'anorectic voice' can result. Eventually, family meetings allow the emerging child or adolescent to test out areas other than food for negotiation. The views and assistance of siblings may be sought, or their needs addressed by seeing the whole family.

Parental counselling provides support and advice. The focus is on management of eating in the home setting, particularly addressing areas of difference in approach, and strengthening the parental dyad. Techniques parents choose are a matter of individual variation. In addition to affirming the 'parents in charge', parents can explore issues they may be reluctant to discuss in front of their child, such as a when one partner undermines the other's attempts to be firm, or when one parent needs to ask directly for greater support from the other.

Group therapy

Group therapy is an established part of most treatment programmes for adolescents with eating disorders, the focus usually being on the development of self-esteem. Groups for younger children are less well-established. The provision of unstructured time for children to explore peer relationships and to develop freedom of expression can be infinitely more accessible and acceptable to the child than individual therapy, in which a child can feel persecuted.

A parents' group can address issues such as coping with rejection, and allow parents to hear from other parents what can be hard to hear from professionals (Nicholls & Magagna, 1997).

Individual therapy

The place of individual therapy for older adolescents and those with long-standing illness has been underlined by Russell *et al* (1987). For younger children the role of individual therapy and the therapeutic style adopted depends on a number of issues, not least the availability of skilled therapists. The nutritional state of the child, as well as cognitive and emotional development stages are important in assessing suitability. Parental support for the therapy is crucial. The focus of work may be to encourage the child to address issues more directly with her parents by rehearsing with the therapist. Individual work should also be considered if family therapy is proving unsuccessful. In such circumstances previously undisclosed abuse may emerge.

Other specific indications for individual work include treatment for concurrent depression, obsessive–compulsive disorder or specific anxieties, such as fear of swallowing or choking. Here, age-appropriate cognitive–behavioural therapy would be the treatment of choice.

Bulimia nervosa

Bulimia nervosa (for definition see Box 4) is rare in the premenarchal age group. When it does occur (usually around age 13 or 14 and almost exclusively in girls) the features are fairly typical. Purging with laxatives and other medications is less common in the younger age group, and secretiveness may be more prominent, since most adolescents continue to be under some sort of parental surveillance. As in adulthood, comorbid depression is often present, and is more likely to be the reason in-patient treatment is indicated than the eating behaviour itself.

Box 4. Bulimia nervosa

Recurrent binges and purges
Sense of lack of control
Morbid preoccupation with weight and
   shape

Most patients with bulimia nervosa will be of normal weight. If they are underweight they are more likely correctly diagnosed as type II anorexia nervosa. However, the physical aspects of bulimia nervosa should not be overlooked. Irregular menses is a common feature, and may have an impact on bone density. The most serious medical concern is potassium depletion as a result of frequent vomiting. Serum potassium is a poor reflection of the body's potassium stores and clinical judgement may be more valuable in deciding whether purging is occurring at a life-threatening level.

Bulimia nervosa is pervaded by a sense of chaos, and the first role of the clinician is to establish clear structures and boundaries. The adolescent's behaviour may seem to demand constant super-vision, accompaniment to the toilet, supervision after meals, and monitoring at school. On the other hand, the adolescent may experience parents as intrusive and become more secretive. Individual therapy can provide structure, containment, and privacy for the adolescent, while family work can focus on helping parents negotiate boundaries with their offspring. For example, parents may decide that the adolescent eats three meals a day with the rest of the family, but agree not to accompany him or her to the toilet unless requested to do so. Within this framework, adolescents can start to address their own issues in relation to food as outlined by Fairburn (1997), with adaptation for age where appropriate.

Food avoidance emotional disorder

This term has been used to describe those children who avoid food for reasons other than fear of weight gain (for definition see Box 5). A child may give any number of reasons for not eating enough: fear of being sick; fear of food contamination; fear of choking, swallowing or vomiting; "not hungry"; "can't eat"; "hurts my tummy", etc. Comorbid obsessive–compulsive disorder or depression may be present, but often the food avoidance exists as an isolated symptom.

Children with FAED may be as severely physically compromised as those with anorexia nervosa. In physical terms, the main differences between patients with FAED and those with early-onset anorexia nervosa are in the age of presentation (mean 11.8 *v.* 13.5 years) and in the gender ratio (approximately 2:1 girls to boys for FAED compared to 9:1 in anorexia nervosa) (further details available from the author upon request).

Psychologically, the differences are more marked. Unlike anorexia nervosa patients, children with FAED know that they are underweight, would like to be heavier, and may not know why they find this difficult to achieve. They are more likely to have other medically unexplained symptoms, and their parents often attribute weight loss to undiagnosed physical disorder. Addressing these concerns with a comprehensive physical assessment and an open mind is essential if a therapeutic alliance is to be successfully achieved.

The anxiety related to eating can be as marked in FAED as in anorexia nervosa. Treatment may be about finding alternative ways of naming and identifying feelings for the child. Work with parents is to support the child in his/her rehabilitation, much the same as for a somatisation disorder. It is likely that children with FAED are a heterogeneous group, a minority of whom will later develop anorexia nervosa. Further work is in progress to validate the subtypes of eating difficulties in this age group.

Selective eating

'Faddy eating' occurs in over 20% of toddlers (Richman & Lansdown, 1988), and can be considered normal at a particular developmental stage. In a small number, particularly boys, the behaviour persists into middle childhood and adolescence. This has been termed 'selective eating' (Bryant-Waugh, 1999) (see definition in Box 6).

A highly limited range of foods (generally 10 foods or less) seems to have no impact on growth

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Box 5. Food avoidance emotional disorder

Food avoidance not accounted for by primary
   affective disorder
Weight loss
Mood disturbance not meeting criteria for
   primary affective disorder
No abnormal cognitions about weight or
   shape
No morbid preoccupation about weight or
   shape
No organic brain disease or psychosis

Box 6.   Selective eating

Narrow range of foods for at least 2 years
Unwillingness to try new foods
No abnormal cognitions regarding weight or
      shape
No fear of choking or vomiting
Weight may be low, normal or high

and development. Reassurance that the child is not doing him/herself any damage may be all that is required. However, particularly with approaching adolescence, children may find themselves socially disadvantaged by their eating, unable to go away on school trips or stay over at friends' houses. Alternatively, a parent may seek treatment anticipating social difficulties, while the child remains unconcerned.

For those children who are ready to change, a cognitive–behavioural model based on age-appropriate food records, relaxation, and reward, led by the child, can be rapidly effective. Over the years, the child has developed an avoidance-reinforced anxiety associated with new foods. This may be anticipatory nausea (with sight or smell triggers), fear of vomiting (textures), or a fear of choking. Early in treatment, as new foods are faced, symptoms will occur. If the child is not committed to change at this stage, the anxiety will result in avoidance again. Without additional help the selective eater may be unable to broaden his/her food repertoire alone. Suggesting he or she returns at a later date may be appropriate if the child is not yet ready for treatment.

Pervasive refusal syndrome

Defined as "a profound and pervasive refusal to eat, walk, talk or engage in self care" (Lask *et al*, 1991) (see Box 7). This rare condition has been conceptualised as both an extreme post-traumatic stress reaction in cases of evident or suspected abuse (Lask *et al*, 1991), and as a form of learned helplessness (Nunn & Thompson, 1996). In terms

Box 7.   Pervasive refusal syndrome

Profound refusal to eat, drink, walk, talk or
      self-care
Determined resistance to efforts to help
No organic brain disease or psychosis

of treatment, an age-appropriate psychiatric unit is necessary, and length of stay is likely to be for several months to one year. Both concepts of the illness are helpful when considering a treatment approach, aimed at improving the child's ability to help him- or herself and giving voice to the child, from his or her recumbent and silent position. Nunn & Thompson (1996) have described one approach in detail.

Overview of treatment issues

Whatever the eating disorder, the child's needs are essentially the same – to be able to eat enough to grow and develop normally, and to find a way of addressing her/his emotional needs through a medium other than food. Barring exceptional circumstances, the emphasis for treatment is on ensuring that the child's context is one in which she/he can thrive.

Comprehensive approach

A multi-disciplinary approach is essential. Debate continues over which to tackle first: the eating behaviour or the emotional symptoms. A similar debate exists for the sufferer – "the problem isn't really about eating" versus "I can't bear to eat". In young patients, parents may focus on eating behaviour while the child/adolescent has another agenda. The main concern is that both agendas are addressed.

In childhood, food-related issues are usually addressed first for a number of reasons. Children can dehydrate and physically decompensate very quickly. Responsibility for food intake will often lie with the parents, and can therefore be established more quickly than when the patient's ambivalence needs to be overcome. The risks of growth failure, pubertal arrest, and failure of bone accretion can have significant impact in as little as six months.

Therapeutic models

While a few advocate a medical/illness model (Bergh & Sodersten, 1998), most adopt an approach that includes close family involvement. Controlled treatment trials in anorexia nervosa have shown that for patients under the age of 18 with an illness of less than three years' duration, family work was more effective at one year (Russell *et al*, 1987) and five years (Eisler *et al*, 1997) than individual therapy alone. The nature of family work has changed

considerably over the years, as have assumptions about the role of the family in aetiology. There is no empirical evidence to suggest that families cause eating disorders, although there is no doubt that family functioning can be severely distorted. Lask (1993) advocates a structural model for the treatment of childhood-onset anorexia nervosa, with parents clearly in charge, but with externalisation of the anorexia (White, 1989). This involves conceptualising the 'anorectic minx' as an entity provoking the child and family. The child, family and professionals are united in their struggle to disempower and banish the minx. No specific family therapy techniques have been described for the treatment of the 'atypical' eating disorders.

Behavioural techniques have a role in changing concrete, measurable aspects of behaviour, but have little impact on thoughts, beliefs and feelings. They are not much use in isolation, and at worst can be punitive. Despite this, they continue to form the basis of treatment on some wards. Cognitive–behavioural techniques, however, are the mainstay of treatment for selective eating and bulimia nervosa, and can be adapted for use in anorexia nervosa and FAED. Despite advances in cognitive–behavioural techniques in children, there has been very little written about their use in eating disorders. Psychodynamic models undoubtedly have their place, although again there is little empirical evidence for their effectiveness.

Individual therapy is based on a few simple rules. For children it should only occur in conjunction with parental or family work, as the burden for change should not rest only with the child. Parents need to support and respect the confidentiality of the sessions. The therapist is accountable to the parents for the work being done, usually through periodic reviews or feedback.

Within this framework, the 'therapeutic tool box' should be varied and flexible, depending on the age, development stage and degree of cooperation of the child. It is not helpful to sit in prolonged silence with a child who is unwilling or unable to engage in any communication. For a more detailed account of some of the therapeutic techniques of use in children with eating disorders, see Christie (1999) and Magagna (1999). Ideas include age-appropriate diaries, the use of games such as *All About Me* (Hemmings, 1991), and 'worry bags' (Binnay & Wright, 1997).

Help for parents

Mistrust of professionals and self-blame are common for parents. They may have been told explicitly that they are to blame, or have developed a sense of failure while attempting to overcome their child's difficulties. Clear information, both in the form of literature and specifically about their own child's difficulties, can help in establishing trust (see Box 8).

Sometimes parents may have developed a rejecting stance to their child or may have seen the eating behaviour as a personal attack (indeed, their child may see it in that way too). Except where parental abuse is evident, it is unhelpful to the child or parents to conceptualise eating disorders in this way. Helping parents to bear the illness and the rejection that goes with it, without rejecting their child, is essential.

Engaging parents means agreeing an understanding and frame of reference. Within this the parents' needs must be addressed in a way that does not enhance their sense of guilt but does reinforce their responsibility. Sometimes parents cannot accept help for themselves from the treating team. When this appears to be compromising the child's welfare, the team can clearly outline what needs to happen for the child to get better, and over what period of time. A network meeting is a useful context for recording these targets and reviewing achievements. Parents can then choose how to achieve the goals using their own resources.

Medication

The use of medication in the treatment of childhood-onset eating disorders is limited. Major tranquillisers are rarely indicated. Antidepressants should be considered in patients who are clearly suffering from depression or obsessive–compulsive disorder. The use of selective serotonin reuptake inhibitors is of proven efficacy in patients with bulimia nervosa, and should be considered in adolescents. Controlled trials in children have not been performed, largely

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Box 8.   Helping parents

Engaging parents is as important as engaging the child

Parents tend to blame themselves for their child's eating problems

Clinicians should avoid taking over parental responsibility

Helping parents means reducing self-blame, while enhancing responsibility and ability to help themselves

Seeing parents separately is as effective as family therapy

for ethical reasons, but medication can be considered as an adjunct to other therapies, particularly when it could enhance the capacity of the child to make use of other therapy. For example, alprazolam may be a useful adjunct in the treatment of functional dysphagia (Atkins *et al*, 1994). Medication should never be used in the absence of other treatments.

Schooling

Where possible, parents should be encouraged to address issues directly with the school on behalf of their child. Close liaison with school professionals, and assessment of special educational needs is particularly important for children returning to school after in-patient admission.

It is commonly believed that patients with anorexia nervosa are intellectually high-functioning. Patients have often managed to sustain academic excellence at school despite severe malnourishment. This is often at the expense of long additional hours of work and compromise of friendships. The interruption that treatment will present to school work is a cause for concern to the child, parent and school. Unrealistic expectations can come from parents, but often come from the child's attempts to maintain approval and self-esteem.

Outcome

For anorexia nervosa, only a few studies have reported long-term follow-up in younger patients only, although many studies include some young patients (Steinhausen, 1997). Two studies have suggested that onset before the age of 11 years is a poor prognostic factor (Walford & McCune, 1991; Bryant-Waugh *et al*, 1988). Overall, outcome in childhood-onset anorexia nervosa is roughly equivalent to that in later-onset disorders.

For FAED, Higgs *et al* (1989) found an outcome intermediate between anorexia nervosa and emotional disorder alone. However, their definition of FAED included a wide clinical spectrum, including those disorders where weight loss was not a marked feature.

For selective eating, in our sample of 20 children, six months to three years after assessment, only those who had had specific intervention had improved their range of foods (further details available from the author upon request). Whether these children are representative of all selective eaters of the same age is not known.

Conclusion

Eating disorders with onset during childhood, although sharing many common features with later-onset disorders, need to be considered separately from the point of view of recognition, consequences and management.

The principle of care is a comprehensive, multi-disciplinary approach, with close collaboration with parents.

The consequences of failing to treat at an early stage, particularly in terms of physical sequelae, must be emphasised.

There are still many areas where knowledge is lacking, particularly from the point of view of psychological development and cognitive functioning.

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Multiple choice questions

1. The eating disorders of childhood and adolescence:
   a include anorexia nervosa and bulimia nervosa
   b cause family conflict
   c are best treated by behaviour therapy
   d can cause growth failure
   e require a multi-disciplinary approach to treatment.

2. Early-onset anorexia nervosa:
   a primarily involves individual therapy for the child
   b never involves individual therapy for the child
   c is best managed by in-patient admission
   d can occur in prepubertal children
   e affects school performance.

3. Regarding the physical aspects of childhood-onset anorexia nervosa:
   a weight gain is the best way of assessing recovery
   b osteoporosis does not occur in children
   c pubertal delay or arrest is common
   d pelvic ultrasound is useful in assessing recovery
   e BMI is the best measure of weight loss.

4. Bulimia nervosa:
   a usually occurs in girls over the age of 13
   b does not have serious physical consequences
   c is associated with depression
   d responds to selective serotonin reuptake inhibitors alone
   e does not require family involvement in treatment.

5. Food avoidance emotional disorder:
   a usually occurs in younger children than anorexia nervosa
   b is more common in boys than girls
   c does not have a severe impact on physical health
   d is associated with a morbid fear of weight gain
   e is associated with medically unexplained symptoms.

MCQ answers				
1	**2**	**3**	**4**	**5**
a T	a F	a T	a T	a T
b T	b F	b F	b F	b F
c F	c F	c T	c T	c F
d T	d T	d T	d F	d F
e T	e T	e F	e F	e T