

EATING DISORDERS

2016 Edition

Phillipa Hay & Jane Morris



Gluttony - *The Seven Deadly Sins and the Four Last Things*. Hieronymus Bosch.
Prado Museum, Madrid

Phillipa Hay DPhil, MD,
FRANZCP

Chair of Mental Health and
Consultant Psychiatrist,
Western Sydney University,
Campbelltown, NSW, Australia

Conflict of interest: none
declared

Jane Morris MA, MB, BChir
(Cantab), MRCPsych

Consultant Psychiatrist, Eden
Unit, Royal Cornhill Hospital,
Aberdeen, Scotland, UK

Conflict of interest: none
declared

This is the updated version
by Phillipa Hay of the chapter
written in 2012 by Jane Morris

Acknowledgement: art work
was provided by patients in the
EDGE Young People's group.

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Suggested citation: Hay P, Morris J. Eating disorders. In Rey JM (ed), *IACAPAP e-Textbook of Child and Adolescent Mental Health*. Geneva: International Association for Child and Adolescent Psychiatry and Allied Professions 2016.

This chapter will focus on the three main feeding and eating disorders, anorexia nervosa, bulimia nervosa and to a lesser extent binge eating disorder. Anorexia and bulimia nervosa are two of the most common and severe psychiatric disorders of adolescence, characterized by the obsessive drive to lose weight. Other disorders – often described as “feeding disorders” and seen more often in younger children – are considered here largely in terms of differential diagnosis. Some of these disorders, such as avoidant restrictive food intake disorder or ARFID, share the psychological sequelae of weight loss and may evolve into secondary anorexia or bulimia if the obsession with thin body image develops. This is particularly likely in westernized cultures. Childhood obesity is not specifically addressed here, although a variety of psychological difficulties may be associated with its origins and consequences.

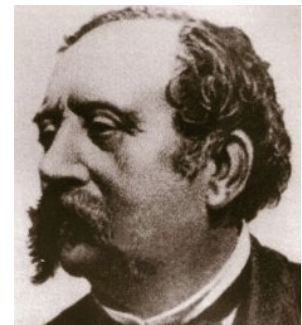
In what follows, the term “parent” is used to mean parents, guardians and careers, while “child” is used to mean both children and adolescents unless otherwise specified. Sometimes the child is referred to as “she” since the majority of sufferers are female, but both genders are included. We speak deliberately of “parents” rather than just “mothers”, since family carers of both genders can provide important contributions to recovery. Sometimes the term “adults” is used, indicating that professionals – doctors, nurses and other therapists – are included in the comment.

HISTORICAL BACKGROUND

Anorexia nervosa is a syndrome of obsessional fear of weight gain, manifest in a range of compulsive weight-losing behaviours. It has been recognised for many centuries, in all societies, even where cultural preference is for a well-fed appearance. It is believed that some of the medieval christian female saints, such as St Catherine of Sienna, suffered from anorexia nervosa, whilst Richard Morton famously described two cases in a paper of 1689. By the late 19th century there was competition between the English physician William Gull (1874) and the French Lasègue, both claiming to have been the first to describe the condition. While experts still disagree, it would appear that it was Lasègue (1873) who gave the condition its enduring name “anorexia” in his paper *De L'Anorexie Hystérique*.



The English physician William Gull (1816-1890) and the French Ernest-Charles Lasègue (1816-1883) (below) are considered to have been the first to describe almost simultaneously (in 1873) and independently what we now call anorexia nervosa



Feeding/eating problems in children and their key characteristics

- Failure to thrive: physical or social causes
- Selective eating: extreme faddiness
- Restrictive eating: child has small appetite and eats a normal range of food but in small amounts
- Functional dysphagia: fear of choking or vomiting—certain foods avoided
- Food refusal: refusal to eat rather than searching for thinness
- Pervasive refusal syndrome: not only food is refused but also refusal to drink, talk, walk and engage in any form of self-care. May be a consequence of severe trauma
- Food avoidance emotional disorder: mood disturbance with weight loss
- Obsessive compulsive disorder: eating rituals and other rituals
- Weight loss associated with psychostimulants (e.g., for ADHD)
- Weight gain associated with antipsychotic medication, which increases appetite
- Anorexia and bulimia nervosa
- Avoidant/restrictive food intake disorder: lack of interest in eating or food, avoidance because of the color, smell, texture etc of food.

Awareness of the condition was largely limited to the medical profession until the latter part of the 20th century, when German-American psychoanalyst Hilde Bruch published her popular work *The Golden Cage: the Enigma of Anorexia Nervosa* in 1978. At the same time, clinicians were also becoming aware of a new “ominous variant of anorexia nervosa”, or “bulimia nervosa” as Russell (1979) described the condition. The name bulimia nervosa was applied to the newly observed epidemic characterized by dysregulated eating in which binge eating undermines the sufferer’s attempts to lose weight.

DEFINITIONS

Disordered eating is only one of the symptoms of anorexia nervosa and bulimia nervosa. It may be more helpful to consider them as disorders of obsessive fear of weight gain, involving a range of different compulsions designed to avoid the dreaded consequence. The term anorexia which literally means “lack of hunger” is particularly unsuitable for an illness in which the sufferers are constantly obsessed by thoughts – and even dreams – of food, and tormented by calculating how to resist their extreme hunger in order to avoid weight gain.

Restriction of eating is obviously a prominent feature, but there are many other compensatory behaviors, such as over-exercising, various forms of purging and repeated checking and reassurance-seeking by weighing, measuring or mirror gazing, for instance. The precise definition is a matter of some controversy, since psychiatric diagnosis is evolving. The DSM (American Psychiatric Association, 2013) and ICD (World Health Organization, 1992) are gradually moving closer to describing syndromes that embody statistically valid symptom clusters, reflect growing genetic and neurological understanding, and predict responses to treatment. These considerations make it worthwhile, even in children and adolescents, to divide the disorders into anorexia nervosa and bulimia nervosa,

Body Mass Index (BMI)

- Body mass index (BMI, Quetelet’s index) is a commonly used index of adiposity that controls for the effects of height when assessing weight
- BMI = weight in kg divided by height (in meters) squared
- BMI is used in actuarial tables, since a BMI of 20 to 25 is associated with lower morbidity and mortality
- Children and adolescents are in a state of perpetual and irregular growth, so that BMI may be blind to a fall-off in expected height as well as weight.

Table H.1.1 Symptoms used for the diagnosis of anorexia and bulimia nervosa

Anorexia nervosa	Bulimia nervosa
<i>Abnormal eating</i>	
• Restricting food intake and weight loss to less than that minimally expected for age, sex and developmental stage*	• Recurrent episodes of binge eating that are • associated with a sense of loss of control and the episode is an unusually large amount of food
<i>Fear of gaining weight</i>	
• Persistent behaviour to avoid weight gain (e.g., dieting, exercising—restricting type—vomiting, purging, using laxatives—binge eating/purging type)	• Compensatory behaviour in order to prevent weight gain after bingeing (e.g., vomiting after bingeing, purging—purging type—alternating periods of fasting, excessive exercise—nonpurging type) • Weight is usually average or above average
<i>Body shape distortion</i>	
• Undue influence of one’s body weight or shape on self-evaluation • Lack of recognition of the seriousness of the problem	

*DSM-5 has no upper limit for underweight status. **Binge-eating disorder** solely requires recurrent binge eating with marked distress and specifiers of features of the binge eating such as disgust.

acknowledging some overlap and acknowledging also that using weight or body mass index (BMI) to distinguish between the two may not be an accurate proxy for the nature of the core psychological disorder. Young people with bulimia nervosa, who by definition have a normal weight, share the drive for thinness. However, people who maintain low weight for long periods by restriction alone or with exercise may be genetically different from those who end up bingeing and purging (Kiezebrink et al, 2009).

Table H.1.2 Comparative symptoms in the eating and feeding disorders

Disorder	Weight	Body image concerns	Presence of bingeing	Purging	Comments
Famine induced starvation	Low	No	When food available	No	Starvation brings its own psychological consequences
Weight loss of physical illness	Low	No	Not usually	No, though vomiting and diarrhea may occur as part of the illness	
Anorexia nervosa, restrictive type (AN-R)	Low, and usually stable	Yes, marked, although occasionally thinness and starvation are valued for religious reasons	No	No, by definition. However, compulsive exercise is often part of the picture	Deliberate self-harm may be used to self-punish or if obligatory refeeding is imposed
Anorexia nervosa, binge purge subtype (AN- BN)	Low and fluctuating	Yes, as for AN-R	Yes, but usually smaller binges than in normal weight AN-BN	Yes, by self-induced vomiting, use of laxatives, compulsive exercising or over activity	See above
Bulimia nervosa	Normal	Yes	Yes, often massive	Yes	
Eating disorder in Psychosis	Low or normal	Sometimes. Explanations may be bizarre or delusional	Occasionally	Rarely	
Autistic spectrum disorders	Low, normal or overweight	Sometimes and may be eccentric	Occasionally	Occasionally	Exercise may become compulsive also
Avoidant/ restrictive food intake disorder	May be low or falling	No	Not usually	Not usually	
Obsessive compulsive disorder	Low, normal or overweight	Often (body dysmorphia)	Variable	Variable	All habits may become subject to obsessionality

AN-R: anorexia nervosa, restrictive type; AN-BN: anorexia nervosa, binge purge type.

Disorders of concern about body image are increasingly seen in pre-pubertal children of both genders. Nomenclature is misleading to non-specialists. On one hand there are so-called “feeding” disorders, such as avoidant restrictive food intake disorder, where food is shunned for reasons other than its fattening capacity, occurring in the context of other physical and psychological disorders. On the other hand anorexia nervosa is characterized by a deliberate drive for thinness. Avoidant restrictive food intake disorder, characterised by an obsessive food avoidance without body image concern, can closely resemble anorexia nervosa.

EPIDEMIOLOGY, GENDER AND CULTURE

Anorexia nervosa

The average age of onset for anorexia nervosa is around 15 to 19 years. It is the commonest cause of weight loss in teenage girls and the commonest cause of inpatient admission to child and adolescent services. Eric Stice and colleagues (2013) found that around 1% of 20 year old women had a life history of anorexia nervosa or atypical anorexia. This is close to the incidence reported in a range of epidemiological studies. Similar outcomes have been reported in Australian adolescents. However, having a full or subthreshold eating disorder in adolescence has been found to be associated with increased risk of other mental health problems in adulthood (Patton et al, 2003).

Whilst more than 90% of anorexia sufferers are female when prevalence is measured across the life span, in young children the sex difference in prevalence narrows (Madden et al, 2009). There is also growing awareness that body image concerns may take a different form in adolescent boys. Some male sufferers describe striving for a muscular body rather than merely a thin one. Compulsive exercise rather than food restriction may be the earliest sign of the disorder in these cases. Some boys become addicted to exercise without body image concerns at first, although these often develop later.

Rationale for food avoidance varies across cultures, with religious explanations for fasting and self-denial prevalent in some, whilst Blake Woodside (2003) has described Indian patients who endorse gastro-intestinal symptoms as their reason for not eating. Interestingly, if these individuals are treated in groups with sufferers from *Western* anorexia, they often develop fear of becoming fat and body image concerns that replace their earlier somatic concerns. Even in Western settings, some patients start out with *somatic* or *ascetic* preoccupations but go on to re-ascribe their behavior to the media-endorsed value of thinness.

The epidemiology of avoidant restrictive food intake disorder is unknown. However in very young children it may be a sizable minority of presentations to clinics and is more common than anorexia nervosa in boys (Nicely et al, 2014).

Bulimia nervosa and binge eating disorder

The emergence of bulimia nervosa in the late 20th century corresponds with both media glorification of a thin body image, for both bulimia nervosa and binge eating disorder, with increasing availability of palatable high calorie snack food, and the loss of ceremonious communal mealtimes. The peak age of onset is similar to anorexia nervosa – 15-20 years (Kessler et al, 2013). Symptoms are

Are eating disorders becoming more common?

Anorexia nervosa is found in all historical periods and geographical areas. Clinical incidence studies indicate there has most likely been a small increase in the twentieth century in young women.

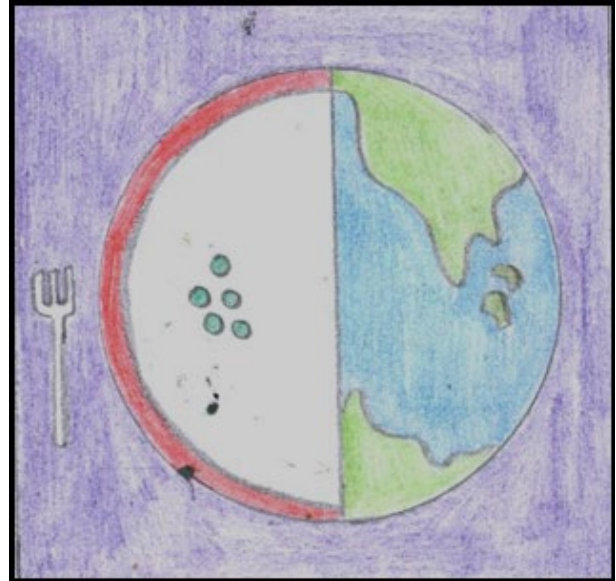
Bulimia nervosa and binge eating disorder emerged in increasing numbers in developed countries in the twentieth century, reflecting both the increased availability of food and value of slimness.

The Island of Fiji is typical of the global spread of eating disorders (Pike and Dunne, 2015). Fiji did not have television for many years. It experienced an increase in eating disorders after the introduction of TV, but largely of the bulimia nervosa and binge eating disorder type. Despite the increased prevalence of dieting, the average BMI of the population increased.

The most rapidly growing problem worldwide in the community is recurrent binge eating

easier to conceal than in anorexia nervosa, however, and the average medical presentation does not occur until the sufferer has been aware of the disorder for up to 10 years.

Up to 12% of adolescent girls may experience bulimia nervosa, binge eating disorder or a *specified* (OSFED) or *unspecified feeding and eating disorder* (UFED) form of bulimic or binge eating disorders (Stice et al, 2013). It is not yet known how many boys are affected, but an increasing emphasis on boys' appearance may be contributing to an increase, and it is believed that boys in the gay community are more vulnerable to develop bulimia nervosa. In studies of people over the age of 15 there is an increasing and large minority of men with eating disorders and binge eating disorder in particular (Mitchison et al, 2014).



AETIOLOGY AND RISK FACTORS

Genetics and neurobiology

There is substantial evidence that complex genetic factors predispose to the development of the various eating disorders – not necessarily corresponding to accepted diagnostic categories (Mitchison et al, 2014). Family studies have demonstrated the aggregation of cases within families, whilst twin studies of both anorexia and bulimia indicate greater concordance for monozygotic than dizygotic twins. Scandinavian studies (Gillberg & Råstam, 1992) suggest an association between anorexia and autistic spectrum conditions such as Asperger's syndrome, particularly in male sufferers.

Where there is anorexia in a family member, it is often found that other relatives frequently show high perfectionistic and obsessive personality traits. Rather than inheriting an eating disorder *per se*, individuals appear to inherit personality traits of perfectionism and high anxiety, and reduced central coherence (the cognitive tendency to perceive fine detail rather than the “bigger picture”).

Where there is bulimia nervosa or binge eating disorder, other relatives seem more likely to be vulnerable to obesity, depression and substance misuse. It has also been observed that eating disorders often complicate or are comorbid with borderline personality disorder.

Looking to the future, research is increasingly investigating the relationships between disturbed gut hormones and appetite regulation in eating disorders. Potentially, the impact of starvation on gut microbiota may help explain changes in satiety and taste perception of people binge with anorexia nervosa.

Environmental factors

Families where at least one person has an eating disorder may contribute both genetically and environmentally. Since eating disorders occur in a familial environment of increased genetic risk, it becomes difficult to dissect the genetic and environmental contribution to the illness.

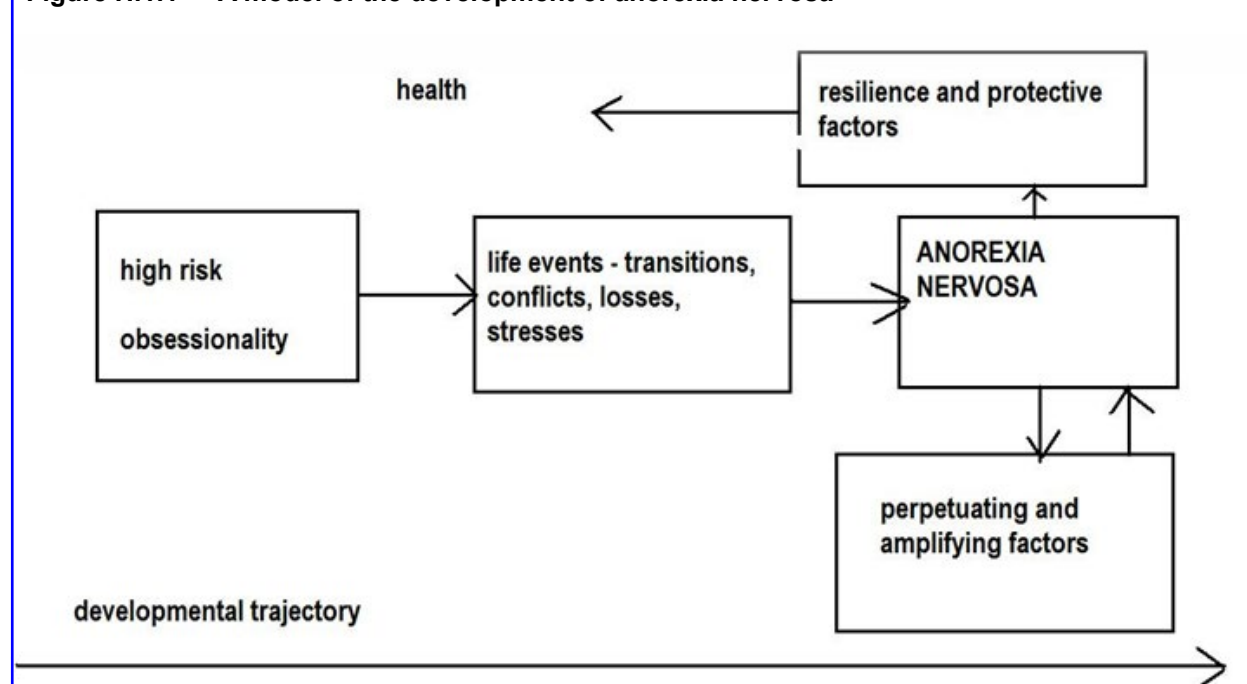
Work showing a high incidence of perinatal loss in families of teenagers with anorexia (Shoebridge & Gowers, 2000) suggests a causative role for pathological grief, but the study did not take into account the possibility that the mothers concerned were themselves of low weight and so more likely to miscarry. The same study found that girls with anorexia nervosa were less likely than controls to have spent a night away from home before age 12. This may reflect an empathic response to the personalities of the children concerned rather than be a cause of the disorder.

Triggers

Puberty and adolescence are undoubtedly major triggers (Mitchison et al, 2014). Young people simultaneously experience the challenge of living with a changing and growing body, new hormone-driven urges, the new cultural expectations, sexual, intellectual and social demands, and the need to process all these with a brain that is itself anatomically and chemically in a state of flux. However, it may be observed that these are *non-specific* triggers. In young people with different pre-disposing vulnerabilities, such triggers may precipitate different disorders, such as a depressive illness, obsessive compulsive disorder or substance misuse. In particular, people with binge eating disorder and bulimia nervosa may develop a problem when binge eating is used to alleviate low mood.

In particular, the onset of both anorexia and bulimia nervosa may be triggered by identical precipitants and may even appear similar for some time. Teenagers with bulimia nervosa may initially lose some weight before binges undo this, and some sufferers follow a fluctuating course, moving between different diagnoses. This unsatisfactory state of affairs makes it difficult to use current definitions and classifications to distinguish between disorders which may well have different genetic roots and perhaps respond to different treatments.

Figure H.1.1 A model of the development of anorexia nervosa



CLINICAL FEATURES AND DIAGNOSIS

Anorexia nervosa

Psychiatric classifications such as ICD-10 and DSM-5 define anorexia nervosa as:

- Restricted eating leading to deliberate weight loss, or failure to grow and increase in weight and height as expected according to age and gender with
- Fear of weight gain and/or persistent failure to maintain a normal weight for age and height, and
- Disturbance of body image, which translates any distress into a perception that their body is too fat.

For patients to meet the diagnostic criteria, there should be at least a loss of 15% of minimum normal weight or, according to ICD-10, a BMI below 17.5 in fully grown adults. Menstruation is typically absent (though women who take the contraceptive pill may have withdrawal bleeds). In males, low testosterone causes atrophied genitalia and absence of morning erections. In the *restrictive subtype*, low weight is achieved by starvation alone or with over-activity. The *binge-purge subtype* involves purging by means of vomiting, use of laxatives, diuretics or slimming pills to get rid of calories. It is widely agreed that these criteria exclude many who may fit into the spirit of the diagnosis and DSM-5 has introduced a new category under the *other specified feeding or eating disorder* (OSFED): *atypical anorexia nervosa* where the person may have lost a substantive amount of weight but is not technically underweight.

In children and teenagers it is even more important not to adhere to strict definitions of normal weight and DSM-5 does not specify an upper limit of underweight criteria. This recognises that weight and height are moving targets in a growing body. A healthy 12 year old boy on the 50th centile for both weight and height will have a BMI of around 17.5 – which would be underweight for most adult women. On the other hand the teenage daughter of tall parents may have a BMI within the normal range but have severely restricted her intake so that her metabolic rate slows down; she fails to grow and experiences severe obsessive symptoms. She would now be diagnosed with atypical anorexia nervosa.

It is best practice to plot the weight and height of young patients on standard growth charts to compare progression and trends with what is expected. Information about parental height improves the perspective in which growth is assessed. The outward weight and height trajectory of a child is our best proxy for the healthy nutrition of the developing brain within. As already discussed, current definitions and classifications fail to discriminate between probable differences in genetic susceptibility, but adolescents whose eating disorder causes starvation must be re-fed to prevent physical and neurological stunting, regardless of precise aetiology.

Anorexia nervosa patients are usually protective of their habits, or so focused on losing weight they no longer notice or admit the physical and social consequences of starvation, so it is important to also hear from parents, siblings or other informants. It is recommended to document the timeline of weight loss, the

What is a binge?

The definition of a binge is:

- A quantity of food consumed at a single sitting, which is
- Considerably larger in amount than what would be reasonably consumed at the time

AND

- There is a sense of loss of control over the consumption of the food.

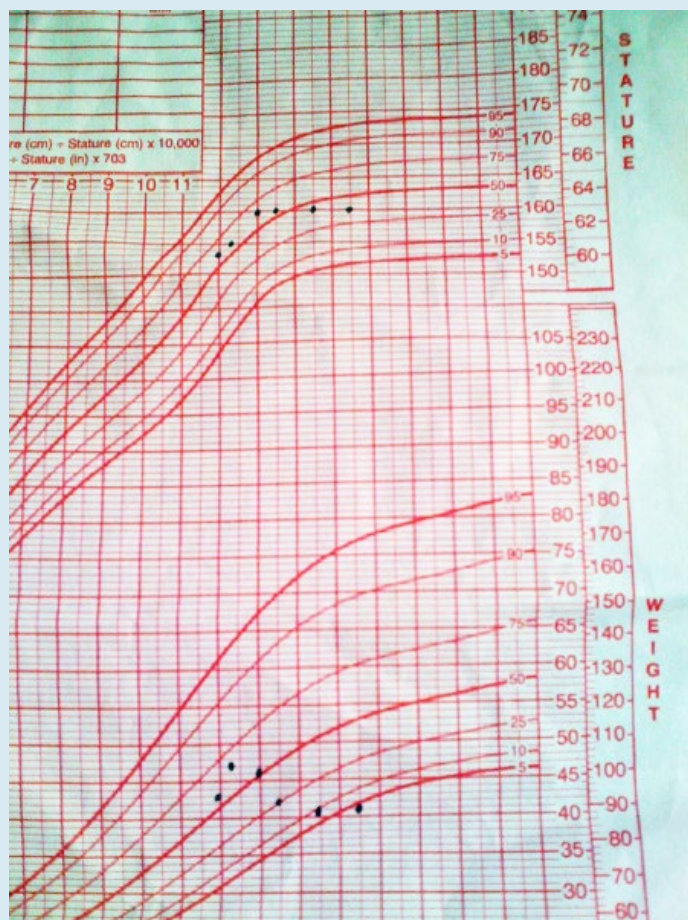
Sufferers may eventually give up trying to control binges and may even plan them. Some patients with anorexia describe any unplanned food consumption as a binge. In bulimia nervosa there is generally purging behavior after a binge and sufferers may use the term binge to refer to the purging behavior itself. In ICD-11 the requirement for the binge to be objectively large may be removed.

Sita

14 year old Sita presented to the adolescent mental health clinic after multiple gastro-intestinal investigations had failed to explain her weight loss, constipation and abdominal pain. She was assessed by a psychologist who raised the possibility of sexual abuse—this caused massive offence to Sita's parents. She had gradually stopped eating every food type that she associated with stomach pain and now existed on a very restricted range of bland foods, in diminishing quantities.

She was hospitalized in a pediatric ward where she declined almost everything on the menu and was eventually naso-gastrically fed (with her and her parents' consent) as a pragmatic measure to re-nourish her. However, as her weight increased Sita became very distressed and asked to go home as she could not tolerate "getting fat". She was reviewed by a child psychologist who made the diagnosis of anorexia nervosa.

patient's highest and lowest weight, preferred weight, and menstruation. Clinicians need to know about current daily food intake, liquids consumed, including low calorie and caffeine-containing drinks, alcohol, drugs and medications. Is there self-induced vomiting, compulsive activity and exercise, use of laxatives, diet pills, herbal medicines, and deliberate exposure to the cold? These behaviors interfere with health and social functioning as well as prevent weight gain. Sufferers typically engage in a mixture of both body-checking behaviors (repeated weighing, measuring, mirror gazing, touching, prodding, pinching, trying on particular garments and comparison with others) and avoidance (such as not appearing in



Example of weight graph

At the end of primary school, this girl was amongst the tallest of her peers, though in healthy proportion in terms of weight for height. However, she developed anorexia nervosa and lost weight over a matter of months. From the onset of the illness she also stopped gaining height and was overtaken by her classmates.

SCOFF questionnaire (Morgan et al, 1999)

- 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 (6kg) in weight over a 3 month period?
- Do you believe yourself to be **F**at when others say you are thin?
- Would you say that **F**ood dominates your life?

swimming costumes or without makeup, or being unable to take a bath because of looking down on their body). Social withdrawal and conflict are both common, and shy, obedient girls may become verbally or physically violent, or self-harming if their eating disordered rules are challenged. Those with bulimic difficulties may become so desperately hungry that they steal or hoard food.

Surprisingly, even very low weight can be missed when young patients dress and make up smartly. Family members who see the person daily may not notice insidious changes. It is helpful if there is a climate of awareness in schools and among primary care clinicians. We can make it a habit to routinely ask young patients about their eating habits. The SCOFF questionnaire (Morgan et al, 1999) is a validated, brief instrument to screen for eating disorders, similar in concept to the CAGE questionnaire for alcohol problems (see Box). It is important to actively seek the psychological symptoms of eating disorders rather than proceed simply by excluding physical diseases. In our concern not to overlook diabetes, thyrotoxicosis, cystic fibrosis, bowel diseases, malignancies or other causes of weight loss, young people are often over-investigated while the possibility of anorexia nervosa is neglected.

Bulimia nervosa

This diagnosis is usually made from the binge-purge behavior of a normal weight sufferer – the BITE questionnaire (see Appendix) is a useful way to assess the range and severity of symptoms. Menstrual irregularities, fertility problems, unexplained seizures, “funny turns”, and chronic fatigue should alert us to a possible eating disorder. Gastro-intestinal complaints can be both the consequence of and the excuse for an eating disorder (as in the case vignette of Sita). More psychological presentations include depression, anxiety, obsessional symptoms and relationship problems. Girls are of course at higher risk, but boys with unexplained weight loss should be also asked about diet, exercise and attitudes to their physique. Observation in a hospital or day clinic may reveal symptoms a patient does not tell clinicians.

Binge-eating disorder

This diagnosis is made where there is recurrent regular binge eating in the absence of purging, vomiting, fasting or compulsive exercise as compensatory behaviour. These weight control behaviors may occur but do not meet threshold frequency for a diagnosis of bulimia nervosa. Unlike anorexia and bulimia nervosa, body image concern is not a requirement. However, marked distress and at least three other symptoms consequent to the binge eating (such as guilt and disgust) are required.

Useful questionnaires and rating scales

- [The Eating Disorders Examination](#), self-report version (EDE-Q; Fairburn & Beglin, 1994). This instrument is freely available and one of the most widely used self-report questionnaires; suitable for adolescents but not for younger children.
- Eating Disorders Inventory-3 (Garner, 2004). Self-rated questionnaire covering 12 domains of eating cognitions, behaviours and social function; validated for younger patients and sensitive to change.
- The Children's Eating Attitudes Test (ChEAT; Maloney et al, 1988). Version of the adult EAT, also self-report questionnaire
- Morgan-Russell Average Outcome Scale (MRAOS; Morgan & Hayward, 1988). Interviewer-based measure of global outcome in anorexia nervosa (not copyright).
- Bulimic Investigatory Test (BITE; Freeman & Henderson, 1997). Self-report questionnaire validated for adult patients but also suitable for adolescents; highly sensitive to change in bulimic symptoms, thus useful to track progress in treatment (not copyright).

Other disorders

DSM-5 specifies five *other specified feeding or eating disorder* (OSFED) categories:

- Atypical anorexia nervosa
- Subthreshold bulimia nervosa
- Binge-eating disorder (of low frequency or limited duration)
- Purging disorder, and
- Night eating syndrome.

People who do not meet criteria for OSFED or *avoidant/restrictive food intake disorder* (ARFID) (food avoidance/restriction with physical or psychological consequence in absence of body image concern) may be diagnosed with *unspecified feeding or eating disorder* (UFED). The revision of the ICD (ICD-11) is likely to also introduce ARFID and subthreshold categories.

INVESTIGATION OF PHYSICAL CONDITIONS AND PSYCHOLOGICAL SYMPTOMS

Eating and feeding disorders need a multi-disciplinary evaluation involving physical investigations, food diaries, growth charts, and psychiatric assessment. Family history and involvement are crucial; it is illuminating to observe a family meal, preferably in the home. Alternatively, the family can be asked to bring a picnic meal to be eaten in the clinic.

It's essential to measure and weigh patients – extreme reluctance to be weighed is likely to be a symptom of excessive body image concern. This can help to explain that patients who co-operate with physical monitoring can be more safely managed as outpatients than those who are uncooperative, where the severity of starvation can only be estimated. Physicians sometimes decline to admit patients whose diagnosis is a psychiatric one, and may need to be supported by specialist consultation liaison services, so that treatment for the physical sequelae of starvation are not undermined by the patient's psychopathological concerns.

Routine blood tests are helpful in excluding most of the common differential diagnoses of weight loss. Glucose is low in anorexia (except with comorbid, poorly controlled diabetes). The thyroid is often protectively and reversibly underactive in anorexia nervosa, with normal or slightly low TSH, whereas T4 will be high with suppressed TSH if weight loss is caused by thyrotoxicosis. Electrolytes may show low (reflecting protein intake) or high urea (reflecting dehydration) and low potassium (vomiting). Liver function tests may suggest comorbid drug or alcohol problems, though extreme starvation alone can cause liver damage. Anorexia often causes anemia, and if white cell count is not low, this may reflect infection. Neutropenia is usual in starved patients – if significantly below one, the patient needs to be protected from exposure to infection. ECGs are helpful to monitor electrolyte and cardiac status. Annual bone density scans, if available, allow monitoring the risk of osteoporosis but at this stage may not change management.

Young women may become pregnant at an unhealthy low weight and vomiting makes oral contraception unreliable. It is wise always to consider pregnancy as a possibility in young women with weight change, vomiting and

No to anorexia

"I thought this could be a chance to use my suffering to get a message across, and finally put an image on what thinness represents and the danger it leads to — which is death", said Isabelle Caro, a French actress and model who died of complications of anorexia nervosa on 17 November 2010 in Tokyo, Japan. She was 28 years old.

Caro had received a variety of unsuccessful treatments. She had suffered from anorexia since she was 13, and was hospitalized for the first time when she was 20. At her worst, in 2006, she went into a coma weighing just 25 kg (BMI = 9.2).

Caro used the last years of her life to campaign against the fashion industry using skinny models. The climax of this campaign was when she posed nude to be photographed for an anti-anorexia campaign for a clothing company. Images in newspapers and billboards under the headline "No Anorexia" were released during Milan's 2007 fashion week. At the time she had a BMI under 12. The fashion industry was under the spotlight about anorexia after a 21-year-old Brazilian model had died from the disorder. Caro's pictures caused a stir, sparking much debate. The campaign was initially approved by Italy's health department, but was subsequently banned by the advertising watchdog while France's authority told French companies not to use it. Some groups working with anorexia patients also believed that this campaign was not helpful.

Caro spoke often about anorexia, her efforts to overcome it, and the menace of eating disorders in the fashion industry. She was working to pass a law in the French parliament that would prohibit models from working if they were too thin.

"No to anorexia" campaigner dies. IACAPAP Bulletin, February 2011, p28.



amenorrhea. If there is both an eating disorder and pregnancy, the patient needs to be monitored physically, nutritionally and psychologically with great care throughout the pregnancy and beyond, so that the mother-baby pair can build a healthy relationship and survive the eating disorder together. Eating disorders, even if sub-clinical, can impair fertility and increase the risk of damage to an unborn child. Both pregnancy and labor may be more difficult. Up-to-date information should be sought about the relative risks of medication versus untreated disorders during pregnancy and lactation. Mothers who have suffered from an eating disorder themselves may need support to learn the skills of healthy playful toddler feeding. It follows that it is always advisable to discuss issues related to conception in a sensitive and supportive manner.

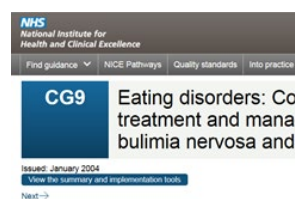
Always assess mood and anxiety symptoms – this is a helpful way to find common ground with patients who reject physical concerns. Moreover the risk of self-harm and suicide is raised in all eating disorders (Arcelus et al, 2011).

COMORBIDITY

In addition to considering the following conditions as differential diagnoses, it is important to recognize their co-existence with eating disorders.

Psychological co-morbidity:

- Depression. Low mood and dysphoria secondary to starvation needs to be distinguished from a co-morbid major depressive episode
- Anxiety and obsessionality. In some cases the eating disorder is one



Click on the picture to access a summary of the the NICE guideline

of a range of symptoms of extreme anxiety. Social anxiety is the most common comorbidity (Swinbourne et al, 2012). Starvation also causes obsessive symptoms around food and body image (Keys, 1950).

- Autistic spectrum disorders
- Emerging borderline personality disorder. Binge eating is a common emotion regulating behavior seen in borderline personality disorder but in this context occurs without weight or shape overvaluation
- Substance abuse. Steroids may be used to increase body musculature and stimulants to reduce weight. Opiates cause nausea and reduced appetite, young people may use all available money for drugs rather than food
- Chronic fatigue syndrome. It may be associated with eating disorders and is unlikely to respond to treatment unless all symptoms are tackled simultaneously.

Physical comorbidity:

- Diabetes. Insulin omission is a common practice in people with insulin-dependent diabetes, particularly girls, who use it as a way to lose weight. The result is that even if weight remains in the normal range and no other purging behaviors are present, lasting damage can be done to the body because of poor glycemic control. Mortality in people with comorbid diabetes and an eating disorder is many times the mortality for either condition separately
- Cystic fibrosis is another condition where under-treatment of the disease results in weight loss, which may be welcomed by the young person, but at the unrealized expense to overall health
- Gastrointestinal conditions, epilepsy and even cancer may predispose body-image conscious youth to neglect any treatment which increases body weight
- Obesity. Increasingly people with bulimia nervosa and binge eating disorder are overweight/obese.

COURSE AND BURDEN

Anorexia nervosa is one of the most lethal of psychiatric conditions and whilst around 40% may achieve a full recovery, a small percentage have a severe and enduring course; the average time to recovery (where it occurs) is six to seven years (Strober et al, 1997; Steinhausen, 2002; Steinhausen et al, 2003). As a result, patients with anorexia are a substantial burden on psychiatric services and on their families, with morbidity in carers on a par with that experienced by those caring for patients with schizophrenia (Whitney, 2007). Whilst symptoms of bulimia nervosa may remit spontaneously in the young, there is still disagreement as to whether early diagnosis and intervention bring about better outcomes or whether they merely reflect the natural course of the disorder in teenagers. Over fifty percent of individuals with bulimia nervosa or binge eating disorder will achieve remission at five years of follow-up (Steinhausen & Weber, 2009) but untreated symptoms are likely to persist with significant impact on health related quality of life (Hay et al, 2012).

Refeeding syndrome

The refeeding syndrome is a potentially fatal shift in fluids and electrolytes that can occur in malnourished patients receiving too fast, imperfectly balanced, artificial or even oral feeding. It may encompass a mixture of biochemical, electrolyte, fluid balance and metabolic changes that may include—or lead to—hypophosphatemia, hypomagnesaemia, hypokalemia, gastric dilation, congestive cardiac failure, severe edema, confusion, coma, and death.

The refeeding syndrome was a common cause of death in the early management of anorexia as well as other starved patients. However, there has been criticism that current guidelines on refeeding are over-cautious and lead to initial further weight loss with increased risk and longer stays in hospital. With adequate medical monitoring and replacement, especially of phosphate, refeeding syndrome should not occur.

Refeeding at home can be undertaken more safely by avoiding sudden changes to the diet and using high phosphate products such as milk as a major constituent of the diet.

MANAGEMENT

Anorexia nervosa

In anorexia nervosa, clinicians are faced with the challenge of managing the acute physical risk, being aware of how psychopathology increases that risk beyond that of the physical condition alone. Precipitous weight loss (>1kg/week, less in small children) is dangerous. Mortality is further increased by purging or substance abuse. Such patients should be urgently discussed with specialists. Some need hospital admission – and involuntary treatment if necessary to save life. Particular danger signs in emaciated patients are weakness (climbing stairs, rising from a squat), chest pain, and cognitive slowing.

Physical indices of risk such as blood tests or weight measurements fail to take account of the behavioral risk, which would be absent in patients with similar results from other illness, as the latter can be expected to co-operate with advice and treatment rather than opposing and undermining it. Thus general medical wards need extra support in nursing children and young people with eating disorders in order to compassionately but firmly deal with their damaging behaviors.

There is particular urgency about refeeding underweight children; the smaller the child, the faster the dehydration and deterioration. Children's metabolism is faster than adults'. Physical growth and exposure to infections add further demands. Starvation at times of crucial physiological growth may cause long-term damage. For example, starvation in 10-14 year olds during the siege of Leningrad was associated with higher blood pressure, cholesterol levels, and overall mortality in long term survivors. The Dutch famine of 1944 (Stein et al, 1975), showed similar consequences including second generation consequences of starvation, such as obesity in the offspring of starved pregnant women. There may be permanent stunting of height in those starved during puberty and effects on a still developing brain. The brain, particularly the frontal lobes, continues developing during adolescence, with both myelination and pruning of neural connections (Giedd, 2008), reflected in growing social skills and capacity for abstract thought, but many patients with severe anorexia nervosa can continue to function showing academic success and superficial maturity.

Cognitive function is impaired by short-term starvation and by vomiting – with enormous individual variation. Considerable recovery occurs with re-nutrition, allowing better engagement in psychological therapies. Social and psychological development can be compromised by illness and by hospitalization. Happily, there is evidence that a well-supported family engaged in family-based treatment can provide an alternative to inpatient care, can maintain progress and allow earlier discharged from hospital (Madden et al, 2014).

Families become understandably frightened, helpless and angry when children starve themselves, and high levels of arousal make eating even harder. Family education needs to avoid blame but welcome responsibility, acknowledge the seriousness and difficulty of the situation, and teach firmness with calm. It's helpful if carers can understand the child's fears but not let go of the conviction that the symptoms are unacceptable and damaging. Neither collusion nor bullying is as effective in facilitating healthy change as concerned firmness.

It is helpful to communicate with schools and other agencies involved.

Extract from a letter to anorexia

Dear Mr
Anorexia,

I am writing this letter to dump you. Yes really! I have fallen out of love with you. It's not you, it's me.

I will never forget you. I did truly love you once and we had a good time for a bit, but you are just too high maintenance and it is wrecking my life.

My family never liked you but that made you just seem more cool. But then I found I was losing friends over you and they said my parents were right and you were wrong for me. You don't really care for me, I see that now – you want me to think about you all the time instead of looking after myself properly ...



Principles of the **Maudsley model** of family therapy in anorexia nervosa

- The family is encouraged to take the illness very seriously
- Anorexia is *externalized*; that is, it is spoken of as an entity in itself (“the anorexia”) and treated as a life-threatening illness rather than the child’s choice
- Therapy is not focused on the causes of the illness and avoids blaming the family for their child’s illness
- On the other hand responsibility for recovery is explicitly placed with the family in partnership with professionals. It is assumed families “know best” how to feed their children.
- The adults re-take control until the child can feed herself autonomously again. They are urged to use all their existing skills and to learn new ones where necessary to bring this about
- Only when adequate nutrition is successfully achieved and maintained there is an examination of developmental issues and age-appropriate autonomy facilitated..

Teachers and youth leaders may not want to supervise meals, but they can set appropriate boundaries on exercise and activity and arrange privacy at mealtimes. School activity trips may not be safe for low weight children or ritualistic eaters.

Dietetic expertise is essential on inpatient wards and it is important for outpatients to have specialist dietetic input. However, the problem lies far less in terms of knowing what to eat – learning how to tolerate the absorption of sufficient calories is the struggle. Re-nutrition is central to treatment and recovery cannot occur without this. Restoration of weight against the patient’s will can only lead to recovery if therapy – or life itself – can persuade the patient to voluntarily maintain a healthy weight. Therapy, preferably family based, is needed to support non-negotiable benefit from therapy not only to prevent burnout and depression, but because family based treatment has been demonstrated to be thus far the most effective long term treatment for the disorder and is recommended by international guidelines (NICE, 2004; Hay et al, 2014). Well-meaning efforts to treat depression in an extremely low weight patient are likely to meet with limited success unless re-nutrition is in progress.

Motivational approaches

Sadly, it is not common for an intelligent child who is shown the physical dangers of starvation to be frightened into eating normally again. Indeed the child’s indifference, in contrast with adults’ increasingly fearful concern, may widen the gulf between them. The best approach is to gradually and repeatedly help children see the links between the symptoms they dislike – weariness, agitation, obsessionality, being preoccupied with food and its avoidance, sleep problems, feeling the cold, loss of friendships, inability to join in socially, falling sport or academic performance, “fussing” by parents – and the anorexic illness. It is useful as children progress to help them notice how weight gain brings the corresponding benefits: more energy, clear headedness, resistance to cold, growing

Motivational talk

- Anticipate ambivalence
- Express empathy
- Roll with resistance
- Support self-efficacy
- Conduct a decisional analysis: what are the positives and the negatives of the eating disorder?

The non-negotiables

- Patients move – however slowly – towards the healthy weight range, not away from it
- Everyone has to learn to accept and co-operate with medical monitoring to stay safe and to develop trust and respect
- Doctors and parents have a legal and moral duty to save life and prevent irreversible damage.

in height (it's generally "cool" to be tall), capacity to have fun with friends, and being well enough to join in games again.

We should acknowledge sympathetically, not angrily, the benefits which undoubtedly come with a serious eating disorder: its power to oblige people to care and placate, the relief from social and sexual demands, the sense that one's body is now controlled rather than terrifyingly unpredictable. Young patients need new techniques for coping with these aspects of life without having to starve themselves.

The principles of motivational interviewing have been adapted for use in the management of eating disorders from the Miller and Rollnick (2008) approach to substance misuse disorders. They are not intended to constitute a stand-alone treatment but to enable the development of a therapeutic relationship in otherwise unpromising circumstances (Geller, 2005). The clinician encourages the patients to explore the consequences of anorexic behavior as openly and scientifically as possible, so that patients are the ones to articulate the disadvantages as much as possible. When a therapist tells patients what to do, they resort automatically to an oppositional stance (even the best clinicians find this but can recover by realizing that the pattern is happening.) There are a number of workbooks available to foster playful motivation techniques, such as writing "love letters" and "rejection letters" to anorexia.

Clinicians who explore ambivalence sensitively, seeking to understand both pros and cons of the eating disorder, are more likely to find themselves on the side of the patient against the disorder. Patients find it less daunting to give up their eating disorder if they can learn alternative coping skills.

Medication

One useful metaphor in work with anorexia nervosa is that food is the medicine. This means that food has to be prescribed and taken at the times specified and in the amounts prescribed. It is the task of the nurses or parents to dispense the medicine in the right dose and ensure that the child takes it. It is the child's job to take the medicine and not get rid of it, even though they may not enjoy the taste or may be upset by the side-effects (weight gain). This is non-negotiable; the choice for the young person is limited to how they take their medicine – orally as food, orally as commercially available supplement drinks (if available) or by a naso-gastric tube.

There is little evidence to support prescribing of psychoactive medication in the treatment of eating disorders, and in fact it is important to avoid drugs which may prolong the QTc interval and thus threaten the weakened heart (e.g., first generation antipsychotics, tricyclic antidepressants, some antihistamines and macrolide antibiotics). Initial reports that fluoxetine might reduce relapse in weight-recovered anorexic patients failed to be replicated in later studies, unfortunately.

A growing body of evidence supports the prescription of relatively low doses (2.5-10mg) of olanzapine or other antipsychotic to reduce rumination and improve tolerance of weight gain in both adults and young people with anorexia nervosa and it is safe (Couturier & Lock, 2007). It may be preferred to benzodiazepines in promoting relief from anxiety and, if necessary, tranquillization to allow insertion of nasogastric tubes.



Admit to hospital or manage at home?

Gowers et al (2007) found that, when it was safe to manage anorexic patients on an outpatient basis, the outcome was significantly better if treatment was delivered by an outpatient clinic with specialist expertise in eating disorders. Even general outpatient child and adolescent psychiatrists brought about greater physical and psychosocial improvement than did inpatient treatment.

Guidelines now recommend outpatient care for medically stable adolescents with anorexia nervosa. Where there is no outpatient clinic available, outreach services and telemedicine are increasingly able to deliver home-based care.

Is it “just a phase”?

Experts disagree and there are mixed research findings about the benefits of early intervention. Perhaps there are some spontaneous early recoveries, regardless of treatment. However, chronicity is associated with poor prognosis.

- Stice et al (2009) reported an eight-year prospective study of 495 female adolescents from age 12 to 20. There was a 12% prevalence of some form of eating disorder by age 20, but most resolved within months and more than 90% resolved within one year.

On the other hand:

- Patton et al. (2013) found whilst disordered eating in adolescent may resolve with maturity, there is an increased risk of mood disorder and substance use in older years.
- Hay et al. (2012) found strong persistence of symptoms such as binge eating over time in a cohort of young women with disordered eating behaviours.
- Mitchison et al. (2013) found a self-reported life time history of anorexia nervosa was associated with poor health related quality of life in a large community sample of men and women.
- Steinhausen et al (1991) found that the longer the duration of an eating disorder the harder it is to recover
- Treasure and Russell (2011) argued that early treatment is essential, pointing retrospectively to improved outcomes in younger patients with a relatively brief history of anorexia nervosa
- Meta-analytic studies (Schoemaker, 1997; Raes et al, 2001) have found that early recognition and diagnosis did not guarantee earlier recovery.

Bulimia nervosa and binge-eating disorder

Bulimia nervosa in young people appears to benefit from antidepressants as in adults – typically fluoxetine 60mg daily (Couturier & Lock, 2007) and these are also reported effective in binge eating disorder. However, cognitive behavioral therapy (CBT), targeting bulimic symptoms, is the gold standard treatment for both disorders in adolescents as in adults (Pretorius et al, 2009). Where no trained therapists are available there are good results reported using self-help books, CDs, or web-based programs, guided or directed by a professional if possible. The interpersonal therapy (IPT) model of Korman and Weissman has also been successfully used in the treatment of bulimia nervosa in young adults, and is potentially a reasonable alternative to CBT for adolescents (Fairburn et al, 1995).

It would appear reasonable to employ CBT for low weight as well as normal weight eating disorders, and indeed Fairburn's CBT-E – an enhanced version of CBT – has been recommended by the originator as suitable for all eating disorders in patients down to age 15 and down to a BMI of 15 (Fairburn, 2009); unfortunately, many young patients will not fall into this category.

MODELS OF SERVICE DELIVERY FOR EATING DISORDERS

The key to safe and effective treatment of anorexia nervosa is the orchestration of a coordinated systemic response. This is harder than it sounds when the patients instinctively behave in a way which protects anorexic behavior and brings about maximum confusion and disruption to the therapeutic process. School can be a particularly difficult place for teenagers who need to be monitored – their return to school may not turn out to be a journey towards health and progress but a retreat from adult supervision, allowing anorexic behaviors to flourish. The competitive

environment of school examinations often further drives anorexic and obsessive responses to stress, and adults often hesitate to interrupt public examinations to prioritize treatment.

Group therapy may appear on the face of it to be a more economical way to deliver treatment. However, anorexia nervosa patients tend to avoid groups or use them to compete with other sufferers. Group therapy has however been used successfully with patients who have bulimia nervosa or binge-eating disorder. Families also benefit considerably from the support offered by other struggling parents and there is growing evidence for the value of multi-family groups (Eisler, 2005).

When a bulimia nervosa patient is maintaining a normal weight and is able to access minimal medical monitoring, web-based and CD-ROM manualized treatments can provide a useful initial treatment (Hay & Claudino, 2015). Schmidt's team (Pretorius et al, 2009) have modified these materials specifically for adolescents from the authors' own self-help book *Getting Better Bit(e) by Bit(e)* (Schmidt & Treasure, 1993).

COURSE AND PROGNOSIS

Sten Theander's (1985) early follow up studies found that a shocking 20% of anorexic patients died of causes related to the disorder. Even now, mortality in anorexia is ten times that in the general population and is among the top three or four causes of death in teenagers in Western countries. Today's lower mortality figures partly reflect changes in diagnostic criteria – since the publication of DSM III-R in 1987 we require only 15% body weight to be lost (or a BMI below 17.5) before making the diagnosis, compared with 25% (BMI below 15) previously. As a result, the population of people diagnosed with anorexia nervosa has expanded, whilst the number of people so starved by the disorder that they die remains fairly constant, so that when expressed as a percentage, it would appear superficially that the death rate is decreasing.

Treatment for fully established anorexia nervosa is slow and difficult: the average time to recovery is six to seven years though treatment is likely to be episodic rather than continuous over this period. Younger, intensively-treated patients often show a more rapid improvement, and it is likely that some cases will have resolved even without treatment.

Improved management may also contribute to longer survival – it is now acknowledged that a tolerant, respectful relationship allows long-term physical monitoring and support to be offered. Early treatments for anorexia nervosa tended to involve strict behavioural regimes whereby patients started hospital admission on bed-rest and were allowed *privileges* such as using a toilet rather than a bed-pan, or being allowed to receive visitors only in return for weight gain. Such regimes are no longer seen as either useful or acceptable, although sadly, the spirit of “rewarding” or “punishing” patients based on their weight, seems to persist in some centres. This may be an instinctive response to the nature of anorexia nervosa itself, which is to offer a sense of reward for weight lost or punishment for weight gained.

Websites

Most of the websites of larger professional or major charitable bodies are reliable and up to date. There are many excellent lay-run sites and also many dangerously misinformed and even “pro-anorexia” sites, often short-lived or outdated.

- [The Centre for Eating and Dieting Disorders](#) (Australia)
- The American-based but internationally represented [Academy of Eating Disorders](#) offers useful information, including guidelines for medical management.
- The site of the [Royal College of Paediatrics and Child Health](#) has a section which makes WHO Growth Charts available (click Child Health/Research Projects/Growth Charts)
- The [Royal College of Psychiatrists'](#) website has useful information both for professionals, carers and sufferers of all ages.
- “BEAT”, formerly the UK Eating Disorders Association, offers information and help for lay people on all aspects of eating disorders.
- “[Diabetics With Eating Disorders](#)” (DWED) a website by and for diabetics with eating disorders.
- “[Men get eating disorders too](#)” by and for men and boys.
- “[Something Fishy](#)” is an English language website that provides links to sites in other languages.
- [The Butterfly Foundation](#) (Australia)

A significant minority of patients with anorexia nervosa fail to fully recover but these patients may at least be enabled to live valuable and tolerable lives. It is not possible to identify which patients will fall into this category whilst they are still in their teens, and young people should not be regarded as chronic sufferers until many years of treatment have passed.

Starvation and malnutrition from all causes reduce fertility. The minimum weight needed for menstruation and fertility varies between individuals. Young people with anorexia and their families often fear that fertility is irredeemably damaged by the disorder, when in fact with restoration of adequate weight and healthy eating patterns, fertility returns given time. Patients in their thirties and forties, with longstanding primary amenorrhoea have been shown to be ovulating normally after weight recovery.

Sadly, though, the death rate from anorexia nervosa is still high (Arcelus et al, 2011). The excess mortality is partly as a result of the physical damage associated with the illness and partly because of suicide. Some deaths may result from ambivalently-taken overdoses that would not have killed individuals with a healthy weight. Likewise, the effects of substance abuse are greatly amplified at low weight. In cold countries, the majority of deaths occur in the winter months when hypothermia and infections (including tuberculosis) account for many fatalities. The starved heart is especially vulnerable when over-exercised in cold temperatures. In hot countries dehydration and enteric infections are important risks. Patients who have induced vomiting can harm the gastrointestinal system, predisposing them to fatal perforation.

Follow up

In childhood and adolescence and when anorexia acutely threatens life we are obliged to take action, but if patients do not recover despite intensive efforts and are not at significant risk of death, the priority becomes to maintain useful contact and keep the door open for them to accept as much help as possible: medical monitoring, a listening ear, and keeping hope – and patients – alive (Hay et al, 2014). Recent studies show that recovery is still possible even twenty years after the onset of anorexia. Because of the age group affected and the time span involved, patients' care often involves many transitions, for instance, moving from children's services to adult clinics, leaving the relatively protected environment of school, leaving home, perhaps to take on challenging university courses or to work away from home, and thus further changes in health service care.

Transitions are peak times for relapse and decompensating. People with anorexia tend to see their illness as a coping strategy and even as a cherished identity so that professional energy is needed to either entice or, when necessary, coerce them into treatment. Unsurprisingly, many professionals experience anger and frustration at one time or another. However, there is much satisfaction when a young person with anorexia nervosa recovers and regains a positive sense of purpose and satisfaction in their lives. It should be emphasised that anorexia nervosa and other eating disorders are psychiatric disorders where complete and lasting recovery does occur.

PREVENTION

Prevention programs are typically conducted with groups of children or adolescents in school or clinic settings or with youth groups such as athletics clubs. Overall, the outcome of prevention programs has been mixed. Targeted programs show small to moderate effect sizes, whereas universal ones have been found to be largely ineffective. The most efficacious interventions focus on improving self-esteem, media literacy training and a specific approach, cognitive dissonance training individually or in groups (Stice et al, 2007). Some countries have introduced legislation to require a minimum BMI for fashion models and already some schools of dance require minimum as well as maximum BMI bands. It is too soon as yet to evaluate the preventative effects of such policies, but they give a sound message to the public.

Concern has been raised that anti-obesity campaigns may have the undesirable side-effect of promoting eating disorders in the vulnerable. It has been demonstrated, however, that thoughtfully delivered health promotion that examines healthy nutrition and exercise (rather than focussing on weight reduction) can actually protect against both obesity and body-image related eating disorders (Schwarz & Henderson, 2009).

BARRIERS TO THE IMPLEMENTATION OF CARE IN DEVELOPING COUNTRIES

Until recently, traditional and ceremonial eating practices and family influences offered developing countries relative protection against the development of eating disorders, together with an ideal setting in which to treat those who have succumbed to the illness. The structured regular eating patterns of specialist units and the ethos that patients eat what is put in front of them without quibbling and with respect to people eating alongside them is very close to the traditional attitudes to eating that can keep humans healthy physically, psychologically and socially. The thin body image ideal has not been endorsed by non-Western cultures until lately and, even now, countries where AIDS is feared tend not to admire an emaciated body.

It is a sad irony that whilst disordered and obsessive body image values have been widely transmitted by TV, the Internet and other media, it is more difficult for health services to keep up with the harm. Although the treatment of eating disorders in young people does not need to rely on sophisticated or expensive medications, education and training in structured psychotherapies is equally – if not more – expensive. Bulimia nervosa and other eating disorders respond well to CBT delivered in self-help or guided self-help form, but there is evidence that in anorexia nervosa outcome relates more closely to the level of experience of the clinician than to any specific model of therapy (Hay et al, 2014). Anorexia nervosa, though devastating, is often hidden not only by sufferers but also by ashamed families, so that general clinicians are unlikely to build up expertise, whilst specialist centres are too expensive and too far geographically to serve much of the world's population.

In the final analysis it is the family – or surrogate family – which will need to come to the rescue of the child with anorexia nervosa. The style of parenting

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required can seem counter-intuitive to western middle-class families and may also be counter-intuitive to families afflicted by the same obsessionality as the affected child. However, family based treatment is both manualized and described in a lay paperback so that it is accessible to all English speaking literate families (Lock et al, 2001; Lock & Le Grange, 2005). Rather than the cause of eating disorders modern research has demonstrated that families are the most likely source of recovery.

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