

Nutrition and mental health

Janet Treasure PhD FRCP FRCPsych,
Head of Eating Disorders

Kate Williams BSc MARD, Chief Dietitian
The South London and Maudsley NHS Trust, London

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The links between diet and behaviour are complex. Any perturbation in metabolism, the brain control of appetite and behaviour or the cultural context can have an impact. Thus, disorders in this area span the interfaces between medicine, psychiatry, public health and lifestyle, and management may fall between different professional responsibilities.

Eating disorders and disordered eating

The spectrum of eating disorders

Although there are precise definitions of disorders of eating, in practical terms the frequency and severity of eating and compensatory behaviours (which vary within and across diagnoses) rather than the diagnosis itself are more useful in management.

Epidemiology

Some form of eating disorder is found in 5–10% of 15–25 year old women, with the prevalence of anorexia nervosa 0.5% and bulimia nervosa 2%. The incidence in males is tenfold lower.¹ The usual age of onset of anorexia nervosa is 15 years² and the diagnosis can usually be made within a year of onset. The age of onset of bulimia nervosa is 17,³ but the diagnosis may not be made until several years later as the behaviours are regarded as shameful and thus hidden. People with diabetes are at increased risk of developing an eating disorder.

Prevalence of bulimia but not anorexia nervosa varies across different cultures and over time.⁴

Aetiology and risk factors

Interactions between genetic background and biological, family, social and cultural factors probably play a role in both the development and maintenance of these disorders^{5,6} and are an important focus for treatment. The developmental phenotype for the bulimic spectrum of disorders is a robust appetite and high weight, whereas that for anorexia nervosa is an anxious, compulsive temperament. Victimisation experiences, such as physical and sexual abuse, and teasing and stigma about weight and eating, increase risk for all disorders, in particular for the bulimic group. Maladaptive attitudes to food, weight and shape form a central component of cognitive behavioural treatment for bulimia nervosa.⁷ Interpersonal issues are particularly relevant for anorexia nervosa.

Course

Most cases of anorexia nervosa have a protracted course, with a median of six years, and a third never make a full recovery. Poor outcome is predicted by severity of weight loss, duration of illness, poor early response to treatment and additional problems such as obsessive compulsive disorder. Approximately a third of cases develop bulimic features. Anorexia nervosa has the highest mortality of all psychiatric illnesses (20% in clinical series).

People with bulimia nervosa have a relapsing and remitting course. Fewer than 10% have a persistent eating disorder at 10 years. Binge eating disorder also has a fluctuating course and the majority develop obesity over time.

Detection and diagnosis

Eating disorders are usually diagnosed from the history. Measurement of body mass index (BMI) is critical. However, because of secrecy (shame in bulimia nervosa) and unwillingness to seek help (denial of the sick role in anorexia nervosa), a high index of suspicion is important in unexplained cases of weight loss or where there is preoccupation with diet and body weight.

Key questions include:

- Do you or anybody close to you think you could have an eating disorder?
- Do cares about food or weight play an excessive role in your life above other things you might value such as friends, family, work etc?

A history from close others and a failure to gain weight in response to simple advice can help to make the diagnosis of anorexia nervosa. Resistance to weight gain is a core feature. An urgent referral to an eating disorder specialist should be made if the BMI is less than 15 kg/m². In cases at high medical risk, it may be necessary to admit (see National Institute for Clinical Excellence (NICE) guidelines for further details).

Investigations for differential diagnosis and risk assessment

Exclusion of underlying conditions such as malabsorption, infection or endocrine disorders is important, especially in atypical cases. Normal erythrocyte sedimentation rate and thyroid function tests rule out the most common differential diagnoses. Nutritional features are those of starvation. Reduced red and white cell and platelet counts and electrolyte disturbances are common; low plasma glucose and abnormal liver function tests (LFTs) may also occur in severe cases. In the absence of infection, albumin is usually normal. The majority of body systems are affected by the negative energy and nutrient balance. Assessment of the acute medical risk is essential. Weight (BMI) should be interpreted with care as various strategies for dissimulation are used. Erosion of dental enamel is common in bulimia. Severe fluid and electrolyte abnormalities are most common when there is a mixed picture of anorexia nervosa and bulimia nervosa.

Markers of nutritional decompensation which signal the need for urgent care are: high rate (1 kg per week) and severe (BMI <13 kg/m²) weight loss.

- low blood pressure (<70/50 mmHg) and heart rate (<40/min)
- hypothermia <35°C
- proximal myopathy

- severe biochemical disturbance (eg abnormal LFTs, glucose <2.4 mmol, potassium <2.5 mmol, sodium <130 mmol).

Inpatient treatment should be considered if any of the above is present. If, despite maximal outpatient support (including meeting with the family), the high-risk individual declines admission, the Mental Health Act provides for compulsory admission and treatment. (For further details see www.eatingresearch.com/service-provider and NICE guidelines on eating disorders www.NICE.org.⁷)

Management

A detailed description of management is contained in the NICE guidelines. This chapter focuses on situations of high medical risk when physicians are called upon to be involved.

Engaging the person with eating disorders into treatment is difficult. Characteristically, the person with anorexia nervosa does not accept that anything is wrong. This can cause conflict (usually covert) within the medical encounter. Techniques such as motivational interviewing can be used to explore mixed

feelings about changes to help move people towards action. People with bulimia nervosa want to stop their bingeing, but may balk at giving up their weight control strategies. Information sharing between family, patient and health professionals is advisable.

Anorexia nervosa

The focus of treatment for anorexia nervosa is restoration of normal nutritional status in combination with psychotherapeutic techniques to combat factors that maintain the illness. (For more information see references.)

Bulimia nervosa

Cognitive behavioural treatment is recommended in bulimia nervosa,⁷ producing full remission in 40% (see Cochrane review⁸).

Stabilisation of at-risk cases

Fluid and electrolyte balance. Weight change strategies such as vomiting and diuretic and laxative abuse can result in severe dehydration, acute renal failure and electrolyte imbalance. Oral replacement is preferable using a balanced rehydration solution. Low serum potassium may persist even with supplements if vomiting continues. Proton pump inhibitors such as lansoprazole inhibit gastric acid secretion and may reduce metabolic alkalosis and help to conserve potassium.

Nutritional risk. The energy and nutrient deficits in anorexia nervosa develop slowly and may involve all systems; attempts to reverse them rapidly may have adverse effects. It is preferable to rectify them slowly, orally and with ordinary food, and to supplement with a micronutrient preparation containing a complete range of vitamins and trace elements. In the first phase (3–7 days) a soft diet of approximately 30–40 kcal/kg/day spaced in small portions throughout the day is appropriate. Low blood sugar should be managed with regular small meals. If intravenous glucose is used for other management

Key Points

Approximately 10% of young women have some form of eating problems

The prevalence of bulimia nervosa is markedly affected by environmental factors such as ready access to food and glorification of the thin ideal

People with diabetes are at increased risk of developing an eating disorder

The median duration of anorexia nervosa is six years and 30% have enduring illness

A raised erythrocyte sedimentation rate should raise the suspicion of an alternative diagnosis

It is hard to engage people with anorexia nervosa into treatment as they hold positive attitudes about anorexia nervosa and do not want to change

Bulimia nervosa is treated by cognitive behavioural therapy

Body mass index is one index of increased risk but should be used in the context of a more detailed clinical assessment

Admission should be considered if there are signs of any of the following: myopathy, reduced core temperature, circulatory decompensation, abnormal biochemistry and haematology, and rapid and/or severe weight loss

Wherever possible, give oral energy and nutrient replacements and supplements. Avoid single nutrient treatments as multiple deficits are the norm

Stabilisation of high-risk anorexia nervosa requires the gradual introduction of food (starting with about 1,000 kcal), and supplementation with standard doses of vitamins and trace elements

Close monitoring is essential to prevent refeeding syndrome

Osteoporosis is a common problem. Weight gain can increase bone density by 10% a year whereas oestrogens have a negligible effect

The risk of weight increase should be considered in prescribing antipsychotic medication. All individuals prescribed antipsychotic medication should have body weight monitored

Individuals prescribed antipsychotic medication are at risk of developing metabolic syndrome and should be screened for diabetes

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issues, the patient should receive adequate micronutrients at the same time.

Medication. There is negligible evidence of benefit from additional pharmacotherapy (antidepressants, antipsychotics and antihistamines) in low weight patients and there is the risk of harm, for example with QT prolongation. The relative benefits and risks need to be weighed carefully. Small doses of antipsychotic agents can help the severe anxiety and overactivity associated with refeeding.

Severe medical complications, collectively known as the refeeding syndrome, can occur, especially in those with a BMI below 12 kg/m² and those with concurrent physical conditions. Close monitoring is necessary as a range of electrolyte disturbances, including hypophosphataemia, hypokalaemia, hypocalcaemia and hypomagnesaemia can occur during the re-establishment of an adequate intake of food, energy and nutrients. Fatal consequences such as acute gastric dilatation and hypophosphataemia can occur quickly.⁹ Hypophosphataemia can develop with a high carbohydrate load; if severe, it can cause cardiac and respiratory failure, delirium and fits.

Longer-term medical complications

Osteoporosis is common. Weight restoration can increase bone density by 10% a year. The place of hormonal replacement therapy is uncertain and can be harmful by causing premature closure of the epiphyses. Restoration of menstruation may be delayed, especially if dietary abnormalities persist.

Weight management and antipsychotic medication

Antipsychotic medications have been implicated in the high risk of overweight seen in people with schizophrenia,^{10–12} probably through interference with hypothalamic appetite control, though other mechanisms are also likely to be involved.¹³ The degree of weight gain is variable and may be substantial.¹⁴ Even modest weight gain increases morbidity

risks, in particular for type 2 diabetes and cardiovascular disease, and may add significantly to the individual's burden of illness. As schizophrenia characteristically develops in early adulthood and may need lifelong medication, management of these associated risks is important.

Weight gain is neither inevitable nor completely intractable. The risk of weight gain should be explained to every patient prescribed antipsychotic medication. Weight should be closely monitored, at baseline and at least monthly during the first six months of treatment or following any change in medication. Weight, blood glucose and blood pressure should be part of regular monitoring. A BMI above 25 kg/m² or a weight increase of 3 kg from baseline (unless the patient was underweight) should prompt action to prevent further gain.

Weight management strategies are the same as in the general population and are effective if compliance is good.¹⁵ Dry mouth may lead to high intake of sweetened drinks; these should be replaced by sugar-free versions.

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