



CPD4dentalnurses

YOUR FUTURE IN YOUR HANDS

Eating Disorders and Oral Health Implications

Aims: This article aims to discuss the aetiology, classification, clinical features and risk factors for the most common eating disorders and explore the role that the dental team can play in the identification and management of patients with eating disorders.

Objectives: On completion of this verifiable CPD article the participant will be able to demonstrate, through completion of a questionnaire, the ability to:

- Define eating disorders
- Demonstrate knowledge of the characteristics of Anorexia Nervosa
- Demonstrate knowledge of the characteristics of Bulimia
- Demonstrate knowledge of the characteristics of Binge Eating Disorder
- Identify some of the less common eating disorders
- Identify some of the medical complications of eating disorders
- Identify some of the oral manifestations of eating disorders
- Demonstrate knowledge of the barriers to discussing eating disorders with the patient

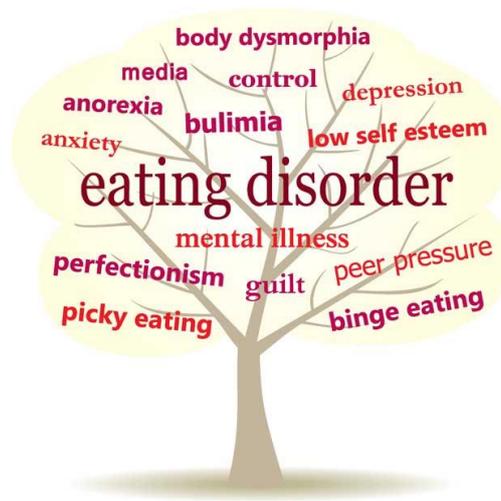
Introduction

The dental team can play a crucial role in the early identification of eating disorders, the case management and the referral of this group of patients. Eating disorders are a group of related disturbances in eating behaviour that have distinct differences but all have wide-ranging effects. Research shows an increasing number of people are struggling with eating disorders and now over 70 million individuals worldwide are affected.¹ The UK Eating Disorders Association estimate that the incidence of eating disorders in the UK is approximately 1.25 million; however it is suggested that these figures vastly underestimate the number of people living with these disorders due the high levels of stigma and shame.²

Given that dentists and dental care professionals may be the first health care providers to assess the physical and oral effects of eating disorders, they may be the key health care providers in the secondary prevention of eating disorders.³ Secondary prevention of eating disorders involves reducing the rates of the development of the eating disorder through early detection, referral, and treatment. Problems associated with the oral cavity and dentition can be detected as early as six months in a patient who has developed eating disorder behaviours. Therefore, early identification by the dental

team can play a vital role in the prevention of more serious systemic problems and reduce the risk of irreversible damage to the oral cavity.⁴

Eating Disorders



While eating disorders are traditionally seen as illnesses that most commonly affect teenage girls, it must be remembered that eating disorders can and do affect anyone irrespective of age, gender, sexual orientation, race or ethnicity.

Eating disorders are very complex, Hilda Bruch, an American psychiatrist, published a valuable classic 'The Golden Cage: The Enigma of Anorexia Nervosa' in 1978. This provided the first detailed account of the experience of her own psychiatric clinical case material obtained from working with anorexic patients. Bruch's work continues to provide important lessons in terms of clinical treatment for eating disorders and could be explored as further reading of this topic.

Many theories exist as to what causes eating disorders and these relate mainly to biological, social and psychological factors.⁵

The fact that statistics show eating disorder cases affect three times as many women compared to men has led to speculation about the role of biological factors. Studies show that in times of food scarcity, the female animal's ability to tolerate starvation assists in continuing the species. Females have been shown to have a higher ratio of fat to lean tissue than males, meaning that if food is scarce, reserves of fat tissue sustain pregnancy and lactation. Studies question if this biological factor means that females are more likely to draw on self-starvation as a means of coping with stress. Other biological explanations relate to the complexity of the female pubertal development, making females more susceptible to disruption when under stress.⁵

Social factors have been shown to be more relevant and traditionally eating disorders were considered to primarily affect more affluent groups. Eating disorders have a relatively low prevalence in the non-western world. A preoccupation with weight control, appearance and body image has something to do with increasing westernisation and consumerism. Thinness has become a symbol of status in society.

However, in recent years research has suggested that eating disorders are becoming more common in children from working class backgrounds, and amongst Black and Asian girls. Other important social factors relate to the change in societies expectations over the years of the female role in society. The traditional image of the female as the mother and nurturer has evolved as has the male role and the lines between the two have become blurred. It has been suggested that this has increased pressure on females and the desire to be perfect resulting in a preoccupation with becoming fat. ⁵ The media obviously also plays an important role in this process.

However, we all live with these social forces but do not all succumb to eating disorders. This suggests other factors such as psychological factors are relevant. These could include: low self-esteem, feelings of inadequacy or lack of control in life, depression, anxiety, anger, stress or loneliness.

Types of Eating Disorders



Eating disorders include a range of conditions that can affect someone physically, psychologically and socially. The most common eating disorders are: Anorexia Nervosa, Bulimia and Binge Eating Disorder. Other eating disorders include: night eating syndrome; purging disorder; avoidant restrictive food intake disorder; rumination disorder; pica; diabulimia and unspecified eating and feeding disorder.⁶

This article will discuss the aetiology, classification, clinical features and risk factors for the most common eating disorders and define the other eating disorders.

Anorexia Nervosa

Anorexia Nervosa is characterised by an abnormally low body weight, intense fear of gaining weight and a distorted perception of body weight. People with anorexia place a high value on controlling their weight and shape, using extreme efforts that tend to significantly interfere with activities in their lives.

To prevent weight gain or to continue losing weight, people with anorexia usually severely restrict the amount of food they eat. They may control calorie intake by

vomiting after eating or by misusing laxatives, diet aids, diuretics or enemas. They may also try to lose weight by exercising excessively.

Aetiology

The exact cause is unknown. Neurophysiologic research in patients with Anorexia and Bulimia Nervosa have found altered brain activity. This activity has been shown to remain following recovery and could explain the high levels of relapse. Some data suggests disruption of serotonin pathways leading to anxiety, behavioural inhibition and body image distortion.⁷

Classification and Clinical Features

- Refusal to maintain body weight above or at a minimally normal weight for a person of that age and height.
- Weight loss leading to less than 85% of expected weight.
- Intense fear of gaining weight or becoming fat despite being underweight.
- Disturbance in perception of body shape and weight, denial of current low weight.
- Absence of menstrual bleeding for three or more consecutive months.⁷

Anorexia is divided into two types -

Restricting type - restriction of food intake.

Bingeing/purging type - restriction of food intake and regular episodes of bingeing or purging behaviour.

Bulimia Nervosa

Bulimia Nervosa is characterised by frequent episodes of binge eating followed by inappropriate behaviours such as self-induced vomiting and/or excessive use of laxatives to avoid weight gain. In addition, people with bulimia place an excessive emphasis on body shape or weight in their self-evaluation.⁴

Aetiology

Bulimia shares many of the same clinical features as Anorexia Nervosa with the distinction that individuals maintain an apparently normal weight. Bulimia is closely related to the purging type of anorexia without the restrictive eating.⁷

Classification and Clinical Features

- A persistent preoccupation with eating.

- An irresistible craving for food and consuming large amounts of food in a short space of time.
- Attempts to counteract overeating by self induced vomiting, laxative use, periods of starvation or/and the use of appetite suppressant drugs.
- A morbid fear of being overweight with a clear weight goal which is rigidly adhered to.⁷

Depression is a common characteristic in patients with eating disorders, in particular Bulimia Nervosa. Feelings of shame and guilt are often described by sufferers which particularly relate to their purging behaviour. This can lead to low self esteem and low self worth.⁸

Binge Eating Disorder

Binge Eating Disorder is characterised by regular episodes of binge eating. Unlike Bulimia Nervosa, a person with Binge Eating Disorder will not use compensatory behaviours, such as self-induced vomiting or over-exercising after binge eating. Many people with Binge Eating Disorder are overweight or obese but not everyone.

The reasons for developing Binge Eating Disorder will differ from person to person. Known causes include genetic predisposition and a combination of environmental, social and cultural factors. It can occur in people of all ages and genders, across all socioeconomic groups, and from any cultural background. Large population studies suggest that equal numbers of males and females experience Binge Eating Disorder.⁹

Aetiology

The aetiology for Binge Eating Disorder remains unclear but there are links between previous dieting, obesity and emotional stress.

Classification and Clinical Features

- The consumption of large quantities of food in one eating episode.
- Usually combined with a feeling of guilt.
- Secretive food behaviour.
- Binges are often planned in advance and can involve the person buying "special" binge foods.
- People with Binge Eating Disorder often feel they have no control over their eating^{7,9}

Risk Factors	Anorexia Nervosa	Bulimia Nervosa	Binge Eating Disorder
Physiological/Physical	Altered cerebral functioning Serotonin disorders	Serotonin disorders	History of significant weight changes
Psychological/Psychiatric	History of affective disorders in individual or family, e.g. clinical depression or anxiety Obsessive compulsive disorder Low self esteem Perfectionism	History of affective disorders in individual or family, e.g. clinical depression or anxiety Obsessive compulsive disorder Low self esteem	History of affective disorders in individual or family, e.g. clinical depression or anxiety or history of bi-polar Low self esteem
Environmental - Social, Cultural, relationships	History of dieting Pre-morbid obesity/overweight (7-20%) Stressful life events-adolescence difficult, peer group pressure Experiencing bullying Strong desire to be thin Placing high importance on social norms	History of dieting Pre-morbid obesity/overweight (18-40%) Stressful life events-adolescence difficult, peer group pressure Experiencing bullying Strong desire to be thin Placing high importance on social norms	History of dieting Stressful life events-adolescence difficult, peer group pressure Experiencing bullying Experience of weight stigma

Fig.1^{8,10}

Night Eating Syndrome

This eating disorder is more common in obese patients. After retiring to bed individuals wake up and consume food during the night. The cause is not clearly understood and this eating disorder has received little attention. The disorder is distressing to the individual and leads to poor general health.¹

Purging Disorder

Purging Disorder is characterised by purging in the absence of bingeing. Individuals are usually of normal weight. They regularly use self-induced vomiting, laxatives, diuretics or other extreme methods. They may feel compelled to purge after consuming small or normal portions.¹¹

Rumination Disorder

Rumination Disorder is characterised by effortless and repeated regurgitation of small amounts of food, which is then partially or completely re-chewed, re-swallowed, or expelled.¹¹

Pica

Pica is the craving to ingest non-food items these can include clay, soil, chalk and paper. This disorder has been linked to individuals with development disabilities and pregnant women.⁷

Diabulimia

Diabulimia is an eating disorder in which people with Type 1 diabetes deliberately reduce insulin treatment for the purpose of weight loss. The body goes into a starvation state, resulting in breakdown of muscle and fat into ketone bodies and subsequently ketoacids. The body is unable to process sugars that have been consumed, so the sugars are excreted rather than being used by the body for energy or stored as fat. This typically results in significant weight loss but also places the patient at risk of a life-threatening condition known as diabetic ketoacidosis.¹¹

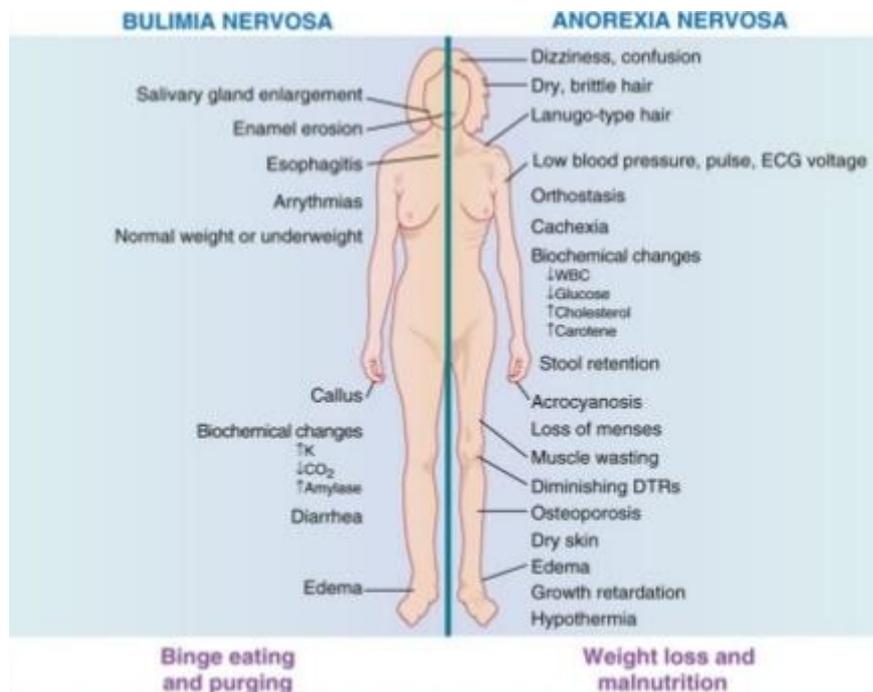
Medical, Psychological and Psychological Complications

There are many medical, psychological and psychological complications associated with eating disorders which can lead to irreversible physical damage and even death.

Some of these include:

- Irregular heartbeat, cardiac arrest, death
- Kidney damage, renal failure, death
- Liver damage, death
- Loss of muscle mass
- Permanent loss of bone mass leading to fractures and lifelong problems with fragile bones and joints. Osteopenia, Osteoporosis and dowager's hump.
- Rupture of the oesophagus, damage to lining of stomach, gastritis
- Disruption of menstrual cycle, infertility
- Weakened immune system
- Icy hands and feet
- **Swollen neck glands, salivary duct stones, enlarged parotid glands**
- Sensitivity to cold
- Dry blotchy skin that has an unhealthy gray or yellow cast
- Anaemia
- Malnutrition
- Depression
- Anxiety, self doubt
- Mood swings
- Distorted body image

- Denial of problem
- Feelings of isolation and loneliness

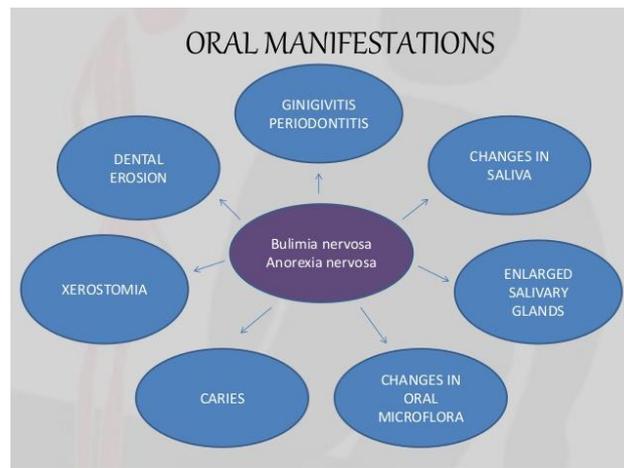


Oral Manifestations of Eating Disorders

Oral manifestations of eating disorders include a number of signs and symptoms involving the oral mucosa, teeth, periodontal tissues, salivary glands and the temporomandibular joints. These can lead to overall deterioration of the oral and general health of a patient. They are caused by a number of factors including nutritional deficiencies, poor personal hygiene, drugs, nutritional habits and underlying mental health issues.¹²

Early detection and intervention play a key role in the recovery of eating disorders and the dental team are instrumental in this process. They may be the first health care professionals to identify the signs and symptoms. The assessment of patients with possible eating disorders involves knowledge of both oral and physical manifestations. It is recognised that appropriate training needs to be incorporated within the curriculum of dental professional during their training.³

The clinical presentation depends on the type of eating disorder but some of the general oral complications are:



Soft tissues

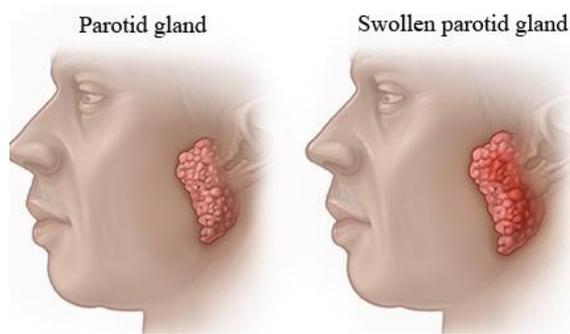
The tongue tip and lateral borders can become reddened, swollen and occasionally deeply fissured. Some people develop a fine downy hair on their body which can be present around the oral cavity as well as on the body. This is known as 'Lanugo'. There is no research to suggest that chronic irritation of the soft tissues due to eating disorders results in malignancy, however, placing the fingers at the back of the mouth to induce vomiting may lead to palatal trauma.⁷ Malnourishment may lead to an increased risk of angular cheilitis and candidiasis.¹³

People with eating disorders that induce vomiting may develop Russell's sign which is a callous on the dorsal surfaces of the fingers, from inserting across the teeth to self-induce vomiting.¹³



Saliva and Salivary Glands

Salivary function is probably altered in eating disorders, although the consequence of this is unknown as little research has been carried out. Some studies suggest anorexics and bulimics appear to have lower pH in their stimulated whole saliva which could lower the buffering effect of saliva and increase the risk of caries and demineralisation.¹⁴ Research suggests that dry mouth is more frequent in bulimic patients. The Parotid gland can become enlarged which may alter the saliva output.⁷



Periodontal Disease

Extreme fatigue in malnourished patients may result in poor oral hygiene habits which could impact on the periodontal health of the patient. Some studies reported more plaque, gingivitis and periodontitis in anorexics and bulimics whilst other studies failed to find a difference.⁷ As many people with anorexia and bulimia are relatively young it is not surprising that severe periodontal disease is not commonly found.¹⁴

Dental Erosion

The palatal surfaces of maxillary teeth, in particular the incisors, are the most obvious locations of dental erosion in persons with anorexia and bulimia due to the exposure to gastric acid. However, eroded surfaces are found throughout the dentition.

Hurst et al (1997) distinguished between three types of erosions in persons with anorexia nervosa:

- a) Severe erosions mainly affecting the palatal surfaces of the incisor, canine and premolar teeth;
- b) Erosions mainly confined to the labial surfaces of the incisor teeth; and
- c) A generalised but minimal loss of enamel on the occlusal surfaces of molars and premolars which results in unnaturally highly polished amalgam restorations.

The study also showed a marked difference in the areas of dental erosions in vomiting and non-vomiting anorexics. Lingual erosions occur only when self-induced vomiting is practised, while the buccal type of erosion appears, although rarely, in non-vomiting persons.¹⁴

Lingual Erosion

Buccal Erosion

Pronounced amalgams



Tooth wear

Tooth wear can be found in patients who develop Pica as a result of chewing hard substances such as stones or coal. The chewing of abrasive items can lead to grooving of the dentine and sharp enamel rims.⁷



Dentine Hypersensitivity

Exposed dentine due to erosion can lead to dentine sensitivity.

Dental Caries

The evidence that dental caries is worse in patients with eating disorders is conflicting.⁷ Some studies describing caries experience in people with eating disorders found no significant difference in caries rate. However, other studies describe the opposite and find that people with eating disorders had a higher caries rate. Given that saliva also plays an important role in protection against caries, and saliva flow can be reduced in people with eating disorders, combined with the associated altered eating habits of this group, theoretically it would be expected that a higher caries rate would be found.^{7,14}

Temporomandibular Disorder

Despite the risk to the joint from opening wide to induce vomiting, a higher risk of Temporomandibular disorder has not been reported.⁷

Discussing Eating Disorders with the Dental Patient

Effective, non-judgmental communication is critical when eating disorders are suspected.

- Establish non-threatening communication with the patient to discuss suspicion of eating disorder. Choose an appropriate time (allow sufficient time to discuss concerns) and location (without other patients nearby) to increase comfort of patient.
- Begin slowly and tell the patient about the oral changes that you have noticed. Suggest possible causes of the changes and introduce the possibility of an eating disorder.

- Ask patient questions about eating habits and body image, if patient allows. Be supportive and calm
- Be aware of resources in the community for referral if patient admits to an eating disorder. Encourage patient to seek professional help.¹⁵

Dental Treatment and Prevention

- ✓ Monitor dental erosion and mucosal lesions regularly. Be aware that it may take 6 months to 2 years for dental erosion to be visible after self-induced vomiting begins.
- ✓ Minimise use of abrasive materials during dental treatment.
- ✓ Plan complex restorative procedures after vomiting cycle has stopped or lost weight is regained.
- ✓ Consider treating dentine hypersensitivity with fluoride varnish, and desensitising toothpastes.
- ✓ Instruct patient not to brush teeth within 1 hour after vomiting, but to rinse mouth with water to reduce acidity and subsequent erosion. Consider rinsing with fluoride mouthwash daily.
- ✓ Instruct patient in use of a tongue cleaning after vomiting.
- ✓ Educate patient about importance of healthy eating and encourage consumption of non-acidic foods and beverages. Drinking carbonated/acidic drinks with a straw will direct away from teeth.
- ✓ Encourage bulimic patient to consume sugarless gum with xylitol to promote salivary flow.
- ✓ Encourage palliative measures such as mouthguards, use of buffering agents such as antacids (example Tums) following self induced purging/vomiting while encouraging professional help.
- ✓ Ask patient for medication updates at each appointment.
- ✓ Educate on proper oral hygiene (brushing, flossing) and nutrition.

Principles for helping people with Eating Disorders

Treatment must address psychological factors associated with eating disorders e.g. low self-esteem and anxiety, as well as manifest eating problems.

Eating disorders need to be recognised as early as possible before habits are firmly established.

Services need to be accessible and confidential to encourage people to ask for help.

In both assessment and treatment, the clinician's knowledge and understanding of eating disorders is more important than his/her specific profession.

Effective treatment requires the active commitment of the patient. All approaches to treatment should promote autonomy, be flexible, provide choice and enable the development of trust between patient and clinician.

Care and support may be needed over many years for people with severe problems.

Family and friends need support for themselves, both to help the person with the eating disorder and in order to cope with the impact on their own lives.

Personal Development Plan and Reflective Learning

This CPD is linked to the following GDC Enhanced CPD Development Outcome:

A. Effective communication with patients, the dental team and others across dentistry, including when obtaining consent, dealing with complaints, and raising concerns when patients are at risk.

C. Maintenance and development of knowledge and skill within your field of practice.

Reflective learning is now a requirement of the GDC Enhanced Professional Development Scheme. As such, you will now have the opportunity to answer some reflective learning questions, if you complete these now you will fulfil the requirements of the GDC. These will be:

- 1) What did you learn (or confirm) from the activity that was helpful or relevant to your daily work and patients?
- 2) Comment on any changes/updates needed in your daily work
- 3) How has completion of this CPD article benefitted your work as a DCP?

Further Reading

National centre for eating disorders which provides excellence in training for professionals:

<https://eating-disorders.org.uk/>

The UK's eating disorder charity:

<https://www.beateatingdisorders.org.uk/>

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