# Eating Disorders and Gastroesophageal Reflux Disease

Eating disorders represent an unhealthy relationship with food that can debilitate quality of life. The classification of eating disorders such as anorexia nervosa, bulimia nervosa, and binge eating disorders can be found in the psychiatric literature under the International Classification of Diseases, Classification of Feeding and Eating Disorders (ICD-10) and the Diagnostic and Statistical Manual of Mental Disorders (DSM-5). Up to 24 million people in the U.S. suffer from an eating disorder.[1] Eating pathology has been implicated to affect one in eight young women.[2] Males have accounted for as much as 10-25% of anorexia and bulimia sufferers.[3] Anorexia nervosa is characterized by distorted body image with restrictions in caloric intake, eating only certain foods, or skipping meals leading to severe weight loss. Patients with bulimia nervosa experience frequent episodes of binge eating followed by self-induced vomiting, excessive exercise, or use of laxatives, diuretics, or diet pills to lose weight. Individuals diagnosed with binge eating disorder show frequent episodes of ingesting significantly large quantities of food over a short period of time without being able to control what or how much they are eating. Risk factors for these illnesses include psychological factors such as stress, low self-esteem, and perfectionism as well as familial factors such as family dysfunction and a positive medical history.[4] Eating disorders often coexist with profound medical conditions such as Type I diabetes, as seen in the diabulimic, adding to the potential fatal outcome.[5]

Gastroesophageal reflux is broadly defined as the result of acidic stomach contents regurgitating back into the esophagus. Patients suffering from gastroesophageal reflux disease (GERD) have a weak or relaxed lower esophageal sphincter. Other contributing factors include hiatal hernias, obesity, pregnancy, certain medications, or smoking. GERD has been reported to impact roughly 18-27% of the general North American population[6] with 20% of adults stating they have weekly heartburn and 40% stating episodes occurring at least once per month.[7] “Silent” reflux can go unreported and undetected for years. GERD is a risk factor for the development of Barrett’s esophagus and esophageal adenocarcinoma.[8]

Any acid with a pH below 5.5 can dissolve hydroxyapatite enamel crystals, and gastric reflux has a pH of 2.0. Indeed, dental erosion is present in 5-47.5% of GERD patients.[9] Patients with eating disorders or reflux demonstrate poor diet including excessive soda consumption linked to caries and erosion due to the presence of phosphoric and citric acids.[10] Dental examination will show smooth, glazed rounded surfaces with “cupping” of posterior tips and incisal edges. Bulimic patients exhibit erosion involving posterior teeth and lingual surfaces of the maxillary anterior teeth.[11] Over time, entire lingual cusps may be dissolved. The mandibular incisors are covered by the tongue during the act of vomiting thus may not be affected. The thinning of enamel may lead to an increased incisal and proximal translucency or

yellowish appearance of the teeth from the underlying dentin. The exposed dentin may or may not be temperature sensitive. The rate of erosion will be compounded by mechanical wear in patients that brux or clench. In addition to tooth erosion, surfaces of dental materials can also be affected by acid damage. Patients may complain of sour, acidic taste or impaired taste or a burning intraoral sensation, halitosis, loss of teeth, periodontal disease, or sore throat due to reflux.[12] Untreated symptoms will progress to require complex restorative dental therapies including full-mouth rehabilitations, which subsequently require lifetime maintenance.

Prevention of tooth wear and dental caries should be a priority for patients with eating disorders and/or GERD. Patients should be encouraged to consult their dental health professional to assist with diet counseling to minimize intake of acidic fruits, candies, sprays, or colas. They should be advised to avoid brushing or chewing hard foods for approximately two hours post-regurgitation until the pH returns to normal and to brush with soft toothbrushes and use high fluoride dentifrices, varnishes, or trays.[13] The treatment of dental erosion and other oral alterations from eating disorders or GERD requires a multidisciplinary approach involving the family physician, internist, gastroenterologist, psychiatrist, dentist, and prosthodontist. The prosthodontist treating a patient with alterations to the dentition from a suspected but undiagnosed eating disorder or GERD should discuss the dental findings and offer to refer the patient to the appropriate medical professional.

**References**

1. The Renfrew Center Foundation for Eating Disorders: Eating Disorders 101 Guide: A Summary of Issues, Statistics and Resources. Philadelphia, Renfrew Center, 2003.

2. Stice E, Marti, CN, Rohde P: Prevalence, incidence, impairment, and course of the proposed DSM-5 eating disorder diagnoses in an 8-year prospective community study of young women. J Abnorm Psychol 2013;122:445-457.

3. Strother E, Lemberg R, Stanford SC, et al: Eating disorders in men: Underdiagnosed, undertreated, and misunderstood. Eat Disord 2012;20:346-355.

4. Strober M, Freeman R, Lampert C, et al: A controlled family study of restricting anorexia and bulimia nervosa: Psychiatric disorders in first-degree relatives and effects of proband comorbidity. Arch Gen Psych 1999;55:603-610.

5. Davidson J: Diabulimia: How eating disorders can affect adolescents with type I diabetes. Nurs Stand 2014;29:44-49.

6. Boeckxstaens G, El-Serag HB, Smout AJPM, et al: Symptomatic reflux disease: The present, the past and the future. Gut 2014;63:1185-1193.

## References cont.

7. Dent J, El-Serag HB, Wallander M-A, et al: Epidemiology of gastro-oesophageal reflux disease: A systematic review. Gut 2005;54:710-717.

8. Dent J: Barrett's Esophagus: A historical perspective, an update on core practicalities and predictions on future evolutions of management. J Gastroenterol Hepatol 2011;26:11-30.

9. Marsicano, JA, de Moura-Grec PG, Bonato RCS, et al: Gastroesophageal reflux, dental erosion, and halitosis in epidemiological surveys: A systematic review. Euro J Gastroenterol Hepatol 2013;25:135-141.

10. Brown TA, Keel P: What contributes to excessive diet soda intake in eating disorders: appetitive drive, weight concerns or both? Eat Disord 2013;21:265-274.

11. Little JW: Eating disorders: dental implications. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2002;93:138-143.

12. Barron RP, Carmichael RP, Marcon MA, et al: Dental erosion in gastroesophageal reflux disease. J Can Dent Assoc 2003;69:84-89,.

13. Ranjitkar S, Smales RJ, Kaidonis JA: Oral manifestations of gastroesophageal reflux disease. J Gastroenterol Hepatol 2012;27:21-27.

## Authors

Ana M. Diaz-Arnold, DDS, MS, FACP
Debra R. Haselton, DDS, FACP

## Date

*Original document dated Feb. 4, 2005*
Approved ACP Board of Directors: June 13, 2015
Reaffirmation ACP Board of Directors: August 29, 2023