(includes “anorexia nervosa” [also known as “anorexia”], “bulimia nervosa” [also known as “bulimia” or “ox hunger”], and “binge-eating disorder” [also known as “compulsive overeating”, and formerly as “food addiction”])

**EATING DISORDERS**

Date of Publication: August 18, 2016

Is the initiation of non-invasive dental hygiene procedures* contra-indicated? No

- **Is medical consult advised?** Yes, if a patient/client presents with a previously undiagnosed suspected eating disorder or suspected worsening of a known eating disorder. Sometimes pain and discomfort related to oral complications, or effects on dental appearance, first prompt patients/clients to consult with a health professional, such as a dental hygienist or dentist. The oral health professional should be aware of community resources for eating disorders, such as an eating disorder program, and be able to provide contact information.

Is the initiation of invasive dental hygiene procedures contra-indicated?** No.

- **Is medical consult advised?** See above.
- **Is medical clearance required?** Not typically. However, if potentially life-threatening medical complications of the eating disorder (such as cardiac arrhythmias, heart failure, kidney failure, or esophageal rupture) are suspected, then clearance should be sought.
- **Is antibiotic prophylaxis required?** No.
- **Is postponing treatment advised?** Not typically for dental hygiene procedures. However, ideally only essential dental restorations should be performed when the patient/client is engaged in purging by vomiting; extensive, complex restorative work should be postponed until the patient/client is in treatment for the underlying eating disorder and heading for recovery.

Oral management implications

- The dental hygienist should be alert to the signs/symptoms of eating disorders, because early detection, medical referral for care, and timely professional intervention substantially increase the likelihood of recovery. Thus, the oral health professional has an important role to play in the secondary prevention of eating disorders, as well as in oral specific treatment.
- Persons with previously undiagnosed eating disorders may seek dental/dental hygiene care for aesthetic reasons, including cracked teeth. About 25% of patients/clients with bulimia are first detected in the context of an oral health examination.
- Because purging by vomiting is often accomplished by the use of the index and middle fingers of the dominant hand, cuts and bruises, as well as callus formation over time, can occur where the teeth occlude at the knuckles. The dental hygienist can easily look at these fingers for a sign of disordered eating.
- Where regurgitation is a concern, the dental hygienist should consider polishing the patient/client’s teeth with a fluoride-containing toothpaste rather than with an abrasive prophylaxis paste.
- Radiographs, intraoral photographs, and/or study models are useful means to record progression of damage or monitor progress at each appointment.
- Patients/clients who self-induce vomiting should be counselled not to brush immediately after purging (and to wait at least 40 minutes). Instead, they should be advised to rinse with a baking soda solution to neutralize the effects of stomach acid. Tap water rinsing is less desirable, because it reduces the protective nature of saliva.

1. While a hitherto undiagnosed patient/client with an eating disorder will likely be first referred to a primary care provider (e.g., family physician) by a dental hygienist practising in Ontario, the patient/client may go on to receive specialized psychiatric care for these mental health disorders.
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**Oral management implications (con’t)**

- The dental hygienist should emphasize that purging damage to the teeth is permanent, and suggestions to reduce further damage (such as wearing a mouth guard during regurgitation) offer only interim solutions to minimize enamel loss – the definitive way to stop further damage is to cease continual regurgitation.
- Xerostomia should be managed as required.
- Oral health risk assessment conducted in a nonjudgmental fashion will facilitate identification of treatment needs, such as the use of home fluoride modalities. Recall frequency should be informed by the risk assessment.

**Oral manifestations**

- Nearly 50% of patients/clients with anorexia nervosa are also bulimic and may show oral signs of bulimia.
- Eating disorders that involve frequent vomiting can affect oral health directly via contact with vomit and indirectly via resultant nutritional deficiencies (including calcium, iron, and B vitamins). Parotid gland enlargement may occur, causing the jaw to widen and appear squarer. Xerostomia may develop (and be compounded by the dryness side-effect of certain antidepressant and anti-anxiety medications). Lips may be red, dry, and cracked. Angular cheilitis, glossitis, mucosal ulceration, bleeding tendency of the oral soft tissues, and halitosis (bad breath) can occur. Teeth may be altered in colour (translucency), length, and shape, and they may develop hypersensitivity to touch and cold and hot temperatures, as well as become brittle.
- Erosion of the lingual and/or occlusal surfaces of teeth is found in nearly 90% of bulimic patients/clients due to the acidic nature of vomit, and it can occur in as little time as 6 months. Restorations, which resist the acidic oral environment of patients/clients with eating disorders, appear elevated (“island like”) when the surrounding enamel is eroded, although longevity is undermined by continued purging activity due to continued loss of tooth structure.
- Traumatized oral mucosal membranes and pharynx (especially on the soft palate) result from continual self-induced vomiting, manifesting as erythema, scratches, cuts, and hematomas. Signs of trauma to the soft palate and pharynx may also be caused by foreign objects, such as a spoons or toothbrushes, used to induce vomiting. Cheek and lip bites may be present.
- Dental caries, gingival disease (manifesting as erythema, swelling, and and/or glossy appearance of the gums), periodontal disease, dentinal sensitivity, and salivary duct stones are other oral manifestations of eating disorders.
- The jawbone may be weakened by osteoporosis occurring in persons with anorexia nervosa. As well, degenerative arthritis with the temporomandibular joint is often associated with eating disorders, manifesting as pain in the joint area, chronic headaches, and problems chewing and opening/closing the mouth.

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2. In particular, the palatal surfaces of the maxillary anterior teeth are sometimes eroded with a glossy, smooth appearance.

3. Perimylolysis is the term applied to the wearing down of tooth enamel by mechanical or chemical means, the latter including repeated vomiting. It is sometimes characterized by loss of enamel with rounded margins, a notched appearance of the incisal surfaces of anterior teeth, and reduced contours on unrestored teeth.

4. Binge-eating disorder can lead to obesity, which may lead to diabetes with associated gum disease. There also may the problem of tooth decay due to repeated snacking.
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Related signs and symptoms

- Up to 1 million Canadians – and over 70 million persons worldwide - are estimated to be currently affected by serious eating disorders such as anorexia nervosa, bulimia nervosa, and binge-eating. While anyone can suffer from an eating disorder, the disorders are most common in teenage girls and young adult women. The male-to-female prevalence ratio for both anorexia and bulimia is between 1 to 6 and 1 to 10. The etiology eating disorders is multi-factorial, and it is theorized that a combination of psychological and biological factors lead to self-starvation, purging, and over-eating. Low self-esteem is a common characteristic.

- Anorexia nervosa involves an extreme fear of weight gain or becoming “fat” even though affected persons may be markedly underweight. Among females, lifetime prevalence is 0.5% to 3.7%, and the proportion of patients/clients with this disorder who fully recover is modest. It is most common in white women in higher socioeconomic groups. Individuals seek to maintain a low body weight by restricting food intake (often feeling “in control” of their eating and body weight), and they may also exercise excessively and/or binge-eat followed by purging behaviours such as self-induced vomiting or misuse of enemas, laxatives, or diuretics. Anorexia nervosa has the highest premature mortality rate of any psychiatric disorder, with the majority of deaths being due to physiological complications of starvation. Suicide rate is also elevated.

- Bulimia nervosa involves discrete periods of overeating (i.e., binge-eating, often involving food with high carbohydrate and fat content) – which may occur several times per week to several times per day – followed by purging (in the most common form of bulimia) or non-purging compensation activities (such as fasting or excessive exercise). Lifetime prevalence is 1.1% to 4.2% in females, with same rate in higher- and lower-income women. During the binge, the individual often feels out of control, and feelings of panic, disgust, or guilt set in. After the binge, the affected person engages in compensatory behaviours – usually of a purging nature – such as self-induced vomiting or misuse of enemas, laxatives, or diuretics. Persons with bulimia nervosa often have normal body weight.

- Binge-eating disorder affects nearly as many men as women, and is typically seen in middle-aged obese persons. Lifetime prevalence is about 2% for all people in Canada. The term describes individuals who binge-eat but do not routinely engage in inappropriate weight control behaviours such as fasting or purging. A sense of loss of control often accompanies the rapid consumption of large amounts of food, and feelings of guilt or shame may lead to repeated episodes of binge-eating. This condition tends not to be as disabling as anorexia or bulimia.

- Patients/clients with eating disorders can exhibit numerous signs and symptoms, such as secretive eating patterns; defecation difficulties (including chronic constipation that results from lethargic colon secondary to laxative abuse); dramatic loss of weight (in anorexia) or fluctuations in weight (in bulimia); hair loss, cold intolerance, dry skin, bradycardia (slow heart rate), disruption of menstrual cycle, and infertility (in anorexia); and chronic sore throat, electrolyte imbalance, dehydration, and irregular heart rhythms (in bulimic behaviour). Fatigue, fainting, mental fuzziness, hypoglycemia, anemia, osteopenia, osteoporosis, delayed and permanently stunted growth, and anal and bladder incontinence (associated with weak and damaged pelvic floor muscles) are other manifestations particularly associated with anorexia.

- Eating disorders can deprive the body of nutrients needed for maintenance of good health. Signs of malnutrition (particularly in persons with anorexia) include emaciated appearance (such as broomstick-like arms and legs); thin, dry, brittle, and reduced scalp hair; dry and brittle nails; cold sensitivity; and development of lanugo hair\(^5\). Heart rate slows, and blood pressure drops.

- Heart arrhythmias, heart failure, kidney failure electrolyte imbalance (particularly hypokalemia and related metabolic alkalosis), liver damage, and aspiration or rupture of the esophagus or stomach (from continual vomiting) can lead to death.

- Chronic ipecac syrup ingestion to induce vomiting can lead to fatal myocardial infarction.

- Compulsive overeating can cause obesity, predisposing the patient/client to diabetes mellitus.

5. Lanugo hair is soft, downy, unpigmented body hair, which is usually found on fetuses or newborn babies. When found in adults, it is almost exclusively related to anorexia nervosa.
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Related signs and symptoms (cont’t)

- Quality of life is negatively impacted by eating disorders. This includes damage to self-image and relationships with families and friends, as well as impaired school or work performance.
- Depression, anxiety, obsessive-compulsive behaviour, and substance abuse occur at elevated rates in patients/clients with eating disorders.
- Stigmatization of eating disorders means that many affected persons suffer in silence.

References and sources of more detailed information

- American Dental Association
  http://www.ada.org/en/member-center/oral-health-topics/anorexia-nervosa
- Dentalcare.com Continuing Education Course – Recognizing and Managing Eating Disorders in Dental Patients
- Statistics Canada – Eating Disorders
  http://www.statcan.gc.ca/pub/82-619-m/2012004/sections/sectiond-eng.htm
  http://www.parl.gc.ca/content/hoc/Committee/412/FEWO/Reports/RP6772133/feworp04/feworp04-e.pdf
- National Eating Disorder Information Centre
  http://nedic.ca
- Canadian Mental Health Association – British Columbia Division
  https://www.cmha.bc.ca/get-informed/mental-health-information/eating-disorders
- National Eating Disorders Association
  https://www.nationaleatingdisorders.org/dental-complications-eating-disorders
  https://www.nationaleatingdisorders.org/types-symptoms-eating-disorders
- Healthy Teeth Devon
- Healthy Teeth Devon

* Includes oral hygiene instruction, fitting a mouth guard, taking an impression, etc.
** Ontario Regulation 501/07 made under the Dental Hygiene Act, 1991. Invasive dental hygiene procedures are scaling teeth and root planing, including curetting surrounding tissue.

Date: July 20, 2016