Disease/Medical Condition

GASTROESOPHAGEAL REFLUX DISEASE

College of Dental Hygienists of Ontario
Protecting your health and your smile

Date of Publication: Sept. 7, 2016

(also known as "GERD" and "acid reflux disease"; GERD is further classified into "non-erosive disease" [NERD] and "erosive disease" [ERD])

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

- **Is medical consult advised? Yes, if previously undiagnosed (especially if symptoms/signs are recurrent or extend beyond 2 weeks) or poorly controlled GERD is suspected[1].**

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

- **Is medical consult advised?** ..... See above.
- **Is medical clearance required?** ..... No
- **Is antibiotic prophylaxis required?** ..... No
- **Is postponing treatment advised?** ..... No, not typically, unless GERD is of such active severity (e.g., continual belching or coughing) that the procedures can not be safely undertaken. In such cases, the patient/client should be referred to his/her gastroenterologist or primary care physician for timely medical management.

Oral management implications

- Early recognition of surface changes to the teeth is important for the management of GERD-related risk. The oral health professional may be the first person to detect the possibility of GERD, especially in the case of "silent refluxers".
- Lifestyle changes are an important part of managing GERD and reducing its impact on oral health. The dental hygienist can reinforce the importance of achieving and maintaining a healthy weight; eating small, frequent meals in an unhurried fashion; raising the upper body during sleep (e.g., by elevating the head of the bed); having nothing to eat and little to drink for 3 to 4 hours before going to bed; reducing pressure on the abdomen by avoiding clothes that fit tightly around the waist and by bending from the knees; avoiding slouching posture; avoiding trigger foods (e.g., chocolate; peppermint; garlic; onions; caffeinated, alcoholic, or carbonated beverages; and fried, fatty, spicy, or acid-containing[2] foods); and not smoking .
- The dental hygienist may apply topical fluoride to strengthen teeth.
- Treatment for tooth sensitivity may include desensitizing agents for in office and/or home use.
- Wearing an occlusal mouth guard at night may help prevent additional damage to the surfaces of teeth (i.e., protection against acid challenge and the additive damaging effects of bruxism).
- The patient/client should be advised <u>not</u> to brush immediately after the teeth are exposed to acid (whether from acid reflux or food or beverages), because brushing can cause more enamel loss. Instead, the patient/client should wait 30 to 60 minutes.

1. **Diagnostic tests** include upper endoscopy (in which a flexible tube with a light and camera is passed through the mouth into the esophagus and stomach) and barium x-ray (i.e., upper gastrointestinal [UGI] series in which a barium drink coats the lining of the upper digestive tract for imaging purposes). In addition to lifestyle/dietary changes, **medications** may be used to treat GERD. These include antacids, histamine H_2-receptor blockers/antagonists ("H_2-RAs" or "H_2-blockers", which reduce production of stomach acid; examples are ranitidine, famotidine, nizatidine, and cimetidine), proton pump inhibitors ("PPIs", which block production of stomach acid and are the most effective drugs to control GERD symptoms; examples are omeprazole, lansoprazole, pantoprazole, esomeprazole and rabeprazole), coating agents (e.g., sucralfate), and prokinetic (promotility) agents (e.g., metoclopramide and domperidone). Surgery (such as fundoplication, in which part of the stomach is wrapped around the esophagus to provide a one-way valve effect) is reserved for severe GERD resistant to lifestyle modification and medications.
2. particularly citrus fruits and tomatoes

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Oral management implications *(con't)*

- After reflux episodes, the patient/client should rinse the mouth, ideally with a baking soda solution (e.g., one teaspoon of baking soda in an 8-ounce glass of water) to neutralize acid attack. Tap water is less desirable. Alternatively, the patient/client may use a sugar-free antacid that dissolves in the mouth.
- Brushing teeth with low-abrasive formula toothpaste high in sodium bicarbonate will aid in neutralization of acids and minimize abrasion.
- Mint-flavoured products should be avoided, because they relax the lower esophageal sphincter.
- Xerostomia, medication-related or otherwise, should be proactively managed.
- Aspirin and non-steroidal anti-inflammatory drugs ("NSAIDs", such as ibuprofen and naproxen) should be avoided for pain management, because they can contribute to reflux and exacerbate esophagitis. Acetaminophen is preferable.
- Restorative options depend on the degree of dental erosion. They include the use of dentin bonding agents, resin-based varnishes, veneer restorations, and, in advanced erosion with a large amount of dentin exposure, orthodontic extrusion and full coverage restorations.

Oral manifestations

- Sore throat, gagging, water brash (flooding of the mouth with saliva), halitosis (bad breath), mucositis, and sour or bitter taste in the mouth may be manifestations of GERD.
- Enamel erosion may result from demineralization when reflux of stomach acids repeatedly enters the mouth. This erosion tends to be particularly pronounced on the palatal surfaces of the maxillary teeth, but erosion of the posterior teeth is also an important diagnostic finding. Often patients/clients are not aware of damage until the erosion is well advanced.
- The progressive steps of erosion are:
    - chalky or "frosted" appearance;
    - smooth, glazed appearance;
    - eroded and thinned enamel with pitted microcracks and a translucent appearance;
    - cupping of cusp edges of posterior teeth; and
    - flat occlusal surfaces.
- Tooth sensitivity can result from enamel erosion.
- Medications that reduce salivary function or otherwise contribute to oral acidity exacerbate stomach acid-induced dental erosion. Such drugs include certain antidepressants, antipsychotics, and bronchodilators.

Related signs and symptoms

- GERD is a severe, ongoing form of gastroesophageal reflux, in which the lower esophageal sphincter (LES)[3] allows reverse flow of acidic stomach contents into the esophagus (and less frequently also into the throat and mouth). In GERD, this retrograde flow of food, acids, and pepsin[4] causes troublesome symptoms and/or complications, and it irritates and inflames the esophageal lining. GERD episodes can occur both during sleep (nocturnal) and waking (daytime).

3. LES = valve between the between the esophagus and stomach
4. Pepsin is a digestive enzyme produced in the stomach.

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Related signs and symptoms *(cont'd)*

- "Heartburn" (also known as acid indigestion) is the characteristic burning sensation in the centre of the chest behind the sternum (breastbone), which can extend up into the throat. It typically becomes worse after eating, bending over, or lying down, and sometimes with physical activity. The pain can be severe and mimic that of a myocardial infarction.
- "Acid regurgitation" is the awareness of acid or partially digested food from the stomach refluxing into the esophagus (and occasionally into the throat and mouth).
- Other GERD manifestations include dysphagia (difficulty swallowing), odynophagia (pain on swallowing), excessive burping or belching, globus sensation (foreign body or lump sensation in the throat), chest pain, abdominal pain, nausea/vomiting, hoarseness (i.e., laryngitis due to acid-induced vocal cord injury), and respiratory signs (including chronic, non-productive cough; asthma-like wheezing due to acid reflux into the respiratory tree; and aspiration pneumonia).
- "Silent GERD", in which the patient/client is not aware of symptoms, is typically associated with reflux that occurs during sleep.
- 5 million Canadians experience heartburn/acid regurgitation at least once a week, with a quarter of pregnant women experiencing daily heartburn. The incidence of GERD increases markedly after age 40 years.
- Risk factors for GERD include obesity, pregnancy, hiatus hernia[5], obstructive sleep apnea, smoking, and certain foods.
- GERD is being increasingly recognized in infants and children, and it may produce repeated vomiting, failure to grow, dry coughing, asthma-like signs/symptoms, chronic rhinosinusitis and otitis media (middle ear infection).
- GERD is a chronic disease, and treatment usually needs to be maintained on a long-term basis, even after symptoms have been controlled.
- Left untreated, GERD can cause significant damage to the esophagus, including stricture from chronic scarring, ulcers, and bleeding. Prolonged, uncontrolled GERD can lead to Barrett's esophagus, a condition that increases the risk of developing esophageal cancer.

References and sources of more detailed information

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  http://www.dentistryiq.com/articles/wdj/print/volume-5/issue-2/special-section/continuing-education/understanding-acid-reflux-and-its-dental-manifestations.html

5. A hiatus hernia occurs when the upper part of the stomach and the lower esophageal sphincter move up into the chest through the diaphragm.

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References and sources of more detailed information *(cont'd)*

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* 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.

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