Use of the dental hygiene interventions of scaling of teeth and root planing including curetting surrounding tissue, orthodontic and restorative practices, and other invasive interventions for persons\(^1\) with diabetes type 1, 2 or gestational.

**Cite as**

*College of Dental Hygienists of Ontario, CDHO Advisory Diabetes Type 1, 2 or Gestational, 2014-10-14*

**INTERVENTIONS AND PRACTICES CONSIDERED**

Scaling of teeth and root planing including curetting surrounding tissue, orthodontic and restorative practices, and other invasive interventions (“the Procedures”).

<table>
<thead>
<tr>
<th>SCOPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISEASE/CONDITION(S)/PROCEDURE(S)</td>
</tr>
<tr>
<td>Diabetes type 1, 2 or gestational</td>
</tr>
</tbody>
</table>

**INTENDED USERS**

- Advanced practice nurses
- Dental assistants
- Dental hygienists
- Dentists
- Denturists
- Dieticians
- Health professional students
- Nurses
- Nutritionists
- Patients/clients
- Pharmacists
- Physicians
- Public health departments
- Regulatory bodies

**ADVISORY OBJECTIVE(S)**

To guide dental hygienists at the point of care relative to the use of the Procedures for persons who have diabetes type 1, 2 or gestational, chiefly as follows.

1. Understanding the medical condition.
2. Sourcing medications information.
3. Taking the medical and medications history.

\(^1\) Persons includes young persons and children
4. Identifying and contacting the most appropriate healthcare provider(s) for medical advice.
5. Understanding and taking appropriate precautions prior to and during the Procedures proposed.
6. Deciding when and when not to proceed with the Procedures proposed.
7. Dealing with adverse events arising during the Procedures.
8. Record keeping.

**TARGET POPULATION**

Child (2 to 12 years)
Adolescent (13 to 18 years)
Adult (19 to 44 years)
Middle Age (45 to 64 years)
Aged (65 to 79 years)
Aged, 80 and over
Male
Female
Parents, guardians, and family caregivers of children, young persons and adults with diabetes type 1 or 2.

**MAJOR OUTCOMES CONSIDERED**

For persons who have diabetes type 1, 2 or gestational: to maximize health benefits and minimize adverse effects by promoting the performance of the Procedures at the right time with the appropriate precautions, and by discouraging the performance of the Procedures at the wrong time or in the absence of appropriate precautions.

**RECOMMENDATIONS**

**UNDERSTANDING THE MEDICAL CONDITION**

**Terminology used in this Advisory**

Resources consulted
- Health Canada
- National Aboriginal Diabetes Association

1. Diabetes, a lifelong condition where either the body does not produce enough insulin or it cannot use the insulin it produces. The body needs insulin to change the blood sugar from food into energy.
2. Diabetes type 1, the body makes little or no insulin.
3. Diabetes type 2, the body makes insulin but cannot use it properly; nine out of ten persons with diabetes have type 2.
4. Gestational diabetes, the body is not able to properly use insulin during pregnancy; it vanishes after the baby is born.
5. **Blood glucose** and **blood sugar** are generally used to mean the same thing.
6. Hyperglycaemia, high blood glucose.
7. Hypoglycaemia, low blood glucose.
8. Palliative care, services of care for persons towards the end of life with terminal illnesses such as cancer, when the focus of the care
   a. is relieving symptoms
   b. attending to physical and spiritual needs.
9. Supportive care, services of care to help persons meet the physical, emotional and spiritual challenges arising from the condition or its treatment.

Overview of diabetes type 1, 2 and gestational

Resources consulted
- Canadian Diabetes Association 2008 Clinical Practice Guidelines
- American Diabetes Association Diabetes Pro

1. The goal of treating diabetes is to prevent its symptoms and long-term complications by keeping blood glucose as close to target levels as possible.
2. The physician works with the diabetes care team to help the patient/client to determine his or her target blood glucose levels.
3. With the Canadian Diabetes Association, the Canadian Medical Association advises persons with diabetes to self-monitor blood glucose levels. With readings taken at various times of day, after fasting and two hours after a meal, the physician is able to view variations in blood glucose levels and recommend treatments accordingly.
4. More than most conditions, treating diabetes requires significant self-care by the patient/client.
5. Coping with diabetes is a lifelong challenge, so persons with diabetes should not be afraid to speak with an appropriate healthcare provider if they feel overwhelmed.

Comorbidity, complications and associated conditions

Comorbid conditions are those which co-exist with diabetes type 1, 2 or gestational but which are not believed to be caused by it. Complications and associated conditions are those that may have some link with it. Distinguishing among comorbid conditions, complications and associated conditions may be difficult in clinical practice.

Resources consulted
- Canadian Diabetes Association

In Canada, the comorbidities, complications and associated conditions chiefly comprise

1. Amputation, non-traumatic.
2. Blindness, of which diabetes is the leading cause in adults.
3. Cardiovascular disease, the leading cause of death in diabetes; it occurs twice to four times more often than in those without diabetes.
4. Celiac disease (CDHO Advisory), which appears to be more common in people with type 1 diabetes than in the general population.
5. Depression (CDHO Advisory), which is diagnosed in about 25 percent of persons with diabetes; the combination of diabetes and depression is linked with poor compliance with treatment.
6. Digestive problems, which affect nearly 60 percent of persons, such as
a. constipation, the most common
  b. diarrhea
  c. delayed emptying of the stomach.

7. Heart attack or stroke (CDHO Advisory), from which 80 percent of diabetics will die.
9. Multiple chronic health conditions; in 11 percent of diabetics, three or more such chronic health conditions coexist; compared to the general population, these persons are
  a. 4 times more likely to be admitted to a hospital or a nursing home
  b. 7 times more likely to need home care
  c. 3 to 5 times more likely to see a healthcare provider.
10. Neuropathy, the end result of the slow process of damage that diabetes causes to sensory nerves especially in the hands and feet, which results in
  a. loss of sensation, so that foot injuries, such as blisters or cuts, pass unnoticed and untreated
  b. small foot injuries quickly becoming infected, with the risk of serious complications.
11. Oral problems, which include thrush and dry mouth, which can cause soreness, ulcers, infections and cavities.
12. Renal failure (CDHO Advisory), end-stage.
13. Skin problems, which affects as many as 33 percent of people with diabetes, are associated with high blood glucose levels during which
  a. the body loses fluid, leading to dry skin on the legs, feet and elbows
  b. skin cracks develop, facilitating infection
  c. resistance to infections is reduced
  d. healing is slowed.
14. Thyroid disorders which, like diabetes, involve the endocrine system (CDHO Advisory Hyperthyroidism), (CDHO Advisory Hypothyroidism).

Oral health considerations

Resources consulted
- Canadian Diabetes Association
- American Diabetes Association
- WebMD
- Mayo Clinic

1. Persons taking hypoglycemic drugs with or without insulin are at risk of hypoglycemia if they exceed the prescribed dose(s) or if they disrupt their normal intake of food.
2. Prior to dental treatment, persons with diabetes should have eaten and taken their medication as directed.
3. Diabetics treated with insulin may require an increase in dose if an acute oral infection develops; those treated with hypoglycemic agents may require adjunctive, short-term insulin. The physician manages the insulin needs; the oral healthcare provider treats the infection with local and systemic therapies, in liaison with the physician.
4. Persons with diabetes are at increased risk of serious oral disease, such as gingivitis and periodontitis, because they are generally more susceptible to bacterial infection and they have decreased ability to fight bacteria that invade the gums.
5. Children and teenagers who have diabetes are at greater risk of oral disease than those without diabetes.
6. If blood glucose levels are poorly controlled, diabetics are more likely to develop serious gum disease and lose more teeth than non-diabetics.
7. As with other infections, serious gum disease may be a factor in causing blood glucose to rise and in making diabetes harder to control.
8. Other oral problems associated with diabetes include thrush and dry mouth, which can cause soreness, ulcers, infections and cavities.

### MEDICATIONS SUMMARY

#### Sourcing medications information

1. Adverse effect database
   - Health Canada’s Marketed Health Products Directorate
     - toll-free 1-866-234-2345
   - Health Canada’s Drug Product Database

2. Specialized organizations
   - American Diabetes Association | Standards of Medical Care in Diabetes—2009
   - Canadian Diabetes Association
   - Diabetes Drug Information
   - US National Library of Medicine and the National Institutes of Health Medline Plus Drug Information
   - WebMD

3. Medications considerations
   - All medications have potential side effects whether taken alone or in combination with other prescription medications, or as over-the-counter (OTC) or herbal medications.

4. Information on herbals and supplements
   - US National Library of Medicine and the National Institutes of Health Medline Plus Drug Information All Herbs and Supplements


#### Types of medications

**Warnings**
- Individual medications may be subject to important warnings, which
  1. change from time to time
  2. may affect the appropriateness, efficacy or safety of the Procedures
  3. are accessible via the links to the particular medications listed below or through the specialized organizations listed above
  4. through the links, should be viewed by dental hygienists in the course of their familiarizing themselves about a medication or combination of medications identified in the patient/client’s medical and medications history.
Medications

1. Diabetes Type 1
   Persons with type 1 diabetes need insulin continuously for controlling their blood sugar
   - **insulin aspart** (NovoLog®)
   - **insulin detemir** (Levemir®)
   - **insulin glargine** (Lantus®)
   - **insulin injection** (Humulin R®, Novolin R®)
   - **insulin lispro injection** (Humalog®)
   To raise low blood sugar
   **glucagon**

2. Diabetes Type 2
   a. Medications for type 2 diabetes are usually taken orally in the form of tablets.
   b. The medications should always be taken around meal times, and as prescribed by the physician.
   c. When the blood glucose is not controlled by oral medications, the physician may recommend insulin injections.
   d. Medications used to lower blood glucose include oral diabetes medications (also called oral hypoglycemics) and injectable medications such as
      i. Sulfonylureas, widely recommended for type 2 diabetes; stimulate the pancreas to release more of its stored insulin and to increase the effectiveness of insulin in the body
         - **glyburide** (Diabeta®, Glynase®, Micronase®)
      ii. Biguanides, improve insulin sensitivity and reduce the glucose produced by the liver
         - **metformin** (Fortamet®, Glucophage®, Glucophage®, Glumetza®, Riomet®)
      iii. Acarbose, prolongs the absorption of carbohydrates after a meal. Must be taken with or after a meal
         - **acarbose** (Prandase®, Precose®)
      iv. Thiazolidinediones, improve insulin sensitivity
         - **pioglitazone** (Actos®)
         - **rosiglitazone** (Avandia®)
      v. Meglitinides, lower post-meal glucose levels by stimulating the pancreas to release more of its stored insulin
         - **nateglinide** (Starlix®)
         - **repaglinide** (Prandin®)
      vi. Incretin (GLP-1) Analogues, enhance insulin secretion and delay gastric emptying and suppress prandial glucagon secretion
         - **exenatide** (Byetta®) – *injected subcutaneously*
         - **liraglutide** (Victoza®) – *injected subcutaneously*
      vii. Dipetidyl Peptidase-4 (DPP-4) Inhibitors, inhibit enzymatic breakdown of GLP-1 and GIP and increase insulin secretion and decrease glucagon secretion
         - **linagliptin** (Tradjenta®)
         - **saxagliptin** (Onglyza®)
         - **sitagliptin** (Januvia®)
      viii. Amylin Analogues, aid absorption of glucose by slowing gastric emptying and promote satiety
         - **pramlintide** (Symlin®) – *injected subcutaneously*
   ix. Combination Drugs
Side effects of medications

See also the links to individual medications listed above.

Of particular relevance to oral healthcare, hypoglycemia may be favoured by ASA NSAIDs in high doses over long periods ketoconazole (Nizoral®) used to treat thrush

THE MEDICAL AND MEDICATIONS HISTORY

The medical and medications history-taking should

1. Focus on screening the patient/client prior to treatment decision relative to
   a. key symptoms
   b. medications considerations
   c. contraindications
   d. complications
   e. comorbidities.
2. Explore the need for advice from the appropriate primary or specialized care provider(s).
3. Inquire about
   a. patient/client’s having eaten and taken their medication as directed prior to the
      Procedures and oral healthcare treatment generally
   b. history of trouble keeping blood glucose levels under control
   c. diabetes-related problems with previous dental/dental hygiene care
   d. symptoms indicative of inadequate control of blood sugar
   e. the patient/client’s understanding and acceptance of the need for oral healthcare
   f. medications considerations, including over-the-counter medications, herbals and supplements
   g. problems with previous dental/dental hygiene care
   h. problems with infections generally and specifically associated with dental/dental hygiene care
   i. the patient/client’s current state of health
   j. how the patient/client’s current symptoms relate to
      i. oral health
      ii. health generally
      iii. recent changes in the patient/client’s condition.

IDENTIFYING AND CONTACTING THE MOST APPROPRIATE HEALTHCARE PROVIDER(S) FOR ADVICE

Identifying and contacting the most appropriate healthcare provider(s) from whom to obtain medical or other advice pertinent to a particular patient/client

1. Record the name of the physician/primary care provider most closely associated with the patient/client’s healthcare, and the telephone number.
2. Obtain from the patient/client or parent/guardian written, informed consent to contact the identified physician/primary healthcare provider.
3. Use a consent/medical consultation form, and be prepared to fax the form to the provider.
4. Include on the form a standardized statement of the Procedures proposed, with a request for advice on proceeding or not at the particular time, and any precautions to be observed.

UNDERSTANDING AND TAKING APPROPRIATE PRECAUTIONS

Diabetes

Resources consulted
- The American Diabetes Association’s recommendations preparatory to visiting the dentist

1. The best time for scaling of teeth and root planing including curetting surrounding tissue, orthodontic and restorative practices, and other invasive interventions is when the blood glucose level is in the target range and the diabetes medication action is low.
2. If the patient/client takes insulin, a morning visit after a normal breakfast is best.
3. The patient/client should have taken the usual medications unless the physician/primary care provider has recommended that the patient/client should change the dose or medication prior to the dental care.
4. The oral healthcare provider should consult with the physician/primary care provider to decide about adjustments in diabetes medications, or to decide if antibiotic prophylaxis is needed before invasive procedures to prevent infection.

Infection control

Dental hygienists are required to keep their practices current with infection control policies and procedures, especially in relation to
1. The Recommendations published by the Centers for Disease Control and Prevention.
2. Relevant occupational health and safety legislative requirements.
3. Relevant public health legislative requirements.
4. Best practices or other protocols specific to the medical condition of the patient/client.

DECIDING WHEN AND WHEN NOT TO INITIATE THE PROCEDURES PROPOSED

1. In an otherwise healthy patient/client whose blood glucose is close to target levels, who has taken medications as directed, and who has recently eaten, there is no contraindication to the Procedures.
2. With a patient/client whose symptoms are under control and whose treatment is proceeding normally, the dental hygienist should implement the Procedures, though these may be postponed pending medical advice, which is likely to be required if the patient/client
   a. is feeling or looks unwell
   b. gives a history of previous or existing problems such as infection, comorbidity, complication or an associated condition of diabetes type 1, 2 or gestational
   c. has not recently or ever sought and received medical advice relative to oral healthcare procedures
   d. has recently changed significant medications, under medical advice or otherwise
e. has recently experienced changes in his/her medical condition such as medication or other side effects of treatment
f. is deeply concerned about any aspect of his or her medical condition.

DEALING WITH ANY ADVERSE EVENTS ARISING DURING THE PROCEDURES

Resources consulted
- Canadian Diabetes Association Clinical Practice Guidelines S63 p.77

Focus of adverse event: hypoglycemia

1. The goals of treatment for hypoglycemia are to
   a. detect and treat a low blood glucose level promptly by using an intervention that provides the fastest rise in blood glucose to a safe level
   b. eliminate the risk of injury
   c. relieve symptoms quickly.
2. Classification of symptoms and severity of hypoglycemia
   a. MILD
      i. The individual is able to self-treat
      ii. The symptoms comprise
         1. Trembling
         2. Palpitations
         3. Sweating
         4. Anxiety
         5. Hunger
         6. Nausea
         7. Tingling
   b. MODERATE
      i. The individual is able to self-treat
      ii. The symptoms comprise
         1. Difficulty concentrating
         2. Confusion
         3. Weakness
         4. Drowsiness
         5. Vision changes
         6. Difficulty speaking
         7. Headache
         8. Dizziness
   c. SEVERE
      i. Individual requires assistance of another person
      ii. Unconsciousness may occur.
3. Treatment
   a. Mild to moderate hypoglycemia should be treated with the oral ingestion of
      i. 15 g of carbohydrate, preferably as glucose or sucrose tablets or solution
      OR
      ii. 15 mL (3 teaspoons) or 3 packets of table sugar dissolved in water.
b. **Severe hypoglycemia** in a conscious person should be treated by the oral ingestion of 20 g of carbohydrate, preferably as glucose tablets or equivalent  
   i. Patients/clients should be encouraged to wait 15 minutes, retest blood glucose and re-treat with another 15 g of glucose if the blood glucose level remains below 4.0 mmol/L.  
   ii. Severe hypoglycemia requires caregivers or support persons to call for emergency services; the episode should be discussed with the diabetes healthcare team as soon as possible.

**General**

1. Dental hygienists are required to initiate emergency protocols as required by the College of Dental Hygienists of Ontario’s [Standards of Practice](#), and as appropriate for the condition of the patient/client.  
2. First-aid provisions and responses as required for current certification in first aid.

**RECORD KEEPING**

Subject to [Ontario Regulation 9/08](#) Part III.1, *Records*, in particular S 12.1 (1) and (2)

For a patient/client with a history of diabetes type 1, 2 or gestational, the dental hygienist should specifically record  
1. A summary of the medical and medications history.  
2. Any advice received from the physician/primary care provider relative to the patient/client’s condition.  
3. The decision made by the dental hygienist, with reasons.  
4. Compliance with the precautions required.  
5. All Procedure(s) used.  
6. Any advice given to the patient/client.

**ADVISING THE PATIENT/CLIENT**

The patient/client is urged to alert any healthcare professional who proposes any intervention or test that he or she has a history of diabetes type 1, 2 or gestational.

Resources consulted

- [The American Diabetes Association’s recommendations](#)

The patient/client is strongly advised, as follows.  
1. Inform the oral healthcare provider of any problems with infections or trouble keeping the blood glucose levels under control.  
2. Eat before seeing the dentist or dental hygienist. The best time for dental work is when the blood glucose level is in the target range and the diabetes medication action is low. If insulin is taken, a morning appointment after a normal breakfast is best.  
3. Take the usual medications before a dental visit unless the dentist or physician advises change in the dose preparatory to dental surgery.  
4. The dentist should consult with the physician to decide about adjustments in the diabetes medicines, or to decide if an antibiotic is needed before surgery to prevent infection.
5. Stick to the normal meal plan after dental work. If chewing is difficult, plan how to get the calories needed. Consider use of the sick-day meal plan that calls for soft or liquid foods.

6. If the diabetes is in poor control, postpone scaling of teeth and root planing including curetting surrounding tissue, orthodontic and restorative practices, and other invasive interventions, and dental surgery until the blood glucose is better controlled.

7. If dental needs are urgent, such as pain or swelling, consult the dentist and physician about having dental treatment in a hospital or special setting where he or she can be monitored during and after surgery.

As appropriate, discuss

1. The importance of the patient/client’s
   a. self-checking the mouth regularly for suspicious signs or symptoms
   b. reporting to the appropriate healthcare provider any changes in the mouth indicative of suspicious lesions.

2. The need for regular oral health examinations and preventive oral healthcare.

3. Oral self-care including information about
   a. choice of toothpaste
   b. tooth-brushing techniques and related devices
   c. dental flossing
   d. mouth rinses
   e. management of a dry mouth.

4. The importance of an appropriate diet in the maintenance of oral health.

5. For persons at an advanced stage of a disease or debilitation
   a. regimens for oral hygiene as a component of supportive care and palliative care
   b. the role of the family caregiver, with emphasis on maintaining an infection-free environment through hand-washing and, if appropriate, wearing gloves
   c. scheduling and duration of appointments to minimize stress and fatigue

6. Comfort level while reclining, and stress and anxiety related to the Procedures.

7. Medication side effects such as dry mouth, and recommend treatment.

8. Mouth ulcers and other conditions of the mouth relating to diabetes type 1, 2 or gestational, comorbidities, complications or associated conditions, medications or diet.


General information for diabetic patients/clients

Resources consulted

- The American Diabetes Association

1. Gum disease: the most common problem affecting gums and teeth of persons with diabetes, though it also makes you prone to other mouth problems.

2. Oral infection: a cluster of germs causing problems in one area of your mouth.

3. Infection: can make your blood glucose hard to control. By planning ahead and discussing a plan of action with your oral healthcare provider and physician, you will be prepared to handle any adjustments required.

4. Fungal infections: persons with diabetes are more prone to fungal infections such as thrush. If you tend to have high blood glucose levels or take antibiotics often, you are even more likely to have thrush. It makes white (or sometimes red) patches in areas of your mouth, which become sore and may turn into ulcers.
5. Thrush: thrives in moist places that may be chafed or sore, for example under poorly fitting dentures. Stopping smoking and limiting the time dentures are worn can reduce the risk of getting thrush. If you think you have thrush or other infection, talk to your oral healthcare provider or physician.

6. Poor healing: with poorly controlled diabetes, you heal more slowly and you increase your chance of infection after dental surgery. For the best chance for good healing, keep the blood glucose under control before, during, and after surgery.

7. Dry mouth: may be caused by medications or high blood glucose levels. It can increase the risk of cavities because less saliva is available to wash away germs and take care of the acids they create. It may sometimes lead to other problems, such as salivary gland infections. Try drinking more fluids, or chewing sugar-free gum or sugar-free candy to help keep the saliva flowing. Saliva substitutes are available at pharmacies.

<table>
<thead>
<tr>
<th>BENEFITS/HARMS OF IMPLEMENTING THE RECOMMENDATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>POTENTIAL BENEFITS</td>
</tr>
<tr>
<td>1. Promotion of health through oral hygiene for persons who have diabetes type 1, 2 or gestational.</td>
</tr>
<tr>
<td>2. Reduction of the risk of hypoglycemia by</td>
</tr>
<tr>
<td>a. careful attention to the preparations for oral healthcare, with particular reference to minimizing the risk of hypoglycemia</td>
</tr>
<tr>
<td>b. generally increasing the comfort level of persons in the course of dental hygiene interventions</td>
</tr>
<tr>
<td>c. using appropriate techniques of communication</td>
</tr>
<tr>
<td>d. providing advice on scheduling and duration of appointments.</td>
</tr>
<tr>
<td>3. Reduction of risk of oral health needs being unmet.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>POTENTIAL HARMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Failing to recognize mild, moderate or severe hypoglycaemia during an oral healthcare visit.</td>
</tr>
<tr>
<td>2. Performing the Procedures at an inappropriate time, such as</td>
</tr>
<tr>
<td>a. when the patient/client has not eaten, has not taken medications as directed, or is not close to his/her blood glucose target</td>
</tr>
<tr>
<td>b. in the presence of complications for which prior medical advice is required</td>
</tr>
<tr>
<td>c. in the presence of acute oral infection without prior medical advice.</td>
</tr>
<tr>
<td>3. Disturbing the normal dietary and medications routine of a person with diabetes type 1, 2 or gestational.</td>
</tr>
<tr>
<td>4. Inappropriate management of pain or medication.</td>
</tr>
<tr>
<td>5. Causing infection.</td>
</tr>
<tr>
<td>6. Inappropriate management of pain or medication.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CONTRAINDICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTRAINDICATIONS IN REGULATIONS</td>
</tr>
</tbody>
</table>

Identified in the *Dental Hygiene Act, 1991 – O. Reg. 218/94 Part III*
<table>
<thead>
<tr>
<th>ORIGINALLY DEVELOPED</th>
<th>2009-11-24</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE OF LAST REVIEW</td>
<td>2014-10-14</td>
</tr>
</tbody>
</table>
| ADVISORY DEVELOPER(S)         | College of Dental Hygienists of Ontario, regulatory body  
Greyhead Associates, medical information service specialists |
| SOURCE(S) OF FUNDING           | College of Dental Hygienists of Ontario |
| ADVISORY COMMITTEE            | College of Dental Hygienists of Ontario, Practice Advisors |
| COMPOSITION OF GROUP THAT AUTHORED THE ADVISORY | Dr Gordon Atherley  
O StJ, MB ChB, DIH, MD, MFCM (Royal College of Physicians, UK), FFOM (Royal College of Physicians, UK), FACOM (American College of Occupational Medicine), LLD (hc), FRSA  
Dr Kevin Glasgow  
MD, MHSsc, MBA, DTM&H, CHE, CCFP, DABPM, FACHE, FCFP, FACPM, FRCPC  
Lisa Taylor  
RDH, BA, MEd  
Robert Farinaccia  
RDH, BSc |
| ACKNOWLEDGEMENTS              | The College of Dental Hygienists of Ontario gratefully acknowledges the Template of Guideline Attributes, on which this advisory is modelled, of The National Guideline Clearinghouse™ (NGC), sponsored by the Agency for Healthcare Research and Quality (AHRQ), U.S. Department of Health and Human Services.  
Denise Lalande  
Final layout and proofreading |