# College of Dental Hygienists of Ontario Advisory

## Advisory Title

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 Down syndrome.

## Advisory Status

Cite as

*College of Dental Hygienists of Ontario, CDHO Advisory Down Syndrome, 2018-10-08*

## Interventions and Practices Considered

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

## Scope

### Disease/Condition(s)/Procedure(s)

**Down syndrome**

## Intended Users

<table>
<thead>
<tr>
<th>Advanced practice nurses</th>
<th>Nurses</th>
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<tr>
<td>Dental assistants</td>
<td>Patients/clients</td>
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<tr>
<td>Dental hygienists</td>
<td>Pharmacists</td>
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<tr>
<td>Dentists</td>
<td>Physicians</td>
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<td>Denturists</td>
<td>Public health departments</td>
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<td>Dieticians</td>
<td>Regulatory bodies</td>
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<td>Health professional students</td>
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## Advisory Objectives

To guide dental hygienists at the point of care relative to the use of the Procedures for persons who have Down syndrome, chiefly as follows.

1. Understanding the medical condition.
2. Sourcing medications information.
3. Taking the medical and medications history.
4. Identifying and contacting the most appropriate healthcare provider(s) for medical advice.

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\(^1\) Persons includes young persons and children
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. Keeping records.

**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 Down syndrome.

**MAJOR OUTCOMES CONSIDERED**

For persons who have Down syndrome: 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
- ACC/AHA 2008 Guideline Update on Valvular Heart Disease: Focused Update on Infective Endocarditis | American College of Cardiology/American Heart Association Task Force on Practice Guidelines
- Down Syndrome: Medline Plus
- Information: Canadian Down Syndrome Society
- Practical Oral Care for People With Down Syndrome: National Institute of Dental and Craniofacial Research

Down syndrome, trisomy 21, is a genetic condition in which a person has 47 chromosomes instead of the usual 46.

Other terminology includes
1. Antibiotic prophylaxis, which often needs to be considered for persons with Down syndrome because
   a. more than half of all adult persons have some form of cardiac disorder
b. antibiotic prophylaxis against infective endocarditis is considered appropriate for persons at highest risk of adverse outcomes from infective endocarditis who undergo dental procedures that involve
   i. manipulation of
      1. gingival tissue
      2. periapical region of teeth
   ii. perforation of the oral mucosa

c. some of the cardiac disorders require decisions about the advisability or otherwise of antibiotic prophylaxis
   i. require advice from family physicians or specialists
   ii. depend on knowledge that is subject to uncertainty
   iii. may require a cardiology consultation.

2. Cataract, loss of transparency of the lens of the eye.
3. Glaucoma, increased pressure within the eye.
4. Strabismus, eyes that
   a. are misaligned
   b. point in different directions.
5. Hand-mouthing, putting the whole hand into the mouth.
6. Hematemesis, the vomiting of blood, which may be obviously red or have an appearance similar to coffee grounds.

Overview of Down syndrome

Resources consulted
- Basic Medical Surveillance Essentials for People with Down’s Syndrome: Down’s Syndrome Medical Interest Group
- Complications of Down's syndrome: NHS Choices
- Down Syndrome After Rerelease of American Academy of Pediatrics Health Increase in Incidence of Medically Treated Thyroid Disease in Children With Supervision Guidelines: Pediatrics
- Down Syndrome Myths and Truths: National Down Syndrome Society
- Down syndrome, article: MedlinePlus
- Down Syndrome, outline: MedlinePlus
- Down syndrome: DermNet NZ
- Down Syndrome: Eunice Kennedy Shriver National Institute of Child Health and Human Development
- Down syndrome: PubMed Health
- Facts about Down Syndrome: Centers for Disease Control and Prevention
- Genetics of Down Syndrome Treatment & Management, Medical Care: Medscape

Occurrence

Down syndrome
1. occurs in one in 781 live births in Canada
2. is the most common single cause of human birth defects
3. is associated with health problems, developmental delays and learning disabilities
4. is variable in its effects
   a. 85 percent in all children with Down syndrome survive the first year of life
   b. over 50 percent of persons with Down syndrome live beyond 50 years of age
5. correlates in incidence with maternal age at conception, as follows.

<table>
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<th>Maternal age (yr)</th>
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<tr>
<td>15–29</td>
<td>1 in 1500</td>
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<tr>
<td>30–34</td>
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<td>35–39</td>
<td>1 in 270</td>
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<td>40–44</td>
<td>1 in 100</td>
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<td>&gt; 45</td>
<td>1 in 50</td>
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**Cause**

*Down syndrome* arises when the body has an extra copy of chromosome 21, which causes problems in the development of the body and brain.

**Risk factors**

*Down syndrome* is associated with

1. risk to a mother of giving birth to a child with Down syndrome that increases as she gets older
2. risk to
   a. babies, of problems with breast feeding because of poor tongue control
   b. older children and adults, of obesity
   c. adolescents, males and females, of sexual abuse and other types of abuse.

**Signs and symptoms**

*Down syndrome* signs and symptoms (see also multimedia and images)

1. vary from person to person
2. range from mild to severe
3. include physical signs, which may not be visible in the new-born child, such as
   a. body frame: relatively small
   b. cheeks: chubby
   c. ears: small
   d. eyes: variously
      i. large and round
      ii. with inner corners that are rounded instead of pointed
      iii. with an upward slant
      iv. with white or brownish grey spots on the iris
   e. face: flat
   f. feet: small
   g. hands
      i. small, short and wide
      ii. with deep creases in the palm
      iii. with short fingers
   h. head: may be round with a flat area on the back
   i. height: most children with the condition never reach their expected average adult height
   j. joints between the bones of the skull: separated
   k. ligaments: loose
l. mouth
   i. small
   ii. tongue: relatively large
m. muscles
   i. tone: decreased at birth
   ii. motor development: slow
n. neck
   i. short
   ii. lax ligaments
o. nose: flattened
p. skin: excess at the nape of the neck

4. involve delayed mental and social development, manifested in
   a. attention span: short
   b. behaviour: impulsive
   c. emotions: frustration and anger resulting from growing awareness of limitations
   d. intellectual abilities and adaptive behaviours: limited
   e. judgment: poor
   f. language development: delayed
   g. learning: slow

5. manifest as seizures (CDHO Advisory) that
   a. commonly resemble epileptic seizures, with jerking of arms and legs, and loss of consciousness
   b. may involve staring spells and momentary lapses of attention
   c. affect five to ten percent of persons with Down syndrome, several times the frequency in the general population
   d. affect more older than younger adults

6. are linked with numerous comorbidities, complications and associated conditions.

Medical investigation

Down syndrome is
1. confirmed as a diagnosis after birth
2. detected by prenatal screening
3. investigated soon after birth with tests that include
   a. chromosome studies
   b. echocardiogram to detect heart defects
   c. ECG
   d. X-rays of the chest and gastrointestinal tract
4. screened closely with
   a. dental examinations, every 6 months
   b. hearing tests, every 6–12 months
   c. pap smears and pelvic examinations, beginning during puberty or by age 21
   d. thyroid testing, every 12 months
   e. X-rays of the upper or cervical spine between ages 3–5 years
   f. eye examinations, every 12 months during infancy.

Treatment

Down syndrome
1. lacks a cure
2. despite considerable effort, continues to lack widely accepted medical treatments for the mental retardation associated with the condition
3. has seen vast improvements in care for children and adults with the condition, which
   a. have brought
      i. considerably improved quality of life
      ii. increased life expectancy
      iii. to many persons productive lives well into adulthood
   b. involve
      i. medical care, health monitoring and healthy living
         1. of relevance to oral healthcare
            a. providing antibiotic prophylaxis during oral healthcare procedures
            b. addressing swallowing difficulties, which may persist throughout the adolescent years
            c. providing oral hygiene services
      2. generally
         a. providing behavioural training to
            i. encourage independence
            ii. help persons and their families deal with the person’s frustration, anger, and compulsive behaviour
         b. providing children with
            i. exercises for gross and fine motor skills
            ii. integration into normal classes at school
            iii. occupational therapy
            iv. special education and attention at school
            v. speech and language therapy focused on expressive language and intelligibility
         c. preventing obesity by
            i. decreasing caloric intake and increasing activity
            ii. emphasizing a well-balanced diet
         d. following protocols usual for well children, including
            i. immunizations
            ii. childcare generally
            iii. oral healthcare
         e. effectively treating skin infections with
            i. antibiotic ointment or systemic antibiotic therapy
            ii. frequent bathing or showering
            iii. normal hygiene
            iv. weight reduction
         f. providing annual hearing, eye tests and other screening
         g. encouraging social and recreational programs with friends
         h. evaluating and treating behavioural problems, such as
            i. disruptive behaviour disorders
            ii. eating problems
            iii. elimination difficulties
iv. phobias
v. self-injurious behaviour
i. evaluating and treating psychiatric disorders, such as depression, and self-talk.

Prevention
Down syndrome is controlled to some degree by
1. genetic counseling for persons with a family history of Down syndrome
2. Down syndrome screening tests.

Prognosis
Down syndrome prognosis
1. is improving because persons with the condition are living
   a. longer than ever before
   b. independent and productive lives well into adulthood despite physical and mental limitations
2. is clouded by
   a. heart problems at birth, which
      i. affect about 50 percent of children with the condition
      ii. if severe may lead to early death
   b. certain types of leukemia (CDHO Advisory) which may cause early death
   c. dementia (CDHO Advisory) which may occur in adults with the condition.

Social considerations
Down syndrome social factors
1. create family and family caregiver needs for help with
   a. supportive care or counseling
   b. respite care, and behaviour management techniques
   c. referrals for respite care
   d. parenting problems
   e. transferring the child to adult health care
2. involve planning requirements for
   a. alternative long-term living arrangements such as community living
   b. updating of estate planning and custody arrangements
3. draw on support groups, such as those in
   a. Canada
      ▪ Canadian Down Syndrome Society
      ▪ Down Syndrome Association of Toronto
   b. US
      ▪ National Down Syndrome Congress
      ▪ National Down Syndrome Society.

Multimedia and images
Genetics of Down Syndrome
Comorbidity, complications and associated conditions

Comorbid conditions are those which co-exist with Down syndrome 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.

Comorbid conditions, complications and associated conditions for Down syndrome are as follows.

1. Death during adolescence from complications of
   a. congenital heart disease
   b. infections
   c. leukemia (CDHO Advisory).

2. Physical health conditions and birth defects, including
   a. celiac disease (CDHO Advisory)
   b. congenital heart disease that
      i. occurs with varying degrees of severity in up to 50 percent of children compared to less than one percent in the general population
      ii. is the most common cause of death in early childhood
      iii. includes
         1. atrial septal defect
         2. ventricular septal defect
         3. atrioventricular septal defect
   c. developmental delay, which is common to all children with Down syndrome though it may not be apparent until the child is beyond infancy
   d. eye disorders, which occur in 60 percent of children, and which include
      i. congenital cataracts
      ii. far-sightedness, near-sightedness
      iii. glaucoma
      iv. strabismus
   e. gastrointestinal abnormalities which cause
      i. complete obstruction of the small intestine in two to five percent of children
      ii. poor movement abilities of the colon and or rectum in two percent of persons
   f. hearing impairment, caused by malformations of the middle or inner ear structures, and present to some degree in 40 to 75 percent of children
   g. thyroid disorders, which
      i. occur in about five percent of children
      ii. include hypothyroidism (CDHO Advisory)
   h. immunological compromise
   i. leukemia (CDHO Advisory) which occurs some 20-times more often than in the general population
   j. skeletal problems
   k. sleep apnea (CDHO Advisory) which may affect as many as one in two persons.
3. Neuropsychological conditions, including
   a. anxiety (CDHO Advisory)
   b. dementia (CDHO Advisory) which
      i. occurs as Alzheimer’s disease from the age of 40 onwards
      ii. affects as many as 85 percent of older persons with Down syndrome
   c. depression.
4. Physical vulnerabilities and susceptibilities, including
   a. airway blockage during sleep
   b. teeth that appear later than normal and in a location that may cause problems with chewing
   c. chronic constipation
   d. compression injury of the spinal cord
   e. hip problems, with risk of dislocation
   f. weakness of the spine at the top of the neck
   g. increased susceptibility to infections of the
      i. endocardium
      ii. respiratory system
      iii. ears, resulting eventually in hearing loss
      iv. eyes
   h. gastrointestinal blockage manifested in early and massive vomiting.

Oral health considerations

Resources consulted

- Dental Care for the Patient with Down Syndrome | Down Syndrome: Health Issues
- Down Syndrome and Sleep-Disordered Breathing: Journal of the American Dental Association
- Managing health problems in people with intellectual disabilities: British Medical Journal (subscription required)

Down syndrome and its comorbidities, complication and associated conditions create various considerations in the delivery of oral healthcare; these include
1. the need to obtain and review the patient/client’s medical history prior to a dental hygiene appointment, necessary for
   a. assembling an accurate medical history consulting with physicians, family and other caregivers
   b. determining who can legally provide informed consent for treatment, which is important because
      i. the ability of the patient/client to give informed consent to treatment may be in question because
         1. he or she provides seemingly clear answers to questions that, in fact, he or she insufficiently understands
         2. consent is valid only when the patient/client
            a. is provided with sufficient and understandable information to enable the decision-making
            b. understands the information provided
            c. is capable of
i. acting voluntarily and not merely in response to pressure
   ii. taking the particular decision
   iii. weighing the information

ii. where the patient/client appears unable to give consent that would be considered valid, it may have to be provided by a substitute decision-maker

2. consideration of antibiotic prophylaxis during the Procedures when the medical history suggests cardiac conditions

3. care with head and neck movements because of the possibility of musculoskeletal instability of the neck owing to ligament laxity

4. consideration of problems with the respiratory system, with particular reference to the potential for airway obstruction

5. providing and encouraging effective dental hygiene involving
   a. well organized professional care aimed at ensuring sufficiency in the use and effectiveness of
      i. oral health services
      ii. oral hygiene at home
   b. fluoride treatments, good dietary habits, and restorative care
   c. understanding of the pattern of dental caries in Down syndrome, in which
      i. some children and young adults may have fewer caries than persons without the syndrome, a clinical situation rooted in
         1. oral abnormalities such as
            a. delayed eruption of primary and permanent teeth
            b. missing permanent teeth
            c. small-sized teeth with wider spaces between them, facilitating plaque removal
         2. dietary supervision of children with Down syndrome aimed at combating obesity, which helps reduce consumption of cariogenic foods and beverages
      ii. some adults with Down syndrome are at an increased risk of caries because of
          1. xerostomia
          2. cariogenic food choices
          3. muscle flaccidity, which contributes to chewing problems and inefficient natural cleansing action, allowing food to remain on the teeth after eating
   d. oligodontia
   e. periodontal disease

6. the possibility that the patient/client has health needs that
   a. are unmet, unrecognized or misunderstood
   b. may create secondary health conditions in the mouth or elsewhere in the body

7. limited oral, verbal or reading skills that may impede the patient/client in
   a. accepting advice or treatment
   b. persisting with oral-hygiene self-care

8. dietary and nutritional problems, such as
   a. obesity
   b. refusal to eat
9. gastrointestinal problems, such as
   a. constipation associated with
      i. intestinal obstruction due to inhibition of bowel motility which may result if constipation remains undetected for too long
      ii. medications
      iii. mobility problems
   b. gastro-esophageal reflux disease (CDHO Advisory) manifestations of which include
      i. dental erosion
      ii. hand-mouthing
      iii. hematemesis
      iv. increased risk of esophageal cancer
10. epilepsy, which may create physical danger during the provision of oral healthcare
11. behavioural problems which
   a. may constitute the patient/client’s means of communicating toothache or mouth pain, among other physical, mental, or social discomforts
   b. may impede cooperation during the provision of oral healthcare
   c. may reflect psychiatric problems, such as dementia
12. overmedication, possibly arising because of
   a. healthcare providers’ difficulties in interpreting the patient/client’s symptoms
   b. delay or vagueness in reporting health problems
   c. the patient/client’s difficulties with adherence to a medication plan
13. questions of discrimination may arise if a particular treatment is deemed inappropriate for an individual patient/client on grounds of
   a. intellectual disability
   b. communication problems
14. lack of clarity on the part of the patient/client or the family or other caregiver about treatment and its continuity, a challenge which can be addressed with a written oral healthcare treatment plan that
   a. is periodically and systematically reviewed
   b. persons or their family caregivers can use for communications with oral and other healthcare professionals
   c. identifies new oral health needs and tracks progress against those previously observed
   d. records conditions drawn to the attention of other healthcare providers
   e. enables family and other caregivers to make and keep notes, and to bring these for subsequent oral healthcare appointments.

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
   - 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

5. Complementary and alternative medicine
   - National Center for Complementary and Integrative Health

Types of medications

Medications are available for treating effects, comorbidities, complications and associated conditions of Down syndrome, but not the condition itself.

Available medications include
1. antibiotics, for
   a. antibiotic prophylaxis for cardiac conditions
   b. respiratory tract infections
   c. ear infections
2. anticonvulsants, for seizures
3. anxiolytics, for relief of anxiety
4. digitalis and diuretics, for cardiac management
5. laxatives, for constipation, a particular problem with Down syndrome
6. pain medication
7. pneumococcal and influenza vaccination, for children with chronic cardiac and respiratory disease
8. respiratory medications, such as metered dose inhalers
9. thyroid hormone, for hypothyroidism, to
   a. prevent intellectual deterioration
   b. improve the person’s overall function, academic achievement, and vocational abilities.

Side effects of medications used with Down syndrome

In the absence of evidence to the contrary, the side effects of medications used for Down syndrome are likely to be the same as those reported for persons without Down syndrome.

The medical and medications history-taking should
1. consider the need for special techniques of communication with the patient/client
2. focus on screening the patient/client prior to treatment decision relative to
a. key symptoms  
b. medications considerations  
c. contraindications  
d. complications  
e. comorbidities  
f. associated conditions

3. explore the need for advice from the primary or specialized care provider(s)

4. inquire about  
   a. pointers to cardiac defects, such as a history of previous use of antibiotic prophylaxis
   b. symptoms indicative of inadequate control of Down syndrome, such as behavioural and communication problems
   c. the patient/client’s understanding and acceptance of the need for oral healthcare
   d. medications considerations, including over-the-counter medications, herbals and supplements
   e. problems with previous dental/dental hygiene care
   f. problems with infections generally and specifically associated with dental/dental hygiene care
   g. the patient/client’s current state of health
   h. 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

The dental hygienist should
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

Infection Control

Dental hygienists are required to keep their practices current with infection control policies and procedures, especially in relation to

1. the CDHO’s Infection Prevention and Control Guidelines (2019)
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. Initiation of invasive dental hygiene Procedures is contra-indicated if the patient/client has any cardiac condition for which antibiotic prophylaxis is recommended in the guidelines set by the American Heart Association (AHA) unless the dental hygienist has consulted with either the patient/client’s physician, dentist, or registered nurse in the extended class and determined that it is appropriate to proceed if the patient/client has taken the prescribed medication per the AHA guidelines.

2. With an otherwise healthy 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 may be required if the patient/client has
   a. a history of
      i. heart defects or problems, and who may need antibiotic prophylaxis
      ii. comorbidity, complication or associated condition of Down syndrome
      iii. epilepsy or other effects of Down syndrome which could jeopardize physical safety during the Procedures
   b. not recently or ever sought and received medical advice relative to oral healthcare procedures
   c. recently changed significant medications, under medical advice or otherwise
   d. recently experienced changes in his/her medical condition such as medication or other side effects of treatment
   e. expressed or whose family caregiver has expressed deep concern about any aspect of his or her medical condition.

**DEALING WITH ANY ADVERSE EVENTS ARISING DURING THE PROCEDURES**

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.

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 Down syndrome, 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

1. The dental hygienist should in conjunction with the patient/client and the family or other caregiver
   a. use **special techniques of communication**, as required
   b. urge the patient/client or family caregiver to alert any healthcare professional who proposes any intervention or test
      i. that he or she has a history of Down syndrome
      ii. to the medications he or she is taking
   c. should carefully and appropriately explain
      i. swollen, cracked lips, mouth ulcers, dry mouth, and other conditions observed in the mouth
      ii. the oral health implications of delayed and or irregular eruption sequence of teeth
      iii. infection control within the oral cavity
      iv. the importance of the family caregiver or the patient/client’s
         1. checking the mouth regularly for new signs or symptoms
         2. reporting to the appropriate healthcare provider any changes in the mouth
      v. the need for regular oral health examinations and preventive oral healthcare
      vi. oral self-care including information about
         1. choice of toothpaste
         2. tooth-brushing techniques and related devices
         3. dental flossing
         4. mouth rinses
         5. management of a dry mouth, especially associated with medications
         6. adjuncts to oral self-care, such as reducing infection risk from toothbrushes with chemical rinses
      vii. the importance of
         1. an appropriate diet in the maintenance of oral health, which involves
            a. non-cariogenic foods and beverages
            b. avoiding candies and sweet foods as rewards
         2. adjustments to scheduling and duration of appointments to minimize stress and fatigue
         3. comfort level while reclining, and stress and anxiety related to the Procedures
      viii. pain management.

2. The dental hygienists’ communications for providing advice to or taking the medical or oral health history of the patient/client should
   a. begin by first acknowledging the patient/client, prior to addressing the family or other caregiver
   b. be addressed as far as possible to the patient/client, though, as required, an accompanying person should supplement the information provided by the patient/client
c. include a check of verbal capacities for imbalance between receptive and expressive language skills; even when the person has limited or absent verbal skills, the history-taking should assume competence, and
   i. request the person to allow the accompanying caregiver to interpret
   ii. where communication is non-verbal may include the use of communication aids
   iii. be accompanied by a request to the person/client or caregiver for sight of treatment plans and available medical documentation and prescription lists, so these can be updated if necessary
   iv. make clear that if the person wants the accompanying caregiver to leave during the consultation, the request will be respected
d. focus on abilities, not disabilities
e. rely not only on words but also on pictures, gestures, and body language
f. take account of challenging behaviour, to identify patterns associated with pain or discomfort
g. be phrased in respectful language, unrushed in delivery and accompanied by explanations understandable to the patient/client.

**BENEFITS/HARMS OF IMPLEMENTING THE RECOMMENDATIONS**

**POTENTIAL BENEFITS**

1. Promoting health through oral hygiene for persons who have Down syndrome.
2. Reducing the adverse effects, such as stress by
   a. generally increasing the comfort level of persons in the course of dental hygiene interventions
   b. using appropriate techniques of communication
   c. providing advice on scheduling and duration of appointments.
3. Reducing the risk that oral health needs are unmet.

**POTENTIAL HARMs**

1. Causing oral healthcare to be avoided or neglected because of inadequate communication with the patient/client or family or other caregiver.
2. Performing the Procedures at an inappropriate time, such as
   a. in the absence of
      i. consideration of any requirement for antibiotic prophylaxis
      ii. necessary medical information relative to the patient/client’s medical condition, comorbidities, complications and associated conditions
   b. in the presence of acute oral infection without prior medical advice.
3. Disturbing the normal dietary and medications routine of a person with Down syndrome.
4. Inappropriate management of pain or medication.

**CONTRAINDICATIONS**

**CONTRAINDICATIONS IN REGULATIONS**

Identified in the *Dental Hygiene Act, 1991 – O. Reg. 218/94 Part III*
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<td>Greyhead Associates, medical information service specialists</td>
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<td>College of Dental Hygienists of Ontario</td>
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<thead>
<tr>
<th>ADVISORY COMMITTEE</th>
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<tr>
<td>College of Dental Hygienists of Ontario, Practice Advisors</td>
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<tr>
<th>COMPOSITION OF GROUP THAT AUTHORED THE ADVISORY</th>
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<tbody>
<tr>
<td>Dr Gordon Atherley</td>
</tr>
<tr>
<td>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</td>
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| Dr Kevin Glasgow                |
| MD, MHSc, MBA, DTM&H, CHE, CCFP, DABPM, LFACHE, FCFP, FACPM, FRCPC |

| Lisa Taylor                    |
| RDH, BA, MEd, MCOD             |

| Giulia Galloro                |
| RDH, BSc(DH)                  |

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<th>ACKNOWLEDGEMENTS</th>
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<tr>
<td>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.</td>
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| Denise Lalande                |
| Final layout and proofreading |

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