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 with amyotrophic lateral sclerosis.

Cite as
College of Dental Hygienists of Ontario, CDHO Advisory Amyotrophic Lateral Sclerosis, 2018-07-16

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

Amyotrophic lateral sclerosis

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

To guide dental hygienists at the point of care relative to the use of the Procedures for persons who have amyotrophic lateral sclerosis, 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.

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

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 amyotrophic lateral sclerosis.

MAJOR OUTCOMES CONSIDERED

For persons who have amyotrophic lateral sclerosis: 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
- A Guide to ALS Patient Care For Primary Care Physicians: ALS Society of Canada
- Amyotrophic Lateral Sclerosis: National Institute of Neurological Disorders and Stroke

Amyotrophic lateral sclerosis
1. is also called
   a. Lou Gehrig’s disease
   b. ALS
   c. upper and lower motor neuron disease
   d. motor neuron disease.
2. is a rapidly progressive, invariably fatal neurological disease
   a. that attacks in the brain and spinal cord the neurons that control voluntary muscle movement
   b. in which the neurons
      i. waste away or die
      ii. eventually are no longer able to send the neural messages to muscles, leading to
         1. muscle weakening, twitching, and inability to move the arms, legs, and body
2. Loss of the ability to breathe.

Other terminology used in this Advisory is as follows.

1. Acute respiratory acidosis, occurs following abrupt failure of ventilation, and which may be caused by amyotrophic lateral sclerosis and other neuromuscular diseases.
2. Apnea, a period of time during which breathing stops or is markedly reduced.
3. Disinhibition, undue impulsiveness and recklessness in social situations.
4. Dysarthria, speech disorder caused by impairment of the muscles involved in speaking.
5. Dyspnea, shortness of breath at rest.
6. Executive deficit, impairment of executive functions that
   a. comprise cognitive abilities to control and regulate abilities and behaviours
   b. are necessary for goal-directed behaviour, such as
      i. starting and stopping actions
      ii. monitoring and changing behaviour as needed
      iii. planning future behaviour in response to novel tasks and situations
      iv. anticipating outcomes and adapting to changing situations
      v. forming concepts and thinking abstractly.
7. Fasciculations, muscle twitches that
   a. are fine movements of a small area of muscle
   b. may be signs of amyotrophic lateral sclerosis.
8. Flaccidity, lack of tone of muscular or other tissue.
9. Frontotemporal dementia, a progressive neurological condition caused by degeneration of the frontal and/or anterior temporal lobes, that
   a. seems to be associated with dementia (CDHO Advisory), a complication, comorbidity or associated condition of amyotrophic lateral sclerosis
   b. results in personality, behavioural, and cognitive changes
   c. occurs in a small percentage of persons with amyotrophic lateral sclerosis.
11. Hyperorality, changes in eating habits, which in amyotrophic lateral sclerosis may
    a. include carbohydrate cravings
    b. include profound changes in the style of eating such as
       i. loss of table manners
       ii. eating beyond the point of satiety
    c. result in weight gain, which
       i. counteracts the weight loss associated with the muscle wasting associated with amyotrophic lateral sclerosis
       ii. may even be life threatening
    d. result in coughing and choking episodes during eating and drinking.
13. Neurons are
    a. cells of the nervous system that are specialized to carry electrochemical messages
    b. classified by the direction in which they send the messages
       i. sensory neurons, also called afferent neurons, that send messages from sensory receptors to the central nervous system
       ii. motor neurons, also called efferent neurons, that
          1. send messages from the central nervous system to muscles or glands
2. comprise
   a. upper motor neurons, which reside in the part of the brain’s cortex that governs movement
   b. lower motor neurons, which reside in the spinal cord
   c. include interneurons, which transmit messages between sensory neurons and motor neurons.

14. Sialorrhea, excess saliva

Overview of amyotrophic lateral sclerosis

Resources consulted
- About ALS: ALS Association
- Amyotrophic lateral sclerosis: ALS Society of Canada
- Cognitive and behavioral challenges in caring for patients with frontotemporal dementia and amyotrophic lateral sclerosis: Amyotrophic Lateral Sclerosis
- Executive dysfunction is a negative prognostic indicator in patients with ALS without dementia: Neurology
- Motor Neuron Diseases: National Institute of Neurological Disorders and Stroke
- Resources: The International Alliance and ALS/MND Associations
- Respiratory Acidosis: Medscape

Amyotrophic lateral sclerosis

1. presents a clinical picture of a devastating neurodegenerative disease which
   a. causes progressive paralysis by degeneration and death of motor neurons, which cease sending messages to particular muscles
   b. prevents muscles from functioning, which leads to their weakening, wasting, and twitching.

2. affects
   a. over 350,000 of the world’s population, and kills more than 100,000 people every year
   b. about 5 out of every 100,000 people worldwide
   c. some 2,500–3,000 Canadians
   d. people of all races and ethnic backgrounds
   e. men more often than women.

3. occurs
   a. most commonly between 40 and 70 years of age, but may also develop earlier
   b. apparently at random without known cause or clearly associated risk factors in 90 to 95 percent of all cases, which is called the sporadic form, and in which
      i. there is no family history of the condition
      ii. family members of an affected person are not considered to be at increased risk
   c. as an inherited condition in about 5 to 10 percent of all cases, which is called the familial form, and which usually results from a pattern of inheritance that requires only one parent to carry the gene responsible for the condition.

4. creates signs and symptoms that
   a. do not usually develop until after age 50, though these may start earlier
   b. in the earliest manifestations of
      i. are often so minor that they are frequently overlooked
ii. include some combination of
   1. muscle twitching, cramping, or stiffness
   2. muscle weakness affecting an arm or a leg
   3. slurred and nasal speech
   4. difficulty chewing or swallowing

c. progress to more noticeable effects, the nature of which depends on the
   muscles that are first involved, and which may variously
   i. involve one leg, resulting in
      1. awkwardness in walking or running
      2. tripping or stumbling more often
   ii. involve one hand or arm, resulting in difficulty with simple tasks
      requiring manual dexterity, such as
      1. fastening buttons
      2. writing
      3. turning a key in a lock
   iii. affect speech

d. advance as muscle weakness and atrophy spread to other parts of the body,
   resulting variously in growing evidence of
   i. effects of upper motor neuron degeneration on
      1. muscles and reflexes, such as
         a. spasticity
         b. hyperreflexia
         c. contractures
      2. mouth and throat, such as
         a. dysarthria
         b. overactive gag reflex
         c. dysphagia
         d. sialorrhea
      3. dyspnea
      4. excessive fatigue
      5. weight loss
   ii. effects of lower motor neuron degeneration, such as
      1. muscle weakness and atrophy that involves the diaphragm
      2. muscle cramps
      3. fasciculations
      4. hyporeflexia
      5. flaccidity

e. development to the point at which the person
   i. is unable to
      1. stand
      2. walk
      3. get in or out of bed unaided
      4. use the hands and arms
      5. eat normally, resulting in
         a. risk of choking
         b. problems maintaining weight
   ii. becomes anxious and depressed because of the progressive loss of function
The only medication currently approved by Health Canada for treatment of ALS is riluzole, which inhibits release of glutamate and extends survival time (prolongs by about 4 months). An additional drug, edaravone, has been approved in several countries (including the USA), and is currently undergoing review by Health Canada.

iii. may variously
   1. have unaffected cognitive abilities
   2. develop problems with memory or decision-making
   3. display emotional liability manifested as uncontrollable, often inappropriate laughing or crying
   4. develop a dementia-related condition (CDHO Advisory)

iv. has reached the stage at which the respiratory muscles have weakened so much that
   1. the ability to breathe unassisted is lost
   2. survival depends on ventilator support
   3. pneumonia becomes a significant risk.

5. is investigated clinically
   a. only with difficulty because amyotrophic lateral sclerosis
      i. has yet to yield a reliable biological marker of an abnormality shared by all persons with the condition
      ii. exhibits symptoms similar to those of various other, more treatable disorders
   b. with
      i. examinations of
         1. muscle
            a. strength and endurance
            b. tremors, spasms, and twitching
            c. atrophy
         2. functions such as
            a. walking
            b. controlling of crying or laughing
      ii. tests, such as
         1. respiratory function
         2. CT or MRI
         3. electromyography
         4. genetic testing for a family history of the condition
         5. nerve conduction
         6. swallowing studies.

6. is treated
   a. symptomatically because it lacks
      i. a known cure
      ii. sustained effective treatment
      iii. explanation of why it strikes some persons and not others
   b. ideally by multidisciplinary teams of healthcare professionals all working to an individualized care plan, with the intention of
      i. relieving symptoms
      ii. maintaining mobility

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2 The only medication currently approved by Health Canada for treatment of ALS is riluzole, which inhibits release of glutamate and extends survival time (prolongs by about 4 months). An additional drug, edaravone, has been approved in several countries (including the USA), and is currently undergoing review by Health Canada.
iii. promoting independence
iv. improving quality of life
v. strengthening unaffected muscles
vi. improving cardiovascular health
vii. alleviating fatigue and depression
viii. preventing painful spasticity and shortening of muscles
ix. maintaining nourishment with foods that are easy to swallow
x. avoiding choking
xi. maintaining oral health
xii. improving the loudness and clarity of speech
xiii. recommending assistive devices such as
   1. ramps, braces, walkers, and wheelchairs that help persons conserve energy and remain mobile
   2. aids for maintaining oral health
   3. suction for removal of excess fluids and saliva
   4. in-dwelling feeding tubes
   5. speech synthesizers
   6. ventilators
c. by providing information support for persons and family caregivers, including
   i. explanations of the course of the condition
   ii. descriptions of available treatment options
   iii. discussion of options in the final stages of the condition with the loss of the ability to breathe without ventilator support
   iv. advice in obtaining financial aid, arranging durable power of attorney, preparing a living will, and finding support groups for persons and family caregivers
   v. techniques in the use of devices
   vi. advice for end-of-life situations.
7. is compounded by comorbidities, complications and associated conditions.
8. presents a negative prognosis when expressed
   a. as the pattern of development, which
      i. starts with local involvement
      ii. progresses to
         1. quadriplegia
         2. inability to speak, swallow and ultimately to breathe
   b. as life expectancy, which reflects experience that
      i. death commonly occurs from respiratory failure within 3–5 years of the onset of symptoms
      ii. 25 percent survive for 5 years or more years
      iii. 10 percent survive for 10 or more years
   c. as negative prognostic indicators, which include
      i. dementia (CDHO Advisory)
      ii. comorbid frontotemporal dementia
      iii. executive dysfunction in persons with amyotrophic lateral sclerosis but without dementia.
9. invokes challenging social considerations that involve
   a. emotional support, which is essential for the person in making end-of-life decisions about such matters as ventilation support
   b. family caregiving, which is physically, mentally and even financially exhausting
Comorbidity, complications and associated conditions

Comorbid conditions are those which co-exist with amyotrophic lateral sclerosis 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 of amyotrophic lateral sclerosis include:
1. aspiration of food or fluid
2. dysphagia
3. loss of ability for self-care
4. impairment of interpersonal interactions and relationships
5. loss of mobility
6. respiratory complications
   a. acute respiratory acidosis
   b. respiratory failure
   c. pneumonia
7. pressure sores
8. weight changes
   a. loss due to muscle wasting
   b. excessive gain in weight due to hyperorality
9. cognitive and behavioural complications when amyotrophic lateral sclerosis, dementia (CDHO Advisory) and frontotemporal dementia are comorbid, which produces changes that
   a. vary in their effects from mild to profound
   b. variously include
      i. aggression, with moodiness, frustration, or anger
      ii. apathy, depression and fatigue
      iii. emotional changes, including
         1. blunting of emotional reactions
         2. lack of concern or empathy for the welfare of others
         3. self-centeredness
      iv. executive deficits
      v. irritability
      vi. loss of insight
      vii. poor judgment and impulsivity
      viii. rigidity and compulsivity
      ix. social disinhibition

Oral health considerations

Resources consulted
- Oral Care for the Patient with ALS: The ALS Association
- The ALS Association
For amyotrophic lateral sclerosis, good dental hygiene practice

1. may require immediate action during oral healthcare in response to adverse events resulting from rapidly developing changes in the patient/client’s clinical condition manifested by one or more of
   a. increased difficulty in swallowing
   b. difficulty breathing
   c. apnea.

2. is important for all persons with the condition as it progresses and for whom the earliest symptoms may be difficulty chewing or swallowing.

3. requires particular consideration for persons receiving all their nutrition and fluids via feeding tubes with the aim of
   a. maintaining oral health generally
   b. reducing production of harmful oral bacteria
   c. reducing the risk of pneumonia from aspiration of food, fluids or transient bacteria found in the mouth.

4. includes consideration for the special challenges that the condition introduces, including
   a. increasing difficulty for the person and eventually also the caregiver in performing oral care
   b. effects of the disease on
      i. arms and hands, making reaching up to the mouth fatiguing, strenuous, or impossible for the person
      ii. swallowing, which may become impaired to the extent that excess water and toothpaste in the mouth may create a choking risk
   c. malfunction of the gag reflex
   d. exaggerated reflexes.

5. includes consideration of drooling, which
   a. arises because the person’s management of the normal production of saliva is impaired by reduced control of tongue, lips, and swallowing
   b. is not caused by excessive production of saliva, though leakage from poor lip seal may give the appearance of excessive production
   c. results in pooling of saliva anteriorly, a position in which the swallowing process is not fully triggered
   d. may result in accumulation of saliva and mucus sufficient to disrupt sleep and increase choking risk
   e. may be managed with glycopyrrolate, atropine, amitriptyline, or scopolamine patches which may produce side effects of
      i. dryness of the mouth
      ii. constipation
   f. may require the use of a portable suction device.

6. may be a factor in reducing the risk of choking on thick mucus, which can be life-threatening, and thereby help avoid the need for secretion management by tracheotomy.

7. should be considered for edentulous patients/clients, who should receive routine inspections of the oral cavity to ensure that existing oral disease does not progress or that poor oral health does not ensue.

8. may involve consideration of reduction of intake of dairy products if these appear to be undermining oral health.

9. should emphasize and support the role of the family caregiver, whose tasks include
a. communicating openly and effectively with the person, especially as
   i. the person’s actions and activities of daily living come to increasingly rely on the help of family caregivers
   ii. persons with amyotrophic lateral sclerosis may have difficulty expressing their needs for oral healthcare

b. organizing and promoting communications and understanding between the person and all the professional care providers

c. combating the person’s fatigue, with the aim of maintaining independence and autonomy, necessary elements for the person’s well-being and quality of life

d. maintaining oral care as a necessary component of the daily routines, especially as oral care becomes more and more difficult for the person and the family caregiver

ez. organizing oral healthcare when office visits are difficult or no longer manageable for person and their family caregivers with or without special arrangements, such as
   i. dental office wheelchair accessibility
   ii. procedures for providing treatment to patients/clients in wheelchairs
   iii. preparation time needed to get client ready prior to appointment
   iv. awareness of special needs of the individual patient/client, such as tiring easily during a procedure
   v. acknowledgement of the patient/client’s wishes about the nature and intensity of care provided
   vi. provision of oral healthcare for patients/clients at home or in residential facilities.

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

1. to slow the progress of the condition
   - riluzole (Rilutek®)
2. to relieve swallowing problems, drooling and excess saliva
   - amitriptyline (Elavil®, Endep®, Vanatrip®)
   - benztropine (Cogentin®)
   - glycopyrrolate (Robinul®)
   - scopolamine (Transderm Scōp®)
   - trihexyphenidyl (Artane®, Trihexane®)
3. to relieve muscle stiffness, spasms, cramps and twitching
   - baclofen (Lioresal® Intrathecal)
   - dantrolene (Dantrium®)
   - diazepam (Valium®, Valrelease®)
   - tizanidine (Zanaflex®)
4. to combat emotional lability, anxiety, and depression
   - amitriptyline (Elavil®, Endep®, Vanatrip®)
   - antidepressants
   - diazepam (Valium®, Valrelease®)
   - fluvoxamine (Luvox®)
   - lorazepam (Ativan®, Loxorazepam Intensol®)

Side effects of medications

See the links above to the specific medications.

THE MEDICAL AND MEDICATIONS HISTORY

The dental hygienist in taking 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
   f. associated conditions
2. explore the need for advice from the primary or specialized care provider(s)
3. inquire about
   a. pointers in the history with particular significance for the Procedures, such as symptoms of problems with swallowing, choking and breathing
   b. the patient/client’s understanding and acceptance of the need for oral healthcare
   c. medications considerations, including over-the-counter medications, herbals and supplements
   d. problems with previous dental/dental hygiene care
   e. problems with infections generally and specifically associated with dental/dental hygiene care
   f. the patient/client’s current state of health
| 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

<table>
<thead>
<tr>
<th>The dental hygienist should</th>
</tr>
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<tbody>
<tr>
<td>1. record the name of the physician/primary care provider most closely associated with the patient/client’s healthcare, and the telephone number</td>
</tr>
<tr>
<td>2. obtain from the patient/client or parent/guardian written, informed consent to contact the identified physician/primary healthcare provider</td>
</tr>
<tr>
<td>3. use a consent/medical consultation form, and be prepared to fax the form to the provider</td>
</tr>
<tr>
<td>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.</td>
</tr>
</tbody>
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| 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 |

For a patient/client whose condition is well controlled, there is no contraindication to the procedures though, as muscle weakness and control deteriorates, the Procedures and dental hygiene management techniques will need to be adapted.

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 may be required if the patient/client has

| 1. symptoms or signs or a history of swallowing, choking or breathing problems |
| 2. comorbidity, complication or an associated condition of amyotrophic lateral sclerosis |
| 3. not recently or ever sought and received medical advice relative to oral healthcare procedures |
| 4. recently changed significant medications, under medical advice or otherwise |
| 5. recently experienced changes in his/her medical condition such as medication or other side effects of treatment |
| 6. deep concerns 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 amyotrophic lateral sclerosis, 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

As appropriate, discuss with the patient/client and family caregiver

1. oral hygiene and the role of food particles and bacterial plaque in causing gingivitis and tooth decay
2. preventive program components such as bacterial plaque control, fluorides, pit and fissure sealants, diet counseling, and appropriate intervals for follow-up
3. regimens and techniques for use by the family caregiver that
   a. emphasize maintaining an infection-free environment through hand-washing and, if appropriate, wearing gloves
   b. support brushing the person’s teeth when her or she is confined to a wheelchair
   c. reflect the needs of persons at an advanced stage of the condition
   d. provide an important component of supportive care and palliative care
4. use of assistive devices, such as
   a. electric toothbrushes, relative to hand and arm weakness
   b. portable suction devices for swallowing difficulties sufficient to preclude conventional brushing
5. flossing, which may be a greater challenge than brushing, and flossing alternatives
6. mouth rinses, of the various types, with recognition that swallowing difficulties may limit or preclude their use
7. the importance and techniques of denture care, especially with decline in control of the musculature of the cheeks and tongue leading to potential accumulation of unswallowed food, bacterial and fungal growth
8. changes in saliva production associated with medications or with breathing through the mouth, and use of saliva substitutes
9. the negative oral health consequences of a softer diet introduced to compensate for weakening of the swallowing musculature, which may require increased attention to oral hygiene
10. the positive role of oral care in conjunction with assisted ventilation, with reference to the prevention of pneumonia or other respiratory infection
11. scheduling and duration of appointments for patients/clients when tiring and fatigue are to be considered, including home care
12. comfort level while reclining, and stress and anxiety related to the Procedures
13. mouth ulcers and other conditions of the mouth relating to amyotrophic lateral sclerosis, comorbidities, medications or diet
14. infection control within the oral cavity
15. pain management.

**BENEFITS/HARMS OF IMPLEMENTING THE RECOMMENDATIONS**

**POTENTIAL BENEFITS**

1. Promoting health through oral hygiene for persons who have amyotrophic lateral sclerosis.
2. Reducing the adverse effects, such as stress and exacerbation of fatigue, 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. Providing support for the family caregivers of persons with amyotrophic lateral sclerosis.
4. Reducing the risk that oral health needs are unmet.

**POTENTIAL HARMs**

1. Causing a choking emergency.
2. Performing the Procedures at an inappropriate time, such as
   a. in the absence of clear understanding of the patient/client’s needs and preferences
   b. in the presence of a history indicative of the need for prior medical advice, especially
      i. swallowing, choking or breathing difficulties
      ii. acute oral infection.
3. Disturbing the normal dietary and medications routine of a person with amyotrophic lateral sclerosis.
4. Inappropriate management of pain or medication.

**CONTRAINDICATIONS**

**CONTRAINDICATIONS IN REGULATIONS**

Identified in the *Dental Hygiene Act, 1991 – O. Reg. 218/94 Part III*

**ORIGINALLY DEVELOPED**

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- **Denise Lalande**
  - Final layout and proofreading

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