Use of the dental hygiene interventions of scaling of teeth and root planing including curett ing surrounding tissue, orthodontic and restorative practices, and other invasive interventions for persons with lupus.

Cite as
College of Dental Hygienists of Ontario, CDHO Advisory Lupus, 2012-01-01

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

Lupus, chiefly systemic lupus erythematosus

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 lupus, 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.

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 lupus.

**MAJOR OUTCOMES CONSIDERED**

For persons who have lupus: 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
- DermIS
- Lupus Canada
- Lupus Foundation of America
- Systemic lupus erythematosus: PubMed Health

Terminology varies among centres; the following is used for the purposes of this Advisory.

Lupus is a long-term **autoimmune disorder** that
1. is characterized by acute and chronic inflammation of various tissues of the body in which
   a. the immune system turns against tissues it normally protects
   b. the consequence is damage to body parts such as
      i. blood vessels
      ii. brain
      iii. heart
      iv. joints
v. kidneys
vi. lungs
vii. skin.

2. is termed
   a. cutaneous lupus erythematosus when only the skin is involved
   b. systemic lupus erythematosus when internal organs are involved

3. also is variously referred to as discoid lupus, disseminated lupus erythematosus, lupus erythematosus.

Other terminology used in this Advisory is as follows.

1. Autoimmune disorder (CDHO Advisory), a condition that
   a. occurs when the immune system erroneously attacks and destroys healthy body tissue
   b. occurs as more than 80 different types of autoimmune disorder (CDHO Advisory)
   c. may be treated with immunosuppression (CDHO Advisory) to control or reduce the immune system’s response.

2. Bullous systemic lupus erythematosus, a serious but rare disease in persons who have antibodies against their own mouth and skin.

3. Cutaneous lupus erythematosus, lupus erythematosus of the skin, an uncommon group of skin disorders which
   a. most often affect women aged 20 to 50
   b. also affect
      i. children
      ii. the elderly
      iii. males
   c. may also occur in sub-acute form.

4. Discoid lupus erythematosus, a chronic form of cutaneous lupus erythematosus involving
   a. a red, raised rash on the face, scalp, or elsewhere
   b. raised areas that may
      i. become thick and scaly
      ii. lead to scarring
   c. durations of days or years
   d. possible recurrences.

5. Drug-induced lupus, caused by medications of various types, of which the symptoms and signs
   a. resemble those of systemic lupus erythematosus
   b. typically disappear when the drug is stopped.

6. Flare, an unpredictable episode of lupus, followed by remission, which may be triggered by
   a. sunlight
   b. stress
   c. certain medications
   d. pregnancy.

7. Herpes simplex labialis (fever blisters)
   a. common in the general population
   b. when associated with lupus may require antiviral drugs.
8. Immune system
   a. is a network of cells, tissues, and organs that work together to defend the body against attacks by infection-causing biological agents, for which the body is otherwise an ideal environment, such as
      i. bacteria
      ii. fungi
      iii. parasites
      iv. viruses
   b. recognizes and destroys substances containing antigens, which are molecules
      i. mostly of proteins
      ii. on the surface of cells, bacteria, parasites, fungi and viruses
      iii. of nonliving substances such as
         1. chemicals
         2. foreign particles
         3. medications
         4. toxins
   c. normally recognizes the body’s own cells’ antigens and, with the help of human leukocyte antigens, does not react against them.
9. Lesion, a term variously and loosely used in medicine to refer to such things as
   a. any abnormality of tissue in the body, including the mouth and skin
   b. any localized abnormal structural change in a bodily part
   c. a mass especially before a definite diagnosis is established
   d. cancer
   e. an injury to living tissue, such as a cut or break in the skin.
10. Mucosal discoid lupus erythematosus
    a. the most frequent form of cutaneous lupus erythematosus
    b. occurs on oral mucosa only in association with discoid lupus erythematosus
    c. most commonly affects the inner cheeks, often with associated lip lesions which, though usually asymptomatic, become painful when ulcerated.
11. Opportunistic infections
    a. occur because of a weakened immune system
    b. are a particular cause of death for people with acquired immunodeficiency syndrome (AIDS) because the human immunodeficiency virus (HIV) causes death by impairing the immune system.
12. Oral aphthae, aphthous stomatitis canker sores, a recurrent disease of the oral mucosa of unknown cause characterized by
    a. small white round or oval ulcerative lesions
    b. two to eight crops of lesions occurring at one time
    c. lasting for 7 to 14 days and then healing without scarring.
13. Oral cancer, an increased risk for skin and mucosal cancer for immunosuppressed individuals, including people with lupus who are receiving immunosuppressive therapy.
14. Oral candidiasis (thrush), a common complication of immunosuppressive therapy, characterized by sharply defined patches of whitish layers which, when removed, leave an underlying erythematous base.
15. Oral ulcer, an open lesion, often painful, inside the mouth or upper throat, an alternative name for
    a. mouth ulcer
    b. aphthous ulcer
16. Sicca syndrome
   a. a term reserved for the combination of dryness of the mouth and eyes, regardless of cause
   b. when accompanied by lymphocyte infiltration of the salivary glands is named Sjögren syndrome.

17. Sjögren’s syndrome (CDHO Advisory), a serious, systemic, chronic autoimmune disease that occurs with lupus and which
   a. is considered to be one of the most prevalent autoimmune diseases
   b. is often under-recognized and under-treated
   c. causes xerostomia
   d. most commonly attacks and damages the salivary, tear and mucous-secreting glands, resulting in dry mouth or swollen salivary glands
   e. may cause arthritis, painful weak muscles, neuropathy and debilitating fatigue
   f. may result in inflammation of the
      i. blood vessels
      ii. brain
      iii. gastrointestinal system
      iv. kidneys
      v. liver
      vi. lungs
      vii. thyroid gland.

18. Stevens-Johnson syndrome, a rare complication of mucosal herpes outbreaks
   a. triggered by medications, most commonly sulfa drugs, anticonvulsants, and analgesics
   b. is characterized by
      i. severe erosions of at least two mucosal surfaces with extensive necrosis of the lips and mouth
      ii. purulent conjunctivitis.

19. Sub-acute cutaneous lupus erythematosus, skin lesions that
   a. appear on parts of the body exposed to sunlight
   b. do not cause scarring.

20. Systemic lupus erythematosus, the form of the disease generally referred to as lupus
   a. usually first affects persons aged 15 to 45 years
   b. also occurs in childhood and in the later adulthood
   c. is characterized by
      i. arthritis
      ii. rash
      iii. fever
      iv. chest pain.

21. Toxins, substances that
   a. are released by microorganisms such as bacteria
   b. are created by plants and animals and that are also poisonous to humans
   c. include medications that are helpful in therapeutic doses but harmful when used in an excess amount.

22. Xerostomia, abnormal dryness of the mouth resulting from decreased secretion of saliva, variously caused by
a. sicca syndrome
b. Sjögren syndrome (CDHO Advisory)
c. some medications.

Overview of lupus

Resources consulted
- Fact Sheets: Lupus Canada
- Lupus: Mayo Clinic
- Lupus: MedlinePlus
- Lupus: The Arthritis Society
- Stevens-Johnson Syndrome: DermIS
- Systemic lupus erythematosus: PubMed Health
- Understanding Lupus: Lupus Foundation of America
- What Is Lupus?: National Institute of Arthritis and Musculoskeletal and Skin Diseases

Occurrence

Lupus
1. occurs in the form of a complex disease characterized by
   a. flares and periods of remission
   b. warning signs of a flare that include
      i. abdominal discomfort
      ii. dizziness
      iii. fever
      iv. headache
      v. increased fatigue
     vi. pain
     vii. rash

2. occurs as
   a. bullous systemic lupus erythematosus, a serious but rare disease in persons who have antibodies against their own mouth and skin.
   b. cutaneous lupus erythematosus, lupus erythematosus of the skin, an uncommon group of skin disorders
   c. discoid lupus erythematosus, a chronic form of cutaneous lupus erythematosus
   d. drug-induced lupus, caused by medications of various types, of which the symptoms and signs resemble those of systemic lupus erythematosus
   e. mucosal discoid lupus erythematosus, the most frequent form of cutaneous lupus erythematosus
   f. systemic lupus erythematosus, the form of the disease generally referred to as lupus

3. occurs
   a. in some 50,000 Canadians, mostly women in their childbearing years
   b. much more commonly in women than men
   c. at any age, but most often in persons between the ages of 10 and 50
   d. in persons of African and Asian origin more often than in persons of other races.

Cause

Lupus
1. is an autoimmune disorder of which the underlying causes
Lupus

Risk factors
Lupus increases susceptibility to infection because
1. it directly impairs the immune system, which reduces the body's defences against opportunistic infection
2. many of the medications used to treat it
   a. suppress the function of the immune system
   b. have oral side effects.

Signs and symptoms
of lupus
1. vary from person to person
2. may derive from severe, even life-threatening comorbidities, complications or associated condition
3. may come and go
4. usually include pain and swelling of joints
5. commonly include
   a. chest pain associated with deep breathing
   b. fatigue, which is extreme
   c. fever without apparent cause
   d. general discomfort, uneasiness, or malaise
   e. hair loss of an unusual nature
   f. lymph node swelling
   g. oral ulcers
   h. rash exacerbated by sunlight
      i. over the cheeks and bridge of the nose, termed the "butterfly" rash
      ii. involving other regions of skin
   i. sensitivity to the sun
   j. swelling of the legs or around the eyes
6. may relate to specific organs
   a. brain and nervous system
      i. headaches
      ii. numbness
      iii. tingling
      iv. seizures
      v. vision problems
      vi. personality changes
   b. gastrointestinal system
      i. abdominal pain
      ii. nausea and vomiting
   c. heart, arrhythmias
   d. lungs
      i. blood in sputum
      ii. dyspnea
e. lymph glands, swelling
f. skin
   i. patchy skin colour
   ii. Raynaud’s phenomenon

7. muscles, joints and limbs
   a. arthritis of the
      i. fingers
      ii. hands
      iii. knees
      iv. wrists
   b. painful or swollen joints and muscle pain
   c. pale or purple fingers or toes in response to cold or stress.

**Medical investigation**

of lupus involves
1. physical examination for the typical signs
2. investigations such as
   a. antinuclear antibody panel
   b. complete blood count
   c. chest x-ray
   d. kidney biopsy
   e. urinalysis.

**Treatment**

of lupus
1. lacks a cure but
   a. symptoms can be effectively controlled with medications
   b. most persons with lupus can lead active, healthy lives
2. requires individualized regimens, which may include
   a. for the milder manifestations
      - antimalarials
      - low-dose corticosteroids
      - corticosteroid creams
      - nonsteroidal anti-inflammatory medications
   b. for the more severe manifestations
      - immunosuppressive drugs
      - high-dose corticosteroids
   c. aggressive specialized treatment, including surgery, for comorbidities, complications or associated conditions

**Prevention**

for lupus, no means of prevention exists but for its comorbidities, complications and associated conditions, preventive care is essential, such as
1. bone mineral density tests for osteoporosis
2. immunizations that are kept up to date
3. preventive cardiac care
4. protective clothing, sunglasses, and sunscreen for exposure to sunshine
5. therapeutic and social approaches to counter depression and mood changes.
Prognosis
for lupus
1. is related to its severity
2. has improved in recent years
3. during pregnancy, with appropriate treatment, is good for a normal pregnancy and delivery of a healthy infant, though the prognosis may be clouded by complications such as
   a. severe kidney disease
   b. heart disease
   c. the presence of lupus antibodies.

Social considerations
Persons with lupus benefit from reliable information resources and opportunities to connect with others facing the challenges of this condition, resources include
- Lupus Foundation of Ontario
- Lupus Ontario
- The Lupus Foundation of America
- The National Institute of Arthritis and Musculoskeletal and Skin Diseases

Multimedia and images
- Antibodies
- Lupus, discoid – view of lesions on the chest
- Lupus, discoid on a child’s face
- Stevens-Johnson Syndrome
- Systemic lupus erythematosus
- Systemic lupus erythematosus rash on the face

Comorbidity, complications and associated conditions
Comorbid conditions are those which co-exist with lupus 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 lupus are as follows.
1. Blood
   a. anemia of chronic disease (CDHO Advisory)
   b. hemolytic anemia
   c. thrombocytopenia
2. Central nervous system stroke (CDHO Advisory)
3. Circulatory system deep vein thrombosis
4. Heart
   a. coronary heart disease
   b. endocarditis
   c. myocarditis
5. Kidney
   a. kidney failure
   b. lupus nephritis

6. Lungs
   a. pleural effusions
   b. pulmonary embolism

Oral health considerations

Adapted from
  - Lupus Foundation of America
  - Oral health and the masticatory system in juvenile systemic lupus erythematosus

1. A person with lupus is at increased susceptibility to infection because
   a. it directly affects the immune system, which reduces the body’s defences against infection
   b. many of the medications used to treat it
      i. suppress the function of the immune system
      ii. have oral side effects.

2. With valvular heart disease
   a. the valve damage creates the risk of infective endocarditis with interventions that cause transient bacteremia, such as the Procedures
   b. antibiotic prophylaxis may be required.

3. The oral mucosa is one of the most common sites of lupus lesions, though internists, rheumatologists, and even dermatologists, sometimes omit examination of the mucous membrane; lesions include
   a. bullous systemic lupus erythematosus.
   b. mucosal discoid lupus erythematosus
   c. oral apthae, which
      i. affect up to 15 percent of the general population
      ii. occur more frequently with lupus.

4. Non-specific mucosal lesions in lupus often occur secondary to immunosuppression or other therapies, variously including
   a. herpes simplex labialis
   b. oral cancer
   c. oral candidiasis
   d. Stevens-Johnson syndrome

5. Initial research
   a. found statistical correlation between plaque and gingival bleeding and
      i. duration of juvenile systemic lupus erythematosus
      ii. cumulative dose of prednisone
   b. suggests an association between juvenile systemic lupus and inadequate oral hygiene, higher incidence of gingivitis and temporomandibular joint dysfunction.
MEDICATIONS SUMMARY

Sourcing medications information

1. Adverse effect databases
   - 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 Alternative Medicine

Types of medications

1. Immunosuppressive drugs (cytotoxic drugs)
   a. are used to reduce the lupus symptoms, prevent damage to vital organs, and help achieve remission
   b. are used only when lupus is active, especially in the presence of severe kidney problems
   c. are usually coupled with corticosteroids, with the intention of reducing the dose of corticosteroids
   d. suppress the over-active immune system, so most of these drugs may increase susceptibility to infection
   e. help treat severe lupus; they suppress inflammation and the immune system, and often are given in combination with corticosteroid drugs
   f. include
      i. azathioprine (Imuran®, Azasan®) immunosuppressive drug in the treatment of more severe cases of lupus
      ii. cyclophosphamide (Cytoxan®, Neosar®), one of the most potent immunosuppressive therapies; used to treat serious lupus manifestations such as nephritis
      iii. methotrexate (Rheumatrex®, Trexall®), is used for people with milder lupus manifestations that cause arthritis or pleuritis
      iv. mycophenolate (CellCept®, Myfortic®) steroid-sparing drug in the treatment of lupus nephritis.
2. Antimalarials, for treatment of skin rashes, arthritis, and mouth ulcers, include
   a. chloroquine phosphate oral (Aralen® Phosphate)
   b. hydroxychloroquine (Plaquenil®).
3. Corticosteroids, to reduce inflammation and suppress activity of the immune system, such as
   a. prednisone (Prednisone Intensol®, Sterapred®)
   b. corticosteroid creams to treat skin rashes.
4. Non-steroidal anti-inflammatory drugs (NSAIDs), for muscle pain, arthritis, and pleurisy, such as
   a. diclofenac (Cataflam®, Voltaren®)
   b. ibuprofen (Advil®, Motrin® among others)
   c. indomethacin (Indocin®)
   d. naproxen (Aleve®, Anaprox®, Naprosyn® among others).

**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 type of advice needed from the primary or specialized care provider(s)
3. inquire about
   a. the patient/client’s understanding and acceptance of the need for oral healthcare
   b. immunosuppression
   c. symptoms indicative of a flare
   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 associated with dental/dental hygiene care
   g. how the patient/client’s state of health is at this moment
   h. how the patient/client’s current symptoms relate to
      i. oral health
      ii. health generally
   i. 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

- the **Recommendations** published by the Centers for Disease Control and Prevention (a frequently updated resource)
- relevant occupational health and safety legislative requirements
- relevant public health legislative requirements
- best practices or other protocols specific to the medical condition of the patient/client.

## DECIDING WHEN AND WHEN NOT TO INITIATE THE PROCEDURES PROPOSED

The dental hygienist

1. should not implement the Procedures without prior consultation with the appropriate primary or specialist care provider(s) if the patient/client
   - is receiving or soon likely to be receiving immunosuppression medication
   - is likely to require antibiotic prophylaxis
   - is in the course of a **flare**.
2. may postpone the Procedures pending medical advice if the patient/client
   - appears debilitated
   - is experiencing symptoms suggestive of complications of lupus or its treatment
   - has not complied with pre-medication, including antibiotic prophylaxis, as directed by the prescribing physician
   - has recently changed significant medications, under medical advice or otherwise
   - recently experienced changes in his/her medical condition such as medication or other side effects of treatment
   - not provided the dental hygienist with sufficient information about medications and related matters
   - reports a medical history suggestive of complications or comorbidities of lupus
   - has symptoms or signs of
i. exacerbation of the medical condition  
ii. comorbidity, complication or an associated condition of lupus  
i. not recently or ever sought and received medical advice relative to oral healthcare procedures  
j. is deeply concerned 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 lupus, 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 dental hygienists should

1. urge the patient/client to alert any healthcare professional who proposes any intervention or test  
   a. that he or she has a history of lupus  
   b. to the medications he or she is taking  
2. should discuss, as appropriate  
   a. the importance of the patient/client’s  
      i. self-checking the mouth regularly for new signs or symptoms  
      ii. reporting to the appropriate healthcare provider any changes in the mouth  
   b. the need for regular oral health examinations and preventive oral healthcare  
   c. oral self-care including information about  
      i. choice of toothpaste  
      ii. tooth-brushing techniques and related devices  
      iii. dental flossing  
      iv. mouth rinses  
      v. management of a dry mouth  
   d. the importance of an appropriate diet in the maintenance of oral health  
   e. for persons at an advanced stage of a disease or debilitation  
      i. regimens for oral hygiene as a component of supportive care and palliative care
ii. the role of the family caregiver, with emphasis on maintaining an infection-free environment through hand-washing and, if appropriate, wearing gloves
   iii. scheduling and duration of appointments to minimize stress and fatigue
   f. comfort level while reclining, and stress and anxiety related to the Procedures
g. medication side effects such as dry mouth, and recommend treatment
h. mouth ulcers and other conditions of the mouth relating to lupus, comorbidities, complications or associated conditions, medications or diet
i. pain management.

**BENEFITS/HARMS OF IMPLEMENTING THE RECOMMENDATIONS**

**POTENTIAL BENEFITS**

1. Promoting health through oral hygiene for persons who have lupus.
2. Reducing the adverse effects, such as performing the Procedures on a patient/client during a flare by
   a. paying attention to the medical history
   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**

2. Performing the Procedures at an inappropriate time, such as
   a. when the patient/client’s lupus is in a flare
   b. in the presence of complications for which prior medical advice is required
   c. in the presence of acute oral infection without prior medical advice.
3. Disturbing the normal dietary and medications routine of a person with lupus.
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**

2009-11-24

**DATE OF LAST REVIEW**

2012-01-01

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