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 tuberculosis, latent or active.

### Cite as

*College of Dental Hygienists of Ontario, CDHO Advisory Tuberculosis, Latent or Active, 2010-07-15*

### 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)**

*Tuberculosis, latent or active*

**Intended Users**

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

**Advisory Objective(s)**

To guide dental hygienists at the point of care relative to the use of the Procedures for persons who have tuberculosis, latent or active, 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. Record keeping.

TARGET POPULATION

Child (2 to 12 years)
Adolescent (13 to 18 years)
Adult (19 to 44 years)
Middle Age (45 to 64 years)
Aged (65 to 79 years)
Aged, 80 and over
Male
Female

Parents, guardians, and family caregivers of children, young persons and adults with tuberculosis, latent or active.

MAJOR OUTCOMES CONSIDERED

For persons who have tuberculosis, latent or active: 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
- MicrobiologyBytes: Mycobacterium tuberculosis
- World Health Organization: Drug- and multidrug-resistant tuberculosis
- NHS: The Mantoux test

1. Tuberculosis, infectious disease caused by Mycobacterium tuberculosis, abbreviated to M. tuberculosis.

Other terminology
1. Active tuberculosis, in which Mycobacterium tuberculosis becomes active and creates an active infection in
   a. the lungs
   b. other parts of the body, including
      i. lymph nodes
      ii. kidneys
      iii. urinary tract
      iv. bones and joints.
2. Active TB, synonym for active tuberculosis.
3. Active TB disease, synonym for active tuberculosis.
4. Drug-resistant tuberculosis and multi-drug resistant anti-tuberculosis drug resistance is a major public health problem that threatens the success of the global approach for detection and cure of tuberculosis, as well as global tuberculosis control.
5. Immunocompromised, state in which a person’s immune system is deficient or absent, which
   a. acts to
      i. impair the body’s defences against infection
      ii. increase the immunocompromised person’s risk of serious infections and severe complications
      iii. increase the risk of opportunistic infections, which do not normally afflict healthy individuals
   b. is caused by or related to
      i. infections, such as HIV/AIDS (CDHO Advisory)
      ii. certain cancers, including
         1. leukemia (CDHO Advisory)
         2. lymphoma (CDHO Advisory)
      iii. chemotherapy (CDHO Advisory)
      iv. radiation therapy (CDHO Advisory)
      v. chronic diseases, such as
         1. end stage renal disease with dialysis (CDHO Advisory)
         2. diabetes (CDHO Advisory)
         3. cirrhosis (CDHO Advisory)
      vi. inherited genetic defects
      vii. medications, such as
         1. steroids
         2. post-transplant immunosuppression.
6. Immunosuppression (CDHO Advisory), suppression of immunity with medications, the uses of which include the treatment of certain autoimmune diseases, such as rheumatoid arthritis; its main drawback is the increased risk of infection for the duration of treatment.
7. Inactive TB, synonym for latent tuberculosis.
8. Inactive tuberculosis, synonym for latent tuberculosis.
10. Latent tuberculosis, in which Mycobacterium tuberculosis lodges in the lungs and lies dormant, causing no symptoms.
11. 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.
12. Mantoux test, tuberculin skin test, used to identify persons infected with Mycobacterium tuberculosis.
13. Oral ulcer, an open lesion, often painful, inside the mouth or upper throat, an alternative name for
    a. a mouth ulcer
b. an aphthous ulcer  
c. aphthous stomatitis, also known as a canker sore  
d. a cancerous ulcer.

14. Palliative care, services of care for persons towards the end of life with terminal illnesses, when the focus of the care  
a. is relieving symptoms  
b. attending to physical and spiritual needs.

15. Supportive care, services of care to help persons meet the physical, emotional and spiritual challenges arising from the condition or its treatment.

Overview of tuberculosis, latent or active

Resources consulted
- Health Canada: Tuberculosis
- The Lung Association: Tuberculosis
- World Health Organization: Drug- and multidrug-resistant tuberculosis

Tuberculosis, latent or active
1. Is contagious, but some persons are more at risk than others.
2. Is reported in Canada at the rate of about 1,600 new cases per year.
3. Is considered one of the deadliest infectious diseases worldwide, especially in developing countries; according to the World Health Organization  
a. among infectious diseases, tuberculosis is the second greatest contributor to adult mortality, causing approximately 1.7 million deaths per year worldwide  
b. one-third of the world’s population is infected with Mycobacterium tuberculosis  
   which, given globalisation, trans-national migration and tourism, means that all countries are potential targets for outbreaks of tuberculosis  
c. drug-resistant tuberculosis is a serious and growing problem.
4. Infects usually via the respiratory tract, the commonest route of entry of Mycobacterium tuberculosis.
5. Is spread by exhalation spray from a person with active tuberculosis  
a. as in coughing  
b. to which, to become infected, an uninfected person would require exposure  
i. to exhalation spray from an infected person  
ii. extended over hours per day for a protracted period.
6. Is well controlled in Canada, but some Canadians contract it, see also comorbidity and persons at risk, including  
a. persons with HIV/AIDS (CDHO Advisory)  
   i. creates the most important risk factors for tuberculosis infection and active tuberculosis  
   ii. substantially increases the risk of developing active tuberculosis: a person with both tuberculosis infection and HIV/AIDS is 50–170 times more likely to develop active tuberculosis than someone who does not have HIV/AIDS  
b. persons who have or have had close contact with individuals with known or suspected active tuberculosis, such as family members sharing living spaces  
c. persons who have lived or worked in countries where tuberculosis is common  
d. persons with a weakened immune system, and various medical conditions
e. aboriginal Canadians
f. the elderly
g. the homeless
h. residents of long-term care facilities
i. residents of correctional facilities
j. staff of correctional facilities
k. persons who live in unhygienic conditions in crowded housing
l. health professionals when exposed to persons with active tuberculosis

7. Is characterized by
   a. a cough that lasts two weeks or more, especially if productive of sputum or blood
   b. fever
   c. night sweats
   d. weight loss
   e. loss of appetite
   f. constant tiredness.

8. Is diagnosed by
   a. Mantoux test
   b. chest x-ray, and sputum test, to detect active lung disease or signs of previous active infection.

Comorbidity, complications and associated conditions; persons at risk

Comorbid conditions are those which co-exist with tuberculosis, latent or active, 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.

A major consideration with tuberculosis, latent or active, or its comorbidities, complications or associated conditions is the possibility of their putting other persons at risk of infection with tuberculosis.

Resources consulted

- CDC: Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Settings, 2005

In tuberculosis, whether active or latent, the comorbidity and complications reflect common factors such as those that lead to debilitation. In combination, these correspond to conditions that put persons at high risk of progression of latent tuberculosis to active tuberculosis.

1. Persons at high risk for progressing from latent tuberculosis to active tuberculosis include
   a. persons infected with HIV/AIDS (CDHO Advisory)
   b. persons infected with Mycobacterium tuberculosis within the previous 2 years
   c. infants and children aged <4 years
   d. persons with any of the following clinical conditions or other immunocompromising conditions
      i. silicosis
ii. diabetes (CDHO Advisory)
iii. chronic renal failure (CDHO Advisory)
iv. end-stage renal disease (CDHO Advisory)
v. certain hematologic disorders, such as
   1. leukemia (CDHO Advisory)
   2. lymphoma (CDHO Advisory)
vi. other specific malignancies such as cancer of the
   1. head
   2. neck
   3. lung
vii. body weight >10 percent below ideal body weight
viii. prolonged corticosteroid use
ix. immunosuppressive treatments
x. organ transplantation
xi. intestinal bypass or gastrectomy
e. persons with a history of untreated or inadequately treated tuberculosis, including persons with chest radiograph findings consistent with previous tuberculosis.

2. Persons who might be at increased risk for infection and disease include
   a. users of
      i. tobacco or alcohol (CDHO Advisory)
      ii. drugs of abuse by injection, such as crack cocaine (CDHO Advisory)
      iii. injections of steroids
   b. those with
      i. clinical depression (CDHO Advisory)
      ii. other chronic medical conditions associated with social and environmental factors, such as chronic obstructive pulmonary disease (CDHO Advisory), which active tuberculosis accompanies, and which are important determinants of clinical outcomes

Oral health considerations

Resources consulted

- American Dental Association: Tuberculosis

1. A person with latent tuberculosis is not infectious so can be treated in the dental office under standard infection control precautions.

2. Any persons with symptoms suggestive of active tuberculosis should be
   a. promptly removed from the area of other patients/clients or staff, instructed to wear a surgical or procedure mask
   b. assessed for the urgency of their dental care
   c. immediately referred for medical care.

3. Standard precautions are insufficient to prevent transmission of the Mycobacterium tuberculosis.

4. Elective dental treatment should be deferred until the person has been declared non-infectious by a physician. Urgent dental care for a person with suspected or active tuberculosis should be provided in a facility that has
   a. the capacity for isolation from airborne infection
b. a respiratory protection program in place.

5. When treating a person with active tuberculosis, dental healthcare personnel should
   a. use respiratory protection, such as fitted, disposable N-95 respirators
   b. be aware that standard surgical face masks are not designed to protect against
      airborne transmission of Mycobacterium tuberculosis.

**MEDICATIONS SUMMARY**

**Sourcing medications information**

1. Adverse effect database
   - [Health Canada’s Marketed Health Products Directorate](https://www.canada.ca/en/health-canada/services/health-products-drugs.html)
toll-free 1-866-234-2345
   - [Health Canada’s Drug Product Database](https://www.canada.ca/en/health-canada/services/health-products-drugs.html)

2. Specialized organizations
   - [Public Health Agency of Canada](https://www.canada.ca/en/public-health-agency/services.html)
   - [WebMD](https://www.webmd.com)

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](https://medlineplus.gov/druginfo.html)

5. Complementary and alternative medicine
   - [National Center for Complementary and Alternative Medicine](https://www.nccam.nih.gov)

**Types of medications**

**Warnings**

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

**Medications**

The most common anti-tuberculosis drugs, often taken in combination
- isoniazid (INH, Nydrazid®)
- rifampin (RMP, Rifadin®)
- pyrazinamide (PZA)
- ethambutol (EMB, Myambutol®)
Side effects of medications

1. Drug resistance, which arises from improper use of antibiotics for tuberculosis patients, and which results from
   a. administration of incorrect treatment regimens by health-care workers
   b. failure to ensure that persons complete the whole course of treatment
   c. generally poor tuberculosis control programmes.

2. Multidrug-resistant tuberculosis is a specific form of drug-resistant tuberculosis in which Mycobacterium tuberculosis bacilli are resistant to at least isoniazid and rifampin, the two most powerful anti-tuberculosis drugs.

3. For the side effects of particular medications see the links above.

THE MEDICAL AND MEDICATIONS HISTORY

The medical and medications history-taking should

1. Focus on screening the patient/client prior to treatment decision relative to
   a. key symptoms
   b. medications considerations
   c. contraindications
   d. complications
   e. comorbidities.

2. Explore the need for advice from the appropriate primary or specialized care provider(s).

3. Inquire about
   a. where the patient/client is receiving or has received medical care for tuberculosis
   b. the patient/client’s understanding and acceptance of the need for oral healthcare
   c. the type of information and advice needed from the appropriate primary care provider(s)
   d. current medications
      i. pertaining to tuberculosis
      ii. other medications, 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

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, tuberculosis, latent and active

Resources consulted

- Canadian Lung Association: Tuberculosis
- CDC: Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Settings, 2005
- Ontario’s Provincial Infectious Diseases Advisory Committee’s Best Practices for Infection Prevention and Control Programs in Ontario, In All Health Care Settings, 2008
- Public Health Agency of Canada: Guidelines for Preventing the Transmission of Tuberculosis in Canadian Health Care Facilities and Other Institutional Settings

1. The Ontario Ministry of Health’s Best Practices for Infection Prevention and Control Programs in Ontario
   a. advocates protection of dental-care staff and patients/clients from contagious spread by patients/clients with active tuberculosis by adherence to screening protocols for personnel at risk of occupational exposure to tuberculosis
   b. recommends for dental-care settings and dental-care staff the US Centers for Disease Control and Prevention’s Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Settings, 2005.

2. Under the CDC Guidelines’ definitions
   a. all personnel with duties that involve face-to-face contact with patients/clients with suspected or confirmed active tuberculosis should be included in a tuberculosis screening program
   b. dental-care staff comprise all paid and unpaid persons working in dental healthcare settings who have the potential for exposure to Mycobacterium tuberculosis through air space shared with persons with active tuberculosis
   c. part-time, temporary, contract, and full-time dental-care staff should be included in tuberculosis screening programs.

3. The Public Health Agency of Canada outlines methods for assessment and classification of risk of tuberculosis transmission in a healthcare facility, and in the full report, Guidelines for Preventing the Transmission of Tuberculosis in Canadian Health Care Facilities and Other Institutional Settings, covers what can be termed the environmental aspects of infection control for tuberculosis.

Infection control generally

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

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 has tuberculosis, latent or active
2. may postpone the Procedures pending medical advice if the patient/client
   a. appears debilitated or has symptoms or signs of comorbidity, complication or an associated condition, or of exacerbation of the medical condition
   b. a history suggestive of tuberculosis, active or latent
   c. not complied with pre-medication, including antibiotic prophylaxis, as directed by the prescribing physician
   d. recently changed significant medications, under medical advice or otherwise
   e. complications or comorbidities of tuberculosis about which the dental hygienist is in need of additional information and advice
   f. recently experienced changes in his/her medical condition such as medication or other side effects of treatment
   g. is unable to provide the dental hygienist with sufficient information about
      i. his or her personal medical history
      ii. medications
      iii. treatment
   h. not recently or ever sought and received medical advice relative to oral healthcare procedures
   i. 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 tuberculosis, latent or active, the dental hygienist should specifically record

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

### ADVISING THE PATIENT/CLIENT

The patient/client is urged to alert any healthcare professional who proposes any intervention or test that he or she has a history of tuberculosis, latent or active.

As appropriate, discuss

1. The importance of the patient/client’s
   a. taking medication(s) as prescribed for pre-medication including antibiotic prophylaxis.
   b. self-checking the mouth regularly for suspicious signs or symptoms
   c. reporting to the appropriate healthcare provider any changes in the mouth indicative of suspicious lesions.

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

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

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

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

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

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

8. Mouth ulcers and other conditions of the mouth relating to tuberculosis, latent or active, comorbidities, complications, medications or diet.


### BENEFITS/HARMS OF IMPLEMENTING THE RECOMMENDATIONS

#### POTENTIAL BENEFITS

1. Promoting health through oral hygiene for persons who have tuberculosis, latent or active.
2. Reducing risk of spread of tuberculosis from persons with active tuberculosis to dental-office staff and patients/client by
   a. applying the protocols and guidelines specific to tuberculosis risk
   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 harm by failing to apply measures needed to combat the spread of tuberculosis from persons with active tuberculosis.
2. Performing the Procedures at an inappropriate time, such as
   a. when a patient/client is in the phase of spreading Mycobacterium tuberculosis by exhalation spray
   b. in the presence of complications or comorbidities 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 tuberculosis, latent or active.
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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