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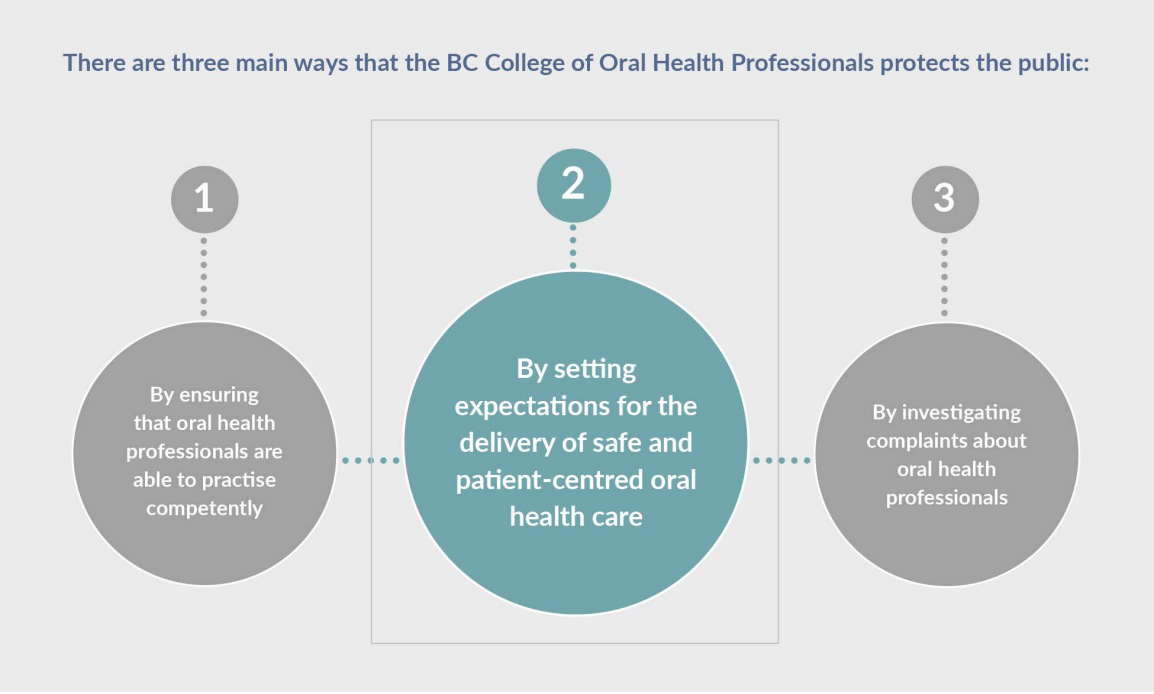
Interpretation Guidelines: Antibiotic Premedication (Cardiac Conditions)

Applies to Dental Hygienists



The British Columbia College of Oral Health Professionals (BCCOHP) was created on September 1, 2022 through the amalgamation of four health regulatory colleges: the College of Dental Hygienists of BC, the College of Dental Surgeons of BC, the College of Dental Technicians of BC, and the College of Denturists of BC. All current requirements for standards of clinical and ethical practice issued by the four colleges remain in place upon amalgamation. This document was created by the College of Dental Hygienists of British Columbia and will be updated to reflect the amalgamation.

Antibiotic Premedication (Cardiac Conditions)

May 5, 2020 Update: The CDHBC Interpretation Guidelines are under review. The content of these guidelines remains in place at this time; however, they need to be applied in the context of the new Dental Hygienists Regulation and CDHBC Bylaws. Readers are welcome to contact the CDHBC office if they have questions about the application of these guidelines in the interim time.

PURPOSE

To provide guidelines on antibiotic premedication for clients with specific cardiac conditions.

BACKGROUND

Current medical practice indicates that dental clients who are at risk for infective endocarditis (IE) should have prophylactic antibiotic premedication prior to specific dental procedures, including procedures regularly performed by dental hygienists during the assessment, implementation and evaluation phases of clinical client care. Regimens updated and published by the American Heart Association (2021) and the American College of Cardiology Foundation (2020) are adopted as the standard for prophylactic antibiotic premedication within this interpretation guideline.

Registrants are encouraged to visit the following websites for current guidelines on antibiotic premedication:

The American Heart Association: **www.americanheart.org**
The American College of Cardiology: **www.acc.org**
The Canadian Dental Association: **www.cda-adc.ca**
The American Dental Association: **www.ada.org**

Following consideration of a client's medical status and any co-morbidities that may increase their risk of infection, a client's cardiologist, physician, or dentist may prescribe prophylactic antibiotic premedication for clients with heart conditions prior to specific dental procedures.

Current **indications** for prophylactic antibiotics, prior to dental/dental hygiene procedures that involve manipulation of gingival tissue or the periapical region of teeth, and/or perforation of the oral mucosa, are for clients with a history of any of the following:[1-5]

Antibiotic Prophylactic Indications:[1-5]	
Indications:	**Indications Examples:**
Prosthetic cardiac valves	Including transcatheter-implanted prostheses
Prosthetic material used for cardiac valve repair	Such as annuloplasty, rings, and clips
Left ventricular assist devices or implantable heart	
Previous, relapse, or recurrent infective endocarditis	
Cardiac transplant recipients who develop cardiac valvulopathy	
Specific congenital (present from birth) heart conditions:	• Unrepaired cyanotic congenital heart disease including palliative shunts and conduits; Repaired congenital heart disease, with residual shunts or valvular regurgitation at the site of or adjacent to the site of a prosthetic material; • Surgical or transcatheter pulmonary artery valve or conduit placement; • Completely repaired congenital heart defect with prosthetic material or device, whether placed by surgery or catheter intervention, within 6 months after the procedure* (*Prophylaxis is reasonable because endothelialization of prosthetic material occurs within 6 months after the complete repair of a congenital heart defect.)

Current **contra-indications** for prophylactic antibiotics include a client with a history of:

- Mitral valve prolapse
- Rheumatic heart disease
- Bicuspid valve disease
- Calcified aortic stenosis
- Congenital heart conditions such as ventricular septal defect, atrial septal defect and hypertrophic cardiomyopathy

- Surgical repair of atrial septal defect, ventricular septal defect or patent ductus arteriosus (without residue beyond 6 months)
- Previous coronary artery bypass surgery
- Heart murmurs
- Previous Kawasaki disease
- Cardiac pacemakers and implanted defibrillators (intravascular and epicardial)
- Coronary artery disease
- Coronary artery stents

When prophylactic antibiotics **<u>are recommended</u>**, the following dental hygiene procedures are considered to have the greatest potential to produce a bacteremia (i.e., procedures which manipulate the gingival tissues and which may cause bleeding and the presence of viable bacteria in the blood):

- Periodontal procedures including surgery, scaling, root planing and probing
- Intraligamentary anesthesia injections
- Subgingival placement of antibiotic fibers or strips
- Polishing of teeth or implants, where bleeding is anticipated
- Initial placement of orthodontic bands, but not brackets

Prophylactic antibiotics are **<u>not recommended</u>** for the following dental hygiene procedures:

- Local anaesthesia injections through non-infected tissues (other than intraligamentary)
- Placement of rubber dam
- Suture removal
- Placement of removable prosthodontic or orthodontic appliances
- Adjustment of orthodontic appliances
- Impressions
- Intra-oral radiographs

Timing of Antibiotic Administration

An antibiotic for prophylaxis of a cardiac condition should be administered in a single dose before the procedure. If the dosage of antibiotic is *inadvertently* not administered before the procedure, the dosage may be administered up to 2 hours after the procedure. However, administration of the dosage after the procedure should be considered only when the client did not receive the pre-procedure dose.[2] Therefore, this protocol should be reserved for extenuating situations and should not be used simply for the convenience of the office or the dental hygienist. In addition, it is recommended that there be at least 10 days between appointments for those clients who require prophylactic antibiotics to decrease the risk of antibiotic resistance. [2, 6]

Clients Already Receiving Antibiotics

The 2007 and 2021 guidelines state that if the client is already taking an antibiotic that is recommended for IE for another reason, rather than increasing the dose, an antibiotic from a different class should be prescribed.[2, 4]

Prophylactic Regimen:[2, 4]		
Situation	**Agent**	**Regimen – Single Dose 30-60 minutes before procedure**
Oral	Amoxicillin	*Adults:* 2.0 g Children: 50 mg/kg orally, *1 hour before procedure*
Unable to take oral medications	Ampicillin or Cefazolin or Ceftriaxone	*Adults:* 2.0 g IM or IV* (ampicillin)1.0 g IM or IV (Cefazolin or Ceftriaxone) Children: 50 mg/kg, IM or IV 30 minutes prior to procedure
Allergy to oral penicillin or ampicillin	Cephalexin** †	*Adults:* 2.0 g Children: 50 mg/kg orally, *1 hour before procedure*
	Azithromycin or Clarithromycin	*Adults:* 500 mg Children: 15 mg/kg orally, *1 hour before procedure*
	Doxycycline	*Adults:* 100 mg Children: <45 kg, 4.4 mg/kg; >45 kg, 100 mg orally, *30-60 minutes before procedure*
Allergic to Penicillin or ampicillin and unable to take oral medications	Cephazolin or Ceftriaxone †	*Adults:* 1.0 g IM or IV Children: 50 mg/kg IM or IV, **30 minutes prior to procedure**
Clindamycin is no longer recommended for antibiotic prophylaxis for a dental procedure. *IM indicates intramuscular; IV indicates intravenous **Or other first- or second-generation oral cephalosporin in equivalent adult or pediatric dosages* *† Cephalosporins should not be used with individuals with a history of anaphylaxis, angioedema, or urticaria to penicillins or ampicillin.*		
From: Wilson et al. Prevention of Endocarditis, Circulation 2007;116;1736-1754; originally published online April 19, 2007. Available from: http://circ.ahajournals.org/content/116/15/1736.full.pdf+html, and *Wilson et al. Prevention of viridans groups streptococcal infective endocarditis: A scientific statement from the American Heart Association. Circulation 2021;143(20):e963-78; originally published online April 15, 2021. Available from:* https://www.ahajournals.org/doi/epub/10.1161/CIR.0000000000000969		

POLICY

In order to meet CDHBC Practice Standards, dental hygienists are required to use current knowledge in their practice and to assess the client to determine whether special precautions

are necessary. Ideally dental hygienists will consult with the client's cardiologist to determine the need for antibiotic prophylaxis prior to invasive dental hygiene procedures. If the dental hygienist is unable to consult with the cardiologist, a collaborative approach with the client's physician or dentist should take place to determine the client's need. Should the physician or dentist elect to take responsibility for making this determination, **the direction provided must be clearly documented in the client's chart.**

If a determination recommending antibiotic prophylaxis is made in a dental office setting, it is recommended that a letter be provided to the client to take to their treating physician informing them of the prophylactic coverage and directions that were provided.

It is recommended that the dental hygiene professional encourage clients who are at high risk for developing infective endocarditis to maintain optimal oral health to prevent bacterial seeding. This is through oral hygiene instruction to ensure effective home oral self-care and through regular professional dental hygiene maintenance appointments. Dental hygiene appointments must also ensure strict infection prevention and control measures are upheld.

REFERENCES

1. Otto CM, Nishimura RA, Bonow RO, Carabello BA, Erwin JP 3rd, Gentile F, Jneid H, Krieger EV, Mack M, McLeod C, O'Gara PT, Rigolin VH, Sundt TM 3rd, Thompson A, Toly C. 2020 ACC/AHA guideline for the management of patients with valvular heart disease: a report of the American College of Cardiology/American Heart Association Joint Committee on clinical practice guidelines. Circulation. 2021 Feb;143(5):e72-e227. Available from: https://www.ahajournals.org/doi/epub/10.1161/CIR.0000000000000923
2. Wilson WR, Gewitz M, Lockhart PB, Bolger AF, DeSimone DC, Kazi DS, Couper DJ, Beaton A, Kilmartin C, Miro JM, Sable C, Jackson MA, Baddour LM. Prevention of viridans group streptococcal infective endocarditis: A scientific statement from the American Heart Association Rheumatic Fever, Endocarditis and Kawasaki Disease Committee of the Council of Lifelong Congenital Heart Disease and Heart Health in the Young, Council on Cardiovascular and Stroke Nursing, and the Council on Quality of Care and Outcomes Research Interdisciplinary Working Group. Circulation. 2021 May 18;143(20):e963-78. Available from: https://www.ahajournals.org/doi/10.1161/CIR.0000000000000969
3. Nishimura RA, Otto CM, Bonow RO, Carabello BA, Erwin JP 3rd, Fleisher LA, Jneid H, Mack MJ, McLeod CJ, O'Gara PT, Rigolin VH, Sundt TM 3rd, Thompson A. 2017 AHA/ACC focused update of the 2014 AHA/ACC guideline for the management of patients with valvular heart disease: a report of the American College of Cardiology/American Heart Association Task force on Clinical Practice Guidelines. Circulation. 2017 June

20;135(25):e1159-95. Available from: https://www.ahajournals.org/doi/full/10.1161/CIR.0000000000000503
4. Wilson W, Taubert KA, Gewitz M, Lockhart PB, Baddour LM, Levison M, et al. Prevention of infective endocarditis: Guidelines from the American Heart Association Rheumatic Fever, Endocarditis and Kawasaki Disease Committee, Council on Cardiovascular Disease in the Young, and the Council on Clinical Cardiology, Council on Cardiovascular Surgery and Anesthesia, and the Quality of Care and Outcomes Research Interdisciplinary Working Group. Circulation. 2007;116:1736-1754. Available from: http://circ.ahajournals.org/content/116/15/1736.full.pdf+html
5. American Academy of Pediatric Dentistry. Clinical Practice Guidelines, Council on Clinical Affairs. Guideline on antibiotic prophylaxis for dental clients at risk for infection. Chicago (IL):American Academy of Pediatric Dentistry (AAPD). 2020;447-52. Available from https://www.aapd.org/globalassets/media/policies_guidelines/bp_prophylaxis.pdf
6. Blue CM. *Darby's comprehensive review of dental hygiene*. 9th ed. St. Louis, Missouri: Elsevier; 2022; p.477.

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