

RECOMMENDED ANTIBIOTIC PROPHYLAXIS FOR THE PREVENTION OF INFECTIVE ENDOCARDITIS AND HEMATOGENOUS TOTAL JOINT INFECTION

The following recommendations are based on the current guidelines of the American Heart Association (AHA) and the American Academy of Orthopaedic Surgeons (AAOS). These guidelines are provided to aid dental hygienists in their clinical judgment regarding antibiotic prophylaxis for clients at increased risk of infective endocarditis and hematogenous total joint infection. These revised (2007) recommendations are evidence-based and reflect an analysis of relevant literature in procedure related endocarditis and hematogenous total joint infection. The need for antibiotic coverage for clients who are at increased risk should be considered on an individual basis in conjunction with the client’s physician.

**TABLE 1 – ANTIBIOTIC PROPHYLAXIS RECOMMENDATIONS
(NO FOLLOW-UP DOSE RECOMMENDED)**

Situation	Agent	Regimen*
Standard general prophylaxis:	Amoxicillin, Cephalexin**, or Cephradine	2.0 g orally 30 – 60 minutes before procedure
Unable to take oral medications:	Ampicillin	2.0 g IM or IV 30 – 60 minutes before procedure
	Cefazolin	1.0 g IM or IV 30 – 60 minutes before procedure
Penicillin-allergic:	Clindamycin	600 mg orally 30 – 60 minutes before procedure
Penicillin-allergic and unable to take oral medications;	Clindamycin	600 mg IV 30 – 60 minutes before procedure
<p>*No follow-up dose recommended **Cephalosporins should not be used in individuals with immediate type hypersensitivity reaction (urticaria, angioedema or anaphylaxis) to penicillins For children, please consult their physician</p>		

Please Note: Prior antibiotic use should be considered before prophylactic antibiotics are prescribed as resistant organisms may develop. If the need for prophylaxis closely follows prior antibiotic exposure (i.e. within 9 to 14 days), an antibiotic from a different antibiotic class should be considered.

TABLE 2 – CARDIAC CONDITIONS ASSOCIATED WITH ENDOCARDITIS

Antibiotic Prophylaxis Recommended¹
<u>High Risk Category</u>
Prosthetic cardiac valves, including bioprosthetic and homograft valves
Previous bacterial endocarditis
Congenital heart disease (CHD) ² <ul style="list-style-type: none"> • Unrepaired cyanotic CHD, including palliative shunts and conduits • Completely repaired congenital heart defect with prosthetic material or device, whether placed by surgery or by catheter intervention, during the first 6 months after the procedure[♦] • Repaired CHD with residual defects at the site or adjacent to the site of a prosthetic device (which inhibit endothelialization)
Cardiac transplantation recipients who develop cardiac valvulopathy

¹ Prophylaxis is recommended for patients with the cardiac conditions listed in Table 2 in accordance with AHA 2007 guidelines.

² Except for the conditions listed in Table 2, antibiotic prophylaxis is no longer recommended for any other form of CHD

[♦] Prophylaxis is recommended because endothelialization of prosthetic material occurs within 6 months of the procedure

TABLE 3 - PATIENTS AT POTENTIAL RISK OF HEMATOGENOUS TOTAL JOINT INFECTION

Antibiotic Prophylaxis Recommended⁵
<u>Higher Risk Category</u>
The first two (2) years after prosthetic joint replacement
Immunocompromised / immunosuppressed patients <ul style="list-style-type: none"> • Inflammatory arthropathies (e.g.: rheumatoid arthritis, systemic lupus erythemtosus) • Drug-induced immunosuppression • Radiation-induced immunosuppression
Patients with co-morbidities <ul style="list-style-type: none"> • Previous prosthetic joint infections • Malnourishment • Hemophilia • HIV infection • Insulin-dependant (Type I) diabetes • Malignancy
Cardiac transplantation recipients who develop cardiac valvulopathy

Note: Antibiotic prophylaxis is not indicated for dental clients with pins, plates and screws nor is it routinely indicated for most dental clients with total joint replacements. However, all factors and potential risk must be considered (AAOS).

⁵ Antibiotic prophylaxis is recommended for conditions listed in Table 3 in accordance with AAOS guidelines.

TABLE 4 - BACTEREMIC DENTAL PROCEDURES

Antibiotic Prophylaxis Recommended⁶
<u>Dental procedures that involve manipulation of gingival tissue or the periapical region of the teeth or perforation of the oral mucosa⁷</u>
Scaling and rootplaning of teeth
Periodontal procedures <ul style="list-style-type: none"> • Curetting tissue • Periodontal probing • Periodontal surgery • Sub gingival placement of antibiotic fibers and strips
Tooth extraction
Suture removal
Biopsies
Prophylactic cleaning of teeth or implants where bleeding is anticipated
Dental implant placement and replantation of avulsed teeth
Endodontic instrumentation or surgery only beyond the apex
Placement of orthodontic bands
Intraligamentary and intraosseous local anaesthetic injections

⁶ Table 4 lists dental procedures that may increase the risk of infectious endocarditis and/ or hematogenous infections for conditions listed in Tables 2 & 3, in accordance with AHA and AAOS guidelines

⁷ The following procedures and events do not need prophylaxis: routine anaesthetic injection through non-infected tissue, taking radiographs, placement of removable prosthetic or orthodontic appliances, adjustment of orthodontic appliances, placement of orthodontic brackets, shedding of deciduous teeth, and bleeding from trauma to the lips or oral mucosa.

OTHER CONSIDERATIONS FOR ANTIBIOTIC PROPHYLAXIS

Occasionally a client may present with a recommendation for or against prophylactic antibiotic coverage from his/her physician that is not consistent with the CDHO, AHA, or AAOS guidelines. The dental hygienist is to consult with the physician to determine if there are any special considerations that would affect a decision whether or not to pre-medicate. The dental hygienist should have a copy of the CDHO guidelines available at his/her place of practice and make them available to the physician for consultation if appropriate. The need for antibiotic coverage for these clients should be considered on an individual basis in conjunction with the client's physician. The dental hygienist is ultimately responsible for making the decision whether or not to proceed with dental hygiene services.

What happens when an individual has not taken the required prophylactic antibiotics 30 to 60 minutes prior to treatment?

Dental hygienists are reminded that they are responsible for the treatment they render. If the dental hygienist does not believe that it is in the best interest of the client to proceed with treatment, they must not do so. It is both unethical and illegal for the dentist to insist that treatment be performed by the dental hygienist when there are doubts as to the medical condition of the client. To provide maximum protection against sub-acute bacterial endocarditis, **prophylactic antibiotics must be administered 30 to 60 minutes prior to the commencement of any procedure that might induce bleeding.** The dental hygienist should always ask if the client has taken the medication and document that fact. The CDHO takes the position that dental hygienists are responsible for informing the client of the possible consequences of treatment that may occur if the prophylactic antibiotics have not been taken within the specified time period. If, following a detailed explanation of the risks and benefits of prophylactic coverage to the client and if the dental hygienist is confident that the client understands the ramifications, then the dental hygienist may choose to proceed or not to proceed based on whether or not the risks outweigh the benefits. Documentation of all of the facts is essential. As a precaution, every client who requires prophylactic antibiotics should have a physician's letter in his/her file. In that rare emergency situation where the client has honestly forgotten to take the prophylactic antibiotics and has failed to notify the dental hygienist prior to the commencement of treatment, the antibiotics may be administered at that time. **THIS PROTOCOL IS FOR EMERGENCIES ONLY AND MAY NOT BE USED FOR EXPEDIENCY OF THE APPOINTMENT OR THE CONVENIENCE OF THE OFFICE.**

Regular updates on this topic will be printed in CDHO's official publication *Milestones*.

For further information, contact the American Heart Association: www.americanheart.org

To access the online version of the 2007 AHA guidelines Prevention of Infective Endocarditis along with updated information and services, visit <http://circ.ahajournals.org/cgi/reprint/CIRCULATIONAHA.106.183095>

Other web based resources

The American Academy of Orthopaedic Surgeons: Advisory Statement 1014: Antibiotic Prophylaxis for Dental Patients with Total Joint Replacements
<http://www.aaos.org/about/papers/advis.asp>

College of Dental Hygienists of Ontario
In Toronto call: (416) 961-6234
Toll Free: 1-800-268-2346