

Antibiotic Use in Dental Care

At times physicians and dentists recommend that a patient take antibiotics before certain dental procedures. This is called “antibiotic prophylaxis.” But why do healthcare providers suggest this extra step?

We all have bacteria in our mouths, and a number of dental treatments—and even daily routines like brushing or flossing—can allow that bacteria to enter the bloodstream (bacteremia). For most of us, this isn’t a problem. A healthy immune system prevents these bacteria from causing any harm. There is concern, however, that for some people bacteremia can cause an infection elsewhere in the body.

Who is at risk? Guidelines for patient selection

Antibiotic prophylaxis is recommended for a small number of people who have specific heart conditions. In 2008, the American Heart Association released guidelines identifying people who might need antibiotic prophylaxis prior to dental care. According to these guidelines, antibiotic prophylaxis **should be considered** for people with:

- Artificial heart valves
- A history of an infection of the lining of the heart or heart valves known as infective endocarditis
- A heart transplant in which a problem develops with one of the valves inside the heart
- Heart conditions that are present from birth, such as:
 - Unrepaired cyanotic congenital heart disease, including people with palliative shunts and conduit;

- Defects repaired with a prosthetic material or device—whether placed by surgery or catheter intervention—during the first six months after repair
- Cases in which a heart defect has been repaired, but a residual defect remains at the site or adjacent to the site of the prosthetic patch or prosthetic device used for the repair.

Previous versions of these guidelines suggested use of antibiotics with a larger group of patients. Conditions for which antibiotic prophylaxis is **no longer recommended** include:

- Mitral valve prolapse or heart murmur
- Rheumatic heart disease
- Bicuspid valve disease
- Calcified aortic stenosis
- Any heart condition present from birth that is not listed above, including ventricular septal defect, atrial septal defect and hypertrophic cardiomyopathy.

Antibiotic prophylaxis guidelines also have been developed for people who have orthopedic implants, like artificial joints. In the past, antibiotics were recommended for use within the first two years of an artificial joint placement and for select patients with orthopedic implants after that time. In 2012, however, the American Dental Association and the American Association of Orthopedic Surgeons updated these recommendations.

The new guidelines **do not recommend routinely prescribing** antibiotics for people with artificial joints. As a result, healthcare providers may rely more on case-by-case

assessments and consultation with patients to determine when antibiotics are appropriate for people with orthopedic implants. For example, antibiotic prophylaxis might be useful for any of these patients who also have compromised immune systems (due to, for instance, diabetes, rheumatoid arthritis, cancer, chemotherapy, and chronic steroid use), which might increase the risk of orthopedic implant infection.

If you have a heart condition or an orthopedic implant, talk with your dentist or physician about whether antibiotic prophylaxis before dental treatment is right for you.

Why did the guidelines change?

The guidelines are re-evaluated every few years to make sure that they are based on the best scientific evidence. These reviews have uncovered no evidence that taking antibiotics before dental treatment prevents infections of the heart or orthopedic implants. Therefore, for most people, the known risks of taking antibiotics may outweigh the uncertain benefits. Risks related to antibiotic use include upset stomach and allergic reactions, including anaphylactic shock (a severe allergic reaction that can be life threatening).

What can you do?

Talk to your dentist about these guidelines if you have any questions about antibiotic prophylaxis.

Both sets of guidelines also emphasize the importance of maintaining good oral health. Brushing your teeth twice daily and cleaning between them once a day are important for good oral hygiene. Regular visits to your dentist also are key to keeping your mouth healthy.