

# Preventive Antibiotics for Children with Heart Disease

Children with certain heart diseases are at risk of infective endocarditis, a serious infection of the heart valves or the inside lining of the heart. To prevent this infection, your child may need to take antibiotics before certain dental and medical procedures, especially surgery. Make sure to tell your child's dentist and other health care professionals if your child has any form of heart disease.

## Why does my child need preventive antibiotics?

Patients with certain types of heart disease are at increased risk of a serious infection of the heart called *infective endocarditis*. This occurs when the valves of the heart or the inside lining of the heart becomes infected with bacteria. The infection can cause destruction of the heart valves and other life-threatening complications.

To prevent infective endocarditis, antibiotics are recommended before certain dental, medical, and surgical procedures in children with heart disease. This includes routine professional dental cleanings. For this and most other procedures, your child needs only a single dose of amoxicillin or another antibiotic a short time before the procedure.

Whether or not your child needs antibiotics depends on his or her level of risk and the specific procedure being performed. Make sure your child's dentist and other health care providers are aware of your child's heart disease.

## How do dental procedures lead to infections?

During surgery and certain types of dental and medical procedures, the body's normal bacteria get into the bloodstream. This is called "bacteremia" and in healthy people, it usually does not cause problems.


However, in children with heart disease, there is an increased risk that the bacteria will travel through the bloodstream to cause infective endocarditis. This occurs when bacteria infect the heart valves (usually abnormal valves) or the inside lining of the heart (called the "endocardium"). Giving preventive (also called "prophylactic") antibiotics before surgical or dental procedures reduces that risk.

Recommendations for preventive antibiotics vary, depending on:

- Whether your child is at high risk or moderate risk.
- Whether the procedure being performed carries a high risk of causing bacteria to move into the bloodstream.

For example, procedures with a high risk of bacteremia include teeth cleaning, tooth extractions (pulling teeth), tonsillectomy (surgery to remove the tonsils), and some surgeries involving the intestines.

- Other procedures have a low risk of bacteremia and don't require antibiotics, for example, orthodontic (braces) adjustments or placing ear tubes.

Most cases of infective endocarditis are not caused by dental or medical procedures! Other sources of infection are more likely. Your doctor may make further recommendations for preventing infections, possibly including the use of preventive antibiotics. 

## What types of health problems require preventive antibiotics?


Heart disease is the most common reason for giving preventive antibiotics before dental or surgical procedures in children.

- *High-risk conditions.* Some types of heart disease carry a higher risk of infective endocarditis:
  - Any type of surgically replaced heart valves (including artificial and animal valves).
  - Major heart defects (such as transposition of the great arteries or tetralogy of Fallot).
  - Major heart surgery, especially if artificial or reconstructed "shunts," vessels, or heart valves were placed.
  - Previous infective endocarditis.
- *Moderate-risk conditions.* For other types of heart disease, risk of endocarditis is still elevated, although not as high as in children with major heart defects and/or reconstructive surgery:
  - Less severe heart defects, such as patent ductus arteriosus, ventricular septal defect, and others. If your child has had surgery to correct these defects, he or she is no longer at increased risk.
  - Heart valve damage caused by rheumatic heart disease.
  - Hypertrophic cardiomyopathy, a condition in which the heart muscle is thickened and does not function properly.
- *Low-risk conditions.* Children with these conditions are at no higher risk than children without heart disease:
  - Surgery for less severe heart defects (see above).
  - "Innocent" heart murmurs.


- Rheumatic heart disease, if it did not cause valve damage.

### What types of procedures require preventive antibiotics?

*Dental procedures.* Any procedure causing bacteria in the bloodstream (bacteremia) could cause infective endocarditis in a high-risk or moderate-risk child. The most frequent source of risk is dental procedures. This is because dental care is performed routinely and because bacteremia can result from the normally harmless bacteria that are present in the mouth.

 Preventive antibiotics are only needed for certain dental procedures that have a higher risk of bacteria in the bloodstream. Usually, this means procedures in which significant bleeding is expected. For example:

- Professional dental cleanings (cleanings performed by a dentist or dental hygienist, not routine brushing and flossing).
- Dental surgery, including extractions (pulling teeth) and treatment for gum disease (periodontal disease).
- Replacing teeth that have been knocked out.
- Initial orthodontic treatment (placing bands, though not brackets).
- Certain types of local anesthetic injections.
- Other types of dental surgery, such as implant placement or root canal (endodontic) surgery. (These are uncommon in children.)


 Preventive antibiotics are *not* needed for other routine dental procedures, including:

- Personal brushing and flossing.
- Filling cavities and other “restorative” procedures.
- Primary teeth (“baby teeth”) coming out.

- Taking x-rays, fluoride treatments, and many other procedures commonly done in the dentist’s office.

*Other procedures.* Other, less common medical procedures carry a risk of bacteremia and may require preventive antibiotics:

- Certain types of surgery, such as tonsillectomy and some surgeries involving the intestines.
- Certain diagnostic or treatment procedures involving the respiratory, gastrointestinal, or urinary system (for example, cystoscopic examination).

Always tell your child’s doctors and other health professionals about his or her heart condition and ask whether antibiotics are needed before procedures. 

### How are preventive antibiotics given?

- In most cases, your child will need only a single dose of antibiotics, given a short time before the procedure.
- The typical treatment for dental procedures is one dose of amoxicillin, given 1 hour before the procedure.
- A different antibiotic will be given if your child is allergic to penicillin. The antibiotic may be given in oral form (a pill) or by injection (a shot).
- For procedures involving the intestines or bladder, the antibiotic instructions are different for patients with “high-risk” conditions.
- Between dental visits, follow good dental hygiene to keep your child’s teeth as clean as possible. Daily brushing and flossing are the most important steps.

### When should I call your office?

Call our office, or your dentist’s office, if you have any questions about preventive antibiotics for your child. Make sure all health care professionals are aware of your child’s heart condition.