

4. Educate



Dentists can educate patients about the potential harms of antibiotic treatment with the following tools:

- Antibiotic Safety: Do's & Don'ts at the Dentist (page 26)
 - Download here: <http://tinyurl.com/patiented1>.
- What is antibiotic prophylaxis? (page 27)
 - Download here: <http://tinyurl.com/patiented2>.
- What is Infective endocarditis? (page 28)
 - Download here: <http://tinyurl.com/patiented3>.
- Improving Antibiotic Use (page 30)
 - Download here: <http://tinyurl.com/patiented4>.

Antibiotic Safety: Do's and Don'ts at the Dentist

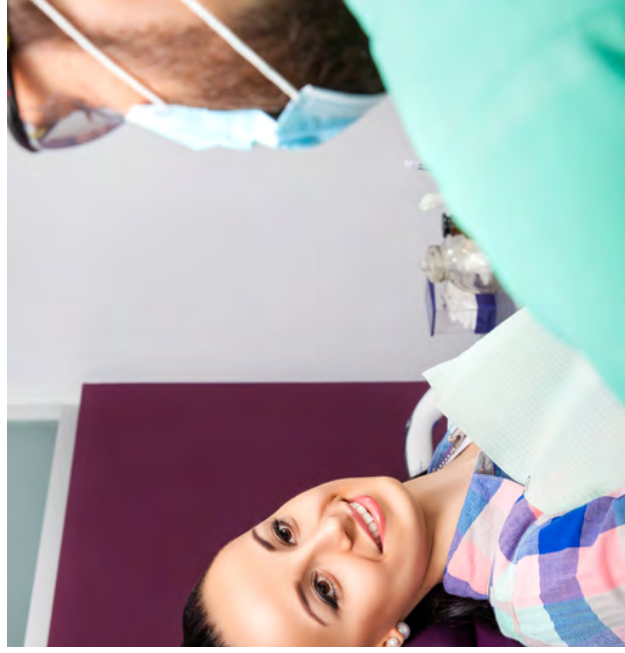
DO

- ✓ **DO** tell your dentist if you have any drug allergies or medical conditions.
- ✓ **DO** tell your dentist about any medications, vitamins, or herbal supplements you are taking.
- ✓ **DO** ask how some mouth infection can be treated without antibiotics.
- ✓ **DO** take your antibiotics exactly as prescribed.
- ✓ **DO** tell your dentist if you have side effects, such as frequent diarrhea, while taking, or shortly after stopping antibiotics.

3



Centers for Disease
Control and Prevention
National Center for Emerging and
Zoonotic Infectious Diseases



DO NOT

- ✗ **DO NOT** skip doses or stop taking your antibiotics without consulting your dentist.
- ✗ **DO NOT** save unused antibiotics for future use or give antibiotics to others.
- ✗ **DO NOT** take antibiotics prescribed for others.
- ✗ **DO NOT** pressure your dentist to prescribe an antibiotic. Instead, ask your dentist how you can feel better even if antibiotics are not prescribed.

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What is antibiotic prophylaxis?



Antibiotics usually are used to treat bacterial infections. Sometimes, though, dentists or physicians suggest taking antibiotics before treatment to decrease the chance of infection. This is called *antibiotic prophylaxis*.

During some dental treatments, bacteria from the mouth enter the bloodstream. In most people, the immune system kills these bacteria. There is concern, though, that in some patients, bacteria from the mouth can travel through the bloodstream and cause an infection somewhere else in the body. Antibiotic prophylaxis may offer these people extra protection.¹

WHO MIGHT BENEFIT FROM ANTIBIOTIC PROPHYLAXIS?

People with certain heart conditions may be at increased risk of developing infective endocarditis (IE)—an infection of the lining of the heart or heart valves. To protect against IE, or limit its effects should the infection develop, the American Heart Association suggests that antibiotic prophylaxis be considered for people who have¹

- an artificial heart valve or who have had a heart valve repaired with a prosthetic material;
- a history of IE;
- a heart transplant that develops a valve problem;
- certain heart conditions that are congenital (present from birth), including
 - unrepaired or incompletely repaired cyanotic congenital heart disease, including those with palliative shunts and conduits;
 - a 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;
 - any repaired congenital heart disease with residual defect at the site or adjacent to the site of a prosthetic patch or prosthetic device.

WHAT ABOUT PEOPLE WHO HAVE HAD HIP OR KNEE REPLACEMENT SURGERY?

The American Dental Association does not routinely recommend antibiotic prophylaxis for people who have had a hip, knee, or other joint replaced.² People who have had joint replacement surgery and have a weakened immune system—meaning that they are less able to fight infections—should talk to their dentist and their orthopedic surgeon to see if antibiotic prophylaxis is recommended. Conditions such as diabetes, rheumatoid arthritis, or cancer and medications such as steroids

and those used in chemotherapy can affect your ability to fight infections.

WHY IS ANTIBIOTIC PROPHYLAXIS NOT USED FOR EVERY PATIENT?

Antibiotic prophylaxis is not right for everyone and—like any medicine—antibiotics should only be used when the potential benefits outweigh the risks of taking them. For example, consider that infections after dental treatment are not common and that, in some people, antibiotics can have side effects. Side effects associated with taking antibiotics include stomach upset, diarrhea, and allergic reactions, some of which can be life threatening. In addition, using antibiotics too often or incorrectly can allow bacteria to become resistant to those medications. Therefore, it is important to use antibiotic prophylaxis in only those people at greatest risk of developing an infection after dental treatment.

WHAT CAN YOU DO?

Tell your dentist about any changes in your health since your last visit and make sure he or she knows about all medications you are taking. With this information in hand, your dentist can talk to you and your physician about whether you could benefit from antibiotic prophylaxis.

Good home care is key to good dental health. Be sure to brush your teeth twice a day with a fluoride toothpaste, clean between your teeth once a day, eat a balanced diet, and visit your dentist regularly. ■

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“For the Patient” provides general information on dental treatments. It is designed to prompt discussion between dentist and patient about treatment options and does not substitute for the dentist’s professional assessment based on the individual patient’s needs and desires.

1. Wilson W, Taubert KA, Gewitz M, et al. Prevention of infective endocarditis: guidelines from the American Heart Association: a guideline 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. *JADA*. 2008;139(suppl):3S-24S.

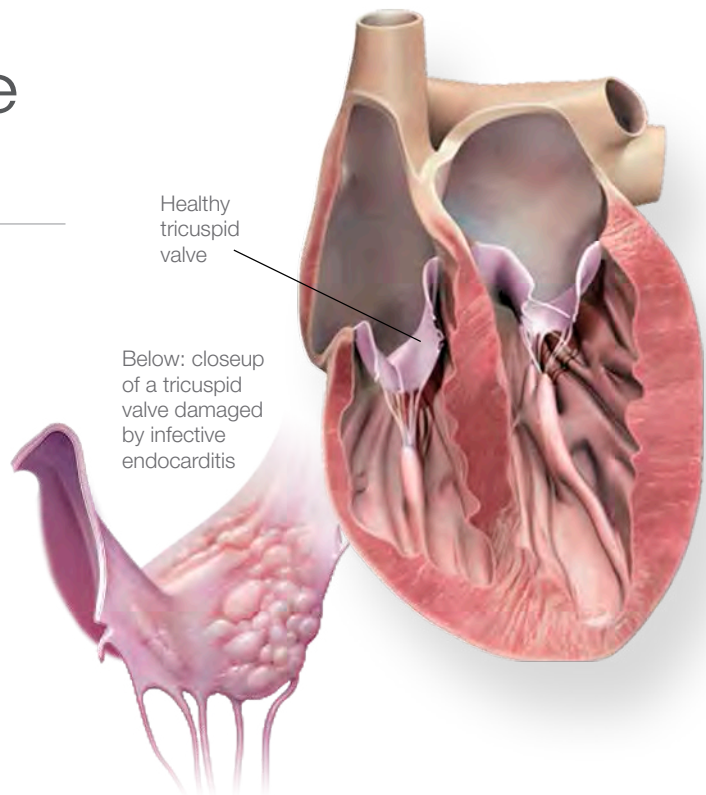
2. Sollecito TP, Abt E, Lockhart PB, et al. The use of prophylactic antibiotics prior to dental procedures in patients with prosthetic joints: evidence-based clinical practice guideline for dental practitioners—a report of the American Dental Association Council on Scientific Affairs. *JADA*. 2015;146(1):11-16.e8.



What Is Infective Endocarditis?

Infective (bacterial) endocarditis (IE) is an infection of either the heart's inner lining (endocardium) or the heart valves. Infective endocarditis is a serious — and sometimes fatal — illness. Two things increase risk for it to occur: pathogens such as bacteria or fungi in the blood and certain high-risk heart conditions.

Men, women and children of all racial and ethnic groups can get it. In the United States, there are up to 34,000 hospital discharges related to IE each year.



What's the role of bacteria?

Certain bacteria normally live on parts of your body. They live in or on the:

- mouth and upper respiratory system.
- intestinal and urinary tracts.
- skin.

Bacteria can get in the bloodstream. This is called bacteremia. These bacteria can settle on abnormal, damaged, or prosthetic heart valves or other damaged heart tissue. If this happens, they can damage or even destroy the heart valves.

The heart valves are important in guiding blood flow through the heart. They work like doors to keep the blood flowing in one direction. If they become damaged, the results can be very serious.

A brief bacteremia can occur after many routine daily activities such as:

- tooth brushing and flossing.
- use of wooden toothpicks.

- use of water picks.
- chewing food.

It can also result after certain surgical and dental procedures. Not all bacteria cause endocarditis, though.

What's the heart's role?

People who have certain heart conditions are at increased risk of developing infective endocarditis. People with the highest risk for poor outcomes from IE may be prescribed antibiotics prior to dental procedures to reduce their risk of developing IE.

Heart conditions that put people at the highest risk for poor outcomes from IE include:

- artificial (prosthetic) heart valves or heart valves repaired with artificial material
- a history of infective endocarditis
- some kinds of congenital heart defects
- abnormality of the heart valves after a heart transplant

People who've had IE before are at higher risk of getting
(continued)



it again. This is true even when they don't have heart disease.

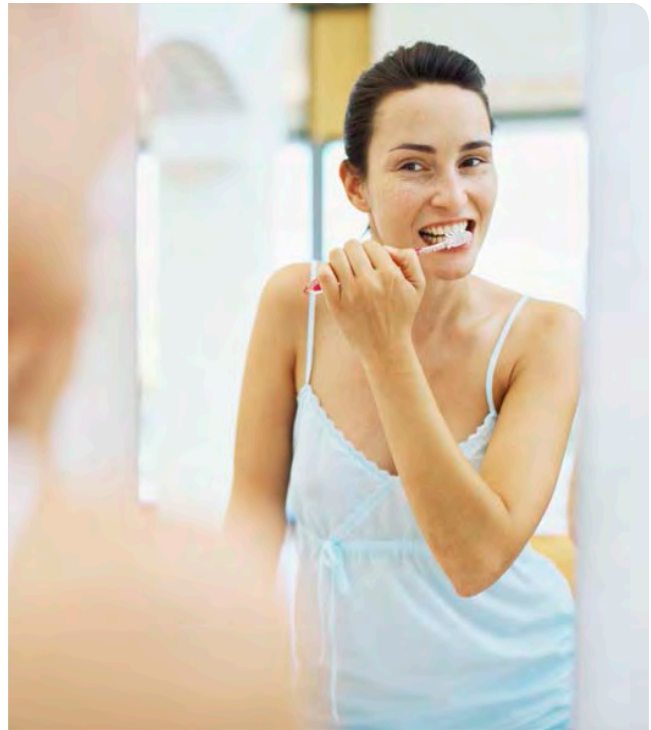
How can infective endocarditis be prevented?

Not all cases can be prevented. That's because we don't always know when an infection will occur.

For patients whose heart conditions put them at the highest risk for adverse events from IE, the American Heart Association (AHA) recommends antibiotics before certain dental procedures. These include procedures that involve manipulation of gingival tissue or the periapical region of teeth, or perforation of the oral mucosa. However, for most patients, antibiotics are not needed.

The AHA has an endocarditis wallet card in English and Spanish. People who have been told that they need to take antibiotics should carry it. You can get it from your doctor or on our Web site, **heart.org**. Show the card to your dentist or physician. It will help them take the precautions needed to protect your health.

Keeping your mouth clean and healthy and maintaining regular dental care may reduce the chance of bacteremia from routine daily activities.



Patients whose heart conditions put them at risk for IE may reduce the risk by practicing good dental hygiene. In some cases, they may need to take antibiotics prior to dental procedures.

HOW CAN I LEARN MORE?

- 1** Call **1-800-AHA-USA1** (1-800-242-8721), or visit **heart.org** to learn more about heart disease and stroke.
- 2** Sign up to get *Heart Insight*, a free magazine for heart patients and their families, at **heartinsight.org**.
- 3** Connect with others sharing similar journeys with heart disease and stroke by joining our Support Network at **heart.org/supportnetwork**.

Do you have questions for the doctor or nurse?

Take a few minutes to write your questions for the next time you see your healthcare provider.

For example:

What conditions do I have that put me at risk for endocarditis?

Should I take antibiotics before I see the dentist?



We have many other fact sheets to help you make healthier choices to reduce your risk, manage disease or care for a loved one. Visit **heart.org/answersbyheart** to learn more.



American Heart Association®

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IMPROVING ANTIBIOTIC USE



BE ANTIBIOTICS AWARE
SMART USE, BEST CARE

Do I really need antibiotics?



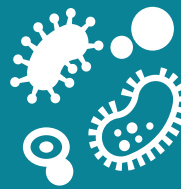
SAY YES TO ANTIBIOTICS

when needed for certain infections caused by **bacteria**.



SAY NO TO ANTIBIOTICS

for **viruses**, such as colds and flu, or runny noses, even if the mucus is thick, yellow or green. Antibiotics also won't help for some common bacterial infections including most cases of bronchitis, many sinus infections, and some ear infections.



Antibiotics are only needed for treating certain infections caused by bacteria.

Antibiotics do NOT work on viruses.

Do antibiotics have side effects?

Anytime antibiotics are used, they can cause side effects. When antibiotics aren't needed, they won't help you, and the side effects could still hurt you. Common side effects of antibiotics can include:



Rash



Dizziness



Nausea



Yeast Infections



Diarrhea

More serious side effects include *Clostridium difficile* infection (also called *C. difficile* or *C. diff*), which causes diarrhea that can lead to severe colon damage and death. People can also have severe and life-threatening allergic reactions.

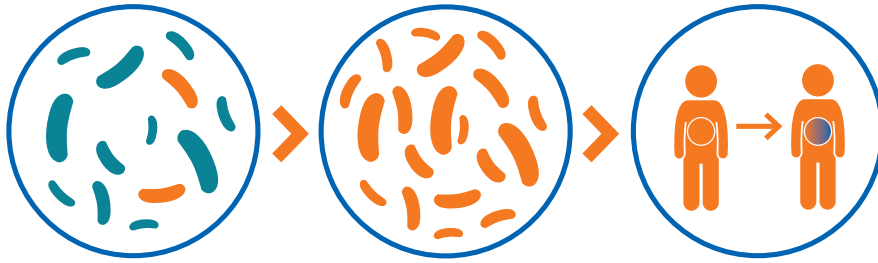
Antibiotics save lives. When a patient needs antibiotics, the benefits outweigh the risks of side effects.

1 out of 5

medication-related visits to the ED are from reactions to antibiotics.

What are antibiotic-resistant bacteria?

Antibiotic resistance occurs when bacteria no longer respond to the drugs designed to kill them. Anytime antibiotics are used, they can cause antibiotic resistance.



Bacteria, not the body, become resistant to the antibiotics designed to kill them.

When bacteria become resistant, antibiotics cannot fight them, and the bacteria multiply.

Some resistant bacteria can be harder to treat and can spread to other people.

Each year in the United States, at least **2 million people** get infected with antibiotic-resistant bacteria. At least **23,000 people** die as a result.

Can I feel better without antibiotics?

Respiratory viruses usually go away in a week or two without treatment. To stay healthy and keep others healthy, you can:



Clean Hands



Cover Coughs



Stay Home When Sick



Get Recommended Vaccines

To learn more about antibiotic prescribing and use, visit www.cdc.gov/antibiotic-use.

CHAPTER 4: SUPPLEMENTAL MATERIAL

These materials were compiled by CDPH to supplement the Educate Section of the IDPH Antibiotic Stewardship Toolkit.

Included:

- 1. CDPH Brochure: Do You Need Antibiotics From Your Dentist?**
- 2. CDPH Brochure: Antibiotics Aren't Always the Answer**
- 3. BC CDC Handout: Do Bugs Need Drugs?**
- 4. CDC Handout: Is it Really a Penicillin Allergy**
- 5. CDPH Poster: Using the Right Tool (English, Spanish)**

How can my dentist help me Be Antibiotics Aware?

Your dentist plays an important role in your oral health. When you need antibiotics for an oral infection or prior to receiving dental work, it is important to take them exactly as prescribed. Your dentist can talk to you about when antibiotics are needed, what they do and do not treat, and why you should not share your antibiotics or save them for a future illness. Your dentist can tell you about possible side effects to watch for, such as *Clostridioides* (formerly *Clostridium*) *difficile* (also called *C. difficile*).

When do I need antibiotics from my dentist?

Antibiotics are needed for treating certain oral infections caused by bacteria—especially if fever or swelling is present. Antibiotic prophylaxis—when antibiotics are prescribed as a precaution to prevent infection—is sometimes used before a patient gets dental work. Before having dental work done, talk to your dentist about any drug allergies or medical conditions.

What is the right way to take antibiotics?

Your dentist can explain:

- What dose needs to be taken.
- At what times it should be taken.
- If it needs to be taken with food and water.

If your dentist prescribes an antibiotic, ask if it is recommended for your condition.



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CHICAGO DEPARTMENT OF PUBLIC HEALTH

How can I keep my mouth healthy?

You can keep your mouth healthy by:

- Brushing your teeth with fluoride toothpaste and flossing.
- Visiting your dentist regularly, even if you have no natural teeth or have dentures.
- Limiting alcoholic drinks.
- Drinking fluoridated water, especially if you have dry mouth.
- Not using any tobacco products or quitting smoking if you currently smoke.
- Managing chronic conditions.

Talk to your dentist about good oral hygiene and steps you can take to prevent infections.

Improving the way dentists prescribe antibiotics, and the way we take antibiotics, helps keep us healthy now, helps fight antibiotic resistance, and ensures that these life-saving drugs will be available for future generations.



To learn more about antibiotic prescribing and use, visit www.cdc.gov/antibiotic-use.

Do You Need Antibiotics From Your Dentist?



BE ANTIBIOTICS AWARE

SMART USE, BEST CARE



What don't antibiotics treat?

Antibiotics do not work for oral infections caused by viruses, cold sores, or fungal infections. They will also not cure a toothache. Your dentist must examine your mouth, determine what is causing the pain, and decide if antibiotics are appropriate for your dental problem.

What is antibiotic resistance?

Antibiotic resistance is one of the most urgent threats to the public's health. Any time antibiotics are used, they can lead to side effects and antibiotic resistance.

Always remember:

- Antibiotic resistance does not mean the body is becoming resistant to antibiotics; it means bacteria have become resistant to the antibiotics designed to kill them.
- When bacteria become resistant, antibiotics cannot fight them, and the bacteria multiply.
- Some resistant bacteria can be harder to treat and can spread to other people.



What are the possible side effects of taking antibiotics?

Antibiotics save lives. When you need antibiotics, the benefits usually outweigh the risks of side effects or antibiotic resistance.

Side effects from antibiotics can include:

- Rash
 - Dizziness
 - Nausea
 - Yeast infections
- More serious side effects include:**
- *C. difficile* infection
 - Life-threatening allergic reactions
 - Interactions between antibiotics and other medications



9.5% of all antibiotics prescribed in outpatient settings are prescribed by dentists. In 2016, that totaled 25.7 million antibiotic prescriptions.

When antibiotics aren't needed, they won't help you, and the side effects could still hurt you.

Talk with your dentist if you have any questions about your antibiotics or if you develop any side effects, especially diarrhea, which could be a *C. difficile* infection. *C. difficile* can lead to severe colon damage and death and needs to be treated immediately.

Reactions from antibiotics cause one out of six medication-related visits to the emergency department.

Why does taking antibiotics lead to antibiotic resistance?

Any time antibiotics are used, they can cause side effects and lead to antibiotic resistance. Antibiotic resistance is one of the most urgent threats to the public's health. Always remember:

1. Antibiotic resistance does not mean the body is becoming resistant to antibiotics; it is that bacteria have become resistant to the antibiotics designed to kill them.
2. When bacteria become resistant, antibiotics cannot fight them, and the bacteria multiply.
3. Some resistant bacteria can be harder to treat and can spread to other people.

Each year in the United States, at least 2 million people get infected with antibiotic-resistant bacteria. At least 23,000 people die as a result.



What is the right way to take antibiotics?

If you need antibiotics, take them exactly as prescribed.

Improving the way healthcare professionals prescribe antibiotics, and the way we take antibiotics, helps keep us healthy now, helps fight antibiotic resistance, and ensures that these life-saving drugs will be available for future generations.

Talk with your doctor if you have any questions about your antibiotics, or if you develop any side effects, especially diarrhea, since that could be *Clostridium difficile* infection (also called *C. difficile* or *C. diff*), which needs to be treated. *C. diff* can lead to severe colon damage and death.

What are the side effects?

Common side effects range from minor to very severe health problems and can include:

- Rash
- Dizziness
- Nausea
- Diarrhea
- Yeast infections

More serious side effects can include:

- *Clostridium difficile* infection
- Severe and life-threatening allergic reactions

To learn more about antibiotic prescribing and use, visit www.cdc.gov/antibiotic-use.



Antibiotics Aren't Always the Answer.



BE ANTIBIOTICS AWARE

SMART USE, BEST CARE



Why is it important to Be Antibiotics Aware?

Antibiotics save lives. When a patient needs antibiotics, the benefits outweigh the risks of side effects or antibiotic resistance.

When antibiotics aren't needed, they won't help you, and the side effects could still hurt you. Reactions from antibiotics cause 1 out of 5 medication-related visits to the emergency department.

In children, reactions from antibiotics are the most common cause of medication-related emergency department visits.

What do antibiotics treat?

Antibiotics are only needed for treating certain infections caused by bacteria. Antibiotics are critical tools for treating common infections, such as pneumonia, and for life-threatening conditions including sepsis, the body's extreme response to an infection.

What don't antibiotics treat?

Antibiotics do not work on viruses, such as colds and flu, or runny noses, even if the mucus is thick, yellow or green. Antibiotics also won't help some common bacterial infections including most cases of bronchitis, many sinus infections, and some ear infections.

How can I stay healthy?

You can stay healthy and keep others healthy by:

- Cleaning hands
- Covering coughs
- Staying home when sick
- Getting recommended vaccines, for the flu, for example

Talk to your doctor or nurse about steps you can take to prevent infections.





ANTIBIOTICS AND DENTAL CARE

Your body is filled with many different types of bacteria—good and bad. The good bacteria help to keep your body and your mouth healthy. At times antibiotics may be prescribed to prevent an infection or to fight an infection caused by bad bacteria. This is not always required; antibiotics should only be used when the evidence indicates they are helpful.

What is the harm in overusing antibiotics?

If you use antibiotics too often, or incorrectly, the bacteria may develop antibiotic resistance. This is a protection mechanism that allows the bacteria to survive. In this case, the use of antibiotics is no longer helpful to kill the bad bacteria and may cause more harm by killing the good bacteria. Keeping the good bacteria is the best defense against bad bacteria. Some individuals may experience antibiotic resistance regardless of their use of antibiotics.

Are antibiotics needed for dental care?

There are generally two uses for antibiotics in dentistry: to fight an infection and to prevent an infection. The use of antibiotics will depend on a number of factors including your dental condition, the procedure as well as your personal medical health history. In many cases, antibiotics are not required.

Fighting Infections

Although an antibiotic may be prescribed if you are experiencing a serious infection, the antibiotics do not treat the underlying cause of the infection. In most cases prompt treatment of the condition is enough to clear an infection and eliminate the need for antibiotics, as in the following example.

ABSCESED TOOTH:

A tooth abscess is a local collection of pus in or around the tooth and is best treated by draining the pus. This should be done as soon as possible to prevent the spread of the infection to other parts of the head and neck. It can be done by a local procedure in the mouth, through a root canal or by removing the tooth completely.

Antibiotics are generally not needed if the pus is drained. In fact, scientific studies have shown that antibiotics are unnecessary for treating tooth abscesses.

Preventing Infections

In some cases, an antibiotic may be prescribed prior to dental treatment.

TOOTH EXTRACTION:

Most simple extractions do not require antibiotics—removing the tooth is usually enough to clear the infection. Complex extractions, such as removing wisdom teeth, may require a single dose of antibiotics prior to surgery.

IMPLANT PLACEMENT:

Your dentist may recommend that you use an antibiotic prior to placing an implant. In most cases, no further antibiotics are needed after the implant is placed.

MEDICAL CONDITIONS:

Previously patients with prosthetic joints or heart conditions were routinely prescribed antibiotics prior to dental cleanings or other dental procedures.

Prosthetic joints: The best available scientific evidence now shows that patients with prosthetic joints do not require antibiotics prior to dental care.

Heart conditions: There are still a small number of heart conditions for which antibiotics are recommended prior to dental care. Patients are advised to consult with their dentist.

- Always update your dentist on any medical conditions, medications you may be taking, recent surgeries and/or changes to your health.
- Provide permission for your dentist to consult with your primary care physician in advance of treatment to determine if antibiotics are needed.

Early detection and daily mouth care can prevent dental pain and infection. Brush twice daily, floss at least once a day, eat a well-balanced diet and visit your dentist regularly for an exam to detect the early signs of disease.

YOUR DENTAL HEALTH MATTERS

To learn more talk to your dentist or visit yourdentalhealth.ca



BC Centre for Disease Control
An agency of the Provincial Health Services Authority



British Columbia Dental Association

MEMBER OF THE CANADIAN DENTAL ASSOCIATION



Your mouth is full of good and bad bacteria. The good bacteria keep your mouth healthy. Sometimes the bad bacteria take over and can cause an infection. In the mouth, draining the infection is often all that you need. If the dentist cannot drain infection completely, antibiotics are given to help fight the infection. Some people are also at more risk of an infection and your dentist might prescribe one dose of an antibiotic before a dental procedure to prevent an infection.

Antibiotics & Dental Care

What is the harm in overusing antibiotics?

Your mouth is full of good and bad bacteria. The good bacteria keep your mouth healthy. Sometimes the bad bacteria take over and can cause an infection. In the mouth, draining the infection is often all that you need. If the dentist cannot drain infection completely, antibiotics are given to help fight the infection. Some people are also at more risk of an infection and your dentist might prescribe one dose of an antibiotic before a dental procedure to prevent an infection. If you use antibiotics too often, or incorrectly, the bacteria may develop antibiotic resistance. This is a protection mechanism that allows the bacteria to survive. In this case, the use of antibiotics does not kill the bad bacteria and may cause more harm by killing the good bacteria. Keeping the good bacteria is the best defense against bad bacteria. Some individuals may experience antibiotic resistance regardless of their use of antibiotics.

Are antibiotics needed for dental care?

The use of antibiotics will depend on a number of factors including your dental condition, the procedure, as well as your personal medical health history. More recent studies show that antibiotics are not needed for many dental conditions.

Early detection and daily mouth care can prevent dental pain and infection. Brush twice daily, floss at least once a day, eat a well-balanced diet and visit your dentist regularly for an exam to detect the early signs of disease.

Penicillin allergies seem to be surprisingly common – or are they?

One in 10 Canadians reports having had a penicillin allergy reaction. In fact many of these reactions are not an allergy, but rather a side effect of the antibiotic, such as diarrhea, dizziness or nausea. Sometimes a rash due to a virus infection can be mistaken for an allergy if a patient is also on antibiotics (of course, antibiotics do not work for viruses).

TRUTH IS:

Penicillin is a very important and useful drug.



You Might Not Be Allergic to Penicillin

DID YOU KNOW?

True penicillin allergy is rare with an estimated frequency of anaphylaxis (i.e. an extreme allergic reaction) at 1 to 5 per 10,000 cases of penicillin therapy. As well, allergies to penicillin tend to disappear within 10 years.

- **10% of people** report a penicillin allergy
- **Less than 1%** are truly allergic



What is penicillin?

Penicillin belongs to an important group of antibiotics called beta (β)-lactam antibiotics, which are very effective at dealing with common bacterial infections. Penicillin is relatively inexpensive and widely used to treat skin, ear, sinus and upper respiratory tract infections (e.g. bronchitis or laryngitis).

Why is penicillin so important?

Relative to other antibiotics, penicillin can be more effective, less likely to result in superbug bacteria (such as MRSA and VRE)¹, and has a lower risk of *C. difficile* infection (a sometimes severe and difficult to treat cause of diarrhea). Of course, all antibiotics must be used with care and only for bacterial infections.

AN ANTIBIOTIC IS THE WRONG TOOL TO TREAT A VIRUS.



Make sure you use the right tool for the job.

Antibiotics save lives by treating certain infections caused by bacteria, not viruses like colds or flu. When they're not needed, antibiotics won't help you, and the side effects could still hurt you. Ask your doctor when an antibiotic is the right tool for your illness and when it's not.

To learn more about antibiotic prescribing and use, visit www.cdc.gov/antibiotic-use.



LOS ANTIBIÓTICOS NO SON LA HERRAMIENTA CORRECTA PARA TRATAR UN VIRUS.



Asegúrese de usar la que corresponda.

Los antibióticos salvan vidas al tratar ciertas infecciones causadas por bacterias, pero no los virus como los del resfrío o la influenza. No lo ayudarán si no los necesita y sus efectos secundarios aun podrían hacerle daño. Pregúntele al médico cuándo un antibiótico es la herramienta correcta y cuándo no lo es.

Para saber más sobre la prescripción y el uso de antibióticos, visite www.cdc.gov/antibioticos.



**TOME CONCIENCIA
SOBRE LOS
ANTIBIÓTICOS**
BUEN USO, MEJOR TRATAMIENTO



**HEALTHY
CHICAGO**

CHICAGO DEPARTMENT OF PUBLIC HEALTH

IDPH ANTIMICROBIAL STEWARDSHIP TOOLKIT

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