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## REVIEW ON SENSITIVE TEETH AND ANTIBIOTICS FOR TOOTH ABSCESS

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### ABSTRACT

This review article involves explanation about: antibiotics for a tooth abscess like tetracycline will work well for a tooth abscess, as it is a very strong, broad-spectrum, oral antibiotic. The antibiotics typically given for tooth abscesses are amoxicillin, doxycycline, or penicillin, usually for a (7-10) day period or longer if needed. However, aside from the typical ones, and in some cases if the abscess is really bad, your doctor may give you tetracycline to get the job started fast.

**KEYWORDS:** Work, Destroy, Suitable

### INTRODUCTION

The most commonly prescribed tooth infection antibiotics are typically penicillin and cephalexin; however, neither of these is suitable for those who are allergic to penicillin. People who suffer from such allergies are usually prescribed clindamycin. Tetracycline and doxycycline are not considered as effective as clindamycin, but are also sometimes prescribed for those who are allergic to penicillin. Antibiotic dosages are typically determined by the severity of the infection and the overall health of the patient.

Penicillin is probably the most widely prescribed antibiotic for tooth infections or abscesses. Many tooth infections are bacterial, and penicillin is considered especially effective in treating them. The drug works to destroy the bacterial cell wall, making it difficult for the bacteria to spread and grow. Some of the side effects of penicillin include diarrhea and nausea, while an allergy can cause rashes, difficulty breathing, and in severe cases, may even cause death.

Cephalexin is a drug that is part of a group of antibiotics referred to as cephalosporins, and they are similar to penicillin in many ways. Some of the side effects of cephalexin include vomiting, diarrhea, and headache. In addition, cephalexin has been linked to vaginitis and liver damage.

Tooth abscess is a collection of infected material (Pus) caused by a bacterial infection. This painful abscess tooth can occur for many different reasons at different regions but mainly on the center of the tooth. We observe mainly two types like periapical abscess which occurs at the tip of the root and periodontal abscess that occurs in the gums next to tooth root. It has the symptoms like severe and continuous toothache that results in gnawing or throbbing pain, fever, pain while chewing, swollen neck glands, bitter taste in mouth with foul smell to the breath, sensitivity of the teeth to hot or cold, redness and swelling of the gums, swollen area of the upper or lower jaw, general discomfort, uneasiness or ill feeling, etc. It mainly caused by bacteria that enters through either dental cavity or a chip or a crack in the tooth and spread all its way down to the root. This will cause swelling and inflammation at the tip of the root.

Tooth abscess is caused by poor dental hygiene like not brushing or flossing properly, not having regular dental checkups, having diet that high in sugar, sticky food in large amount, dental infections, gum diseases, gingivitis, weak

immune system, etc. Tooth abscess won't go itself without treatment by sometimes if the root of the tooth dies then it will relieve pain but the infection remains active and continues to spread to jaws and other areas of the head and neck and finally may develop to sepsis (if you've a weakened immune system). If a tooth abscess left untreated, then it can lead to serious tooth decay, even life-threatening complications. So consult dentist as early as possible to get rid of the problem. Dentists will treat this by draining it to get rid of the infection. They do some root canal treatment and in some instances it may lead to pull the tooth to prevent the infection and its spreading to other parts of the teeth.

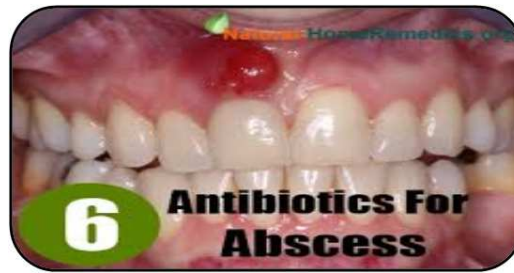


Figure 1



Figure 2

### Amoxicillin

Common brand names: Amoxil, Trimox

Description: Amoxicillin is a member of the penicillin class of antibiotics. It is called an extended-spectrum antibiotic. That means it can kill a wider range of bacteria than penicillin VK. It is better absorbed than ampicillin. It works longer than penicillin VK and ampicillin.

### Dental Uses

**Amoxicillin** is the drug of choice for people who need antibiotics before dental treatments. These people are at risk of developing a heart infection called endocarditis. This is a serious bacterial infection. It may be fatal. People at risk for this infection take antibiotics before dental treatments that tend to cause bleeding. People at risk include those who have:

- Artificial heart valves
- A history of endocarditis
- Certain forms of congenital heart disease
- A transplanted heart that has developed valve disease

**Bleeding can occur in treatments that:**

- Puncture or cut into mouth tissue
- Manipulate the gums or the area around a tooth root

Some people with artificial joints of the hip, knee or elbow also are given amoxicillin before certain dental treatments.

Amoxicillin also is given to people who have abscesses, infections around their wisdom teeth or infections that develop after surgery.

Dosages for dental purposes: If you are at risk for developing bacterial endocarditis, your dentist or physician will prescribe a single 2-gram dose. This is taken 30 to 60 minutes before dental treatments that are likely to cause bleeding. In people at risk for a joint infection, the dose is taken 60 minutes before the dental treatment.

The typical adult dose for dental infections is 250 milligrams to 500 milligrams every 8 hours. It may be prescribed for 7 to 10 days.

Children are given a liquid form of amoxicillin. Their dose is based on body weight.

As with all medicines, be sure to follow your doctor's prescription. Take amoxicillin for the prescribed length of time, even if you start to feel better. Do not stop taking it without talking to your doctor. Stopping an antibiotic too soon may cause bacteria to become resistant to antibiotics. This means the antibiotics won't work the next time.

Concerns and possible side effects: Tell your dentist and physician about all the medicines you take. This should include over-the-counter vitamins and herbal supplements. Also, let your dentist know if you have had a sensitive or allergic reaction to any medicine. If you are pregnant or nursing, or might be pregnant, talk to your primary care doctor before starting any new medicine. This also includes vitamins and supplements.

Amoxicillin can make birth control pills less effective. Therefore, you should discuss this issue with your prescribing doctor.

People taking blood-thinning drugs, such as warfarin (Coumadin) may be more likely to bleed while taking amoxicillin.

Amoxicillin may cause nausea, vomiting, diarrhea and yeast infections. A mild rash occurs in about 5% to 10% of children and some adults who take amoxicillin. It is usually not serious. But you may not be able to tell if this is a common rash or one that is a sign of an allergic reaction. Therefore, tell your doctor about the rash. Sometimes, amoxicillin turns the tongue black. This is known as black hairy tongue. It often goes away.

If you are allergic to amoxicillin or another penicillin drug, do not take it. Allergic reactions vary. Some people get a rash. Some people have a drop in blood pressure. In others, the airway swells and makes it difficult to breathe. If you take a medicine and begin to have difficulty breathing, get medical help right away.

**A dental Abscess** Can be very painful, but you can use over-the-counter painkillers from your local pharmacy to control the pain while you are waiting for dental treatment:

**Ibuprofen** is the preferred painkiller for dental abscesses, but if you are unable to take it for medical reasons, you can take paracetamol instead.

If one painkiller fails to relieve the pain, taking both paracetamol and ibuprofen at the same time can often work (this is safe for adults, but not for children under 16).

Always read and follow the information on the packet about how much to take and how often, and do not exceed the maximum stated dose.

Accidental overdoses have been reported in people who take too many painkillers when trying to relieve the pain of a dental abscess.

Painkillers cannot treat or cure a dental abscess, so they should not be used to delay dental treatment.

#### **To Take Painkillers Safely, Follow this Advice:**

- Do Not take ibuprofen if you are asthmatic or if you have a stomach ulcer, or you have had one in the past
- Do Not take more than one painkiller at a time without first checking with your GP or pharmacist; this can be dangerous, because many over-the-counter products contain similar painkillers and overdosing is possible when combining products
- Ibuprofen and paracetamol are both available as liquid preparations for children
- Aspirin is not suitable for children under 16
- If You are pregnant or breastfeeding, you should take paracetamol

#### **Antibiotics**

Antibiotics are not routinely prescribed to treat dental abscesses because:

- Draining The abscess is a more effective treatment
- Using Antibiotics to treat non-serious infections makes them less effective at treating more serious infections (this is known as antibiotic resistance)
- Antibiotics are usually only required if:
  - There Are Signs of severe infection
  - There Are Signs the infection is spreading, such as swelling of your face or neck
  - You Have a high risk of complications for example, people with a weakened immune system or diabetes

If antibiotics are needed, an antibiotic called amoxicillin or phenoxymethylpenicillin is usually prescribed. If you are allergic to penicillin, clarithromycin may be prescribed instead.

In cases where the infection is severe or spreading, metronidazole may be prescribed. If you are allergic to metronidazole, clindamycin may be prescribed.

Reoccurring infection

If you have a periapical abscess and your infection returns, you may need to be referred to a specialist for further treatment.

In some cases, a dental abscess infection can reoccur even after dental and surgical procedures. If this happens, or if your tooth is severely broken down, it may need to be removed altogether (extracted)

**To limit the Pain and Pressure on your Dental abscess you should:**

- Avoid very hot or cold food and drink
- Eat Cool, soft foods using the opposite side of your mouth from the abscess
- Use A Soft Toothbrush and avoid flossing around the affected tooth

**Sensitive Teeth**

We usually mean that we feel twinges of pain or discomfort in our teeth in certain situations. These may include:

- Tooth decay (cavities)
- Fractured teeth
- Worn fillings
- Gum disease
- Worn tooth enamel
- Exposed tooth root
- Drinking or eating cold things
- Drinking or eating hot things
- Eating sweets
- Touching the teeth with other teeth or the tongue

**There are Two Types of Tooth Sensitivity**

**Dentinal Sensitivity**

Occurs when the dentin (middle layer) of a tooth is exposed. Normally, the dentin is covered by enamel above the gum line and by cementum below the gum line. Dentin contains tiny openings called tubules. Inside each tubule lies a nerve branch that comes from the tooth's pulp (the nerve center of the tooth). When the dentin is exposed, cold or hot temperature or pressure can affect these nerve branches. This causes sensitivity.

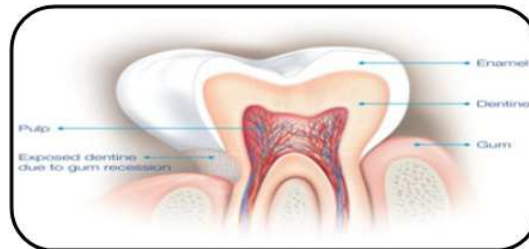
**Sensitive Teeth**

Certain activities, such as brushing, flossing, eating and drinking, can cause sharp, temporary pain in your teeth. Sensitive teeth are typically the result of worn tooth enamel or exposed tooth roots. Sometimes, however, tooth discomfort is caused by other factors, such as a cavity, a cracked or chipped tooth, a recently placed filling or a side effect of other dental procedures, such as bleaching.

Tooth Sensitivity is caused by the Exposure of Dentine

Tooth sensitivity is caused by the gradual exposure of the softer part of your tooth that lies under the tooth enamel, called "dentine".

Dentine has tiny tubes ('tubules') that lead to the nerve and are filled with fluid. Eating or drinking foods and drinks that are hot, cold or sweet can cause a change in fluid movement. This fluid movement causes the nerve endings to react in response, triggering a short, sharp pain.



**Figure 3**

**If you're concerned about sensitive teeth, start by visiting your dentist. He or she can identify or rule out any underlying causes of your tooth pain. Depending on the circumstances, your dentist might recommend:**

- **Desensitizing toothpaste.** After several applications, desensitizing toothpaste can sometimes help block pain associated with sensitive teeth.
- **Fluoride.** Your dentist might apply fluoride to the sensitive areas of your teeth to strengthen tooth enamel and reduce pain. He or she might also suggest the use of prescription fluoride at home.
- **Desensitizing or bonding.** Occasionally, exposed root surfaces can be treated by applying bonding resin to the sensitive root surfaces. Local anesthetic might be needed.
- **Surgical gum graft.** If your tooth root has lost gum tissue, a small amount of gum tissue can be taken from elsewhere in your mouth and attached to the affected site. This can protect exposed roots and reduce sensitivity.
- **Root canal.** If your sensitive teeth cause severe pain and other treatments aren't effective, your dentist might recommend a root canal a procedure used to treat problems in the tooth's soft core (dental pulp). While this might seem like a significant treatment, it's considered the most successful technique for eliminating tooth sensitivity.

To prevent sensitive teeth from recurring, your dentist might offer suggestions to help you maintain your oral health. Twice a day, brush your teeth with a soft-bristled toothbrush and fluoride toothpaste. Floss daily. Avoid vigorous or harsh scrubbing, highly abrasive toothpaste, and excessive brushing and flossing. If you grind your teeth, ask your dentist about a mouth guard. Tooth grinding can fracture teeth and cause sensitivity.

You might also consider limiting acidic foods and drinks, such as carbonated drinks, citrus fruits, wine and yogurt all of which can remove small amounts of tooth enamel over time. When you drink acidic liquids, use a straw to limit contact with your teeth. After eating or drinking an acidic substance, drink milk or water to balance the acid levels in your mouth.

It also helps to avoid brushing your teeth immediately after eating or drinking acidic substances, since acid softens enamel and makes it more vulnerable to erosion during brushing.

**Dentin becomes exposed when the outer protective layers of enamel or Cementum wear away. This can affect one or more teeth. Some causes of dentin exposure include:**

- Brushing your teeth too hard. This can wear away the enamel layer.
- Poor oral hygiene. This may allow tartar to build up at the gum line.
- Long-term tooth wear
- Untreated cavities
- An old filling with a crack or leak
- Receding gums that expose the tooth's roots. Receding gums often are caused by periodontal diseases or by brushing too hard.
- Gum surgery that exposes a tooth's roots
- Tooth whitening in people who have tooth roots that already are exposed
- Frequently eating acidic foods or drinking acidic liquids

**Pulpal sensitivity** is a reaction of the tooth's pulp. The pulp is a mass of blood vessels and nerves in the center of each tooth. Pulpal sensitivity tends to affect only a single tooth. Causes include:

- Decay or infection
- A recent filling
- Excessive pressure from clenching or grinding
- A cracked or broken tooth

If you feel a sharp pain upon biting, you may have a broken or cracked filling. Pain when you release a bite is a sign of a cracked tooth.

### **Symptoms**

Both dentinal and pulpal sensitivity usually involve reactions to temperature or pressure. Sensitivity to cold drinks or foods is the most common symptom. Less often, the teeth are sensitive to hot temperatures. If a single tooth becomes sensitive to heat, the tooth's nerve is dying. In this case, root canal treatment is necessary.

Your dentist will look at your dental history and will examine your mouth. You also will need X-rays to show if there is decay or a problem with the nerve. The dentist will ask about your oral habits. Grinding or clenching your teeth can contribute to sensitivity. Your dentist also will look for decay, deep fillings and exposed root surfaces. He or she may use an explorer a metal instrument with a sharp point to test teeth for sensitivity.

A tooth may be sensitive to cold for several weeks after you get a filling. The metals in amalgam (silver) conduct the cold very well, transmitting it to the pulp. Bonded (tooth-colored) fillings require etching the tooth with acid before the filling is placed. In some cases, this etching removes enough enamel to make the tooth sensitive. However, advances in bonding now make it less likely to cause tooth sensitivity.



Your dentist or endodontist can do tests to see if you need root canal treatment.

### **Expected Duration**

If your tooth becomes sensitive after a deep filling is placed, the problem may go away in several weeks. Sometimes the filling is too high. That puts too much pressure on the tooth when you bite down. Your dentist can reduce the height of the filling. If the sensitivity does not go away over time, the tooth probably needs a root canal.

Sensitivity in more than one tooth may disappear in a short time or it may continue. It depends on the cause of sensitivity. Every case is different. Some people have sensitive teeth for only a month or two. Others have the condition for years.

## **PREVENTION**

### **Dentinal Sensitivity**

You might be able to reduce your chances of dentinal sensitivity by:

- Brushing twice a day and flossing daily
- Using a soft or ultrasoft toothbrush and brushing gently up and down, rather than side to side
- Using a fluoride toothpaste and mouth rinse
- Using a toothpaste that provides protection against sensitivity
- Getting treatment for grinding or clenching your teeth (bruxism)

### **Pulpal Sensitivity**

If a tooth needs root canal treatment, there is no good way to prevent pulpal sensitivity other than to get the needed treatment. Delaying root canal treatment is not recommended. It may result in further problems.

### **Treatment**

**Dentinal sensitivity** is quite treatable, whatever the cause.

Your dentist or dental hygienist will clean your teeth. If your teeth are too sensitive to be cleaned, your dentist may use a local anesthetic or nitrous oxide before the cleaning.

After a cleaning, your dentist may apply a fluoride varnish to protect your teeth. This temporarily reduces sensitivity. It also strengthens your teeth. Your dentist may apply an in-office treatment for sensitivity. These products block the openings (tubules) in dentin and reduce sensitivity. A newer approach is to use a dental laser. The laser treatment also alters the tubules to reduce sensitivity.

Using fluoride toothpastes and fluoride mouth rinses at home will help to reduce sensitivity. You also can buy toothpastes just for sensitive teeth.

Talk to your dentist about which fluoride rinses you should use. Some over-the-counter rinses are acidic. Others are not. You should choose a fluoride mouth rinse that uses neutral sodium fluoride.

**Pulpal sensitivity** will be treated with a root canal if the tooth's nerve is damaged or dying. Your dentist will remove the nerve and place a non-reactive substance (gutta percha) in the space where the nerve was. The tooth no longer

will have a continuous barrier of enamel to protect it. Therefore, it will be restored with either a composite filling or a crown.

To reduce pain due to grinding or clenching, the dentist will make a plastic night guard. Use the guard while you sleep.

Several possible etiologic and predisposing factors are noted for dentin hypersensitivity. Dentin tubules may become exposed as a result of enamel loss from attrition, abrasion, erosion, or abfraction.<sup>1</sup> We know that sensitivity occurs on natural teeth when drinking or eating acidic foods; with extremely hot or cold temperatures; and during the teeth whitening process.

A chemical reaction occurs during teeth whitening, and it is thought that, during this process, the dentinal plugs within the tubules are released. These plugs have been formed in the dentinal tubules to decrease sensitivity. When released, there is fluid flow internally, which excites the pulpal tissue and causes sensitivity. If this truly is how the process occurs, then replacing these plugs as we whiten, or before and after treatment, we will be able to alter the pain sensations while accomplishing the goal of whitening.

- The sensitivity starts along with shorter application times. Sometimes just giving your teeth a short break between treatments can help to alleviate the symptoms.
- **Taking Advil or Aleve** can help reduce the symptoms if taken before applying the whitening product. Taking it ahead of time may prevent the symptoms from surfacing.
- **Check to see** if you are using a product with a lower peroxide level (6 to 10% is a relatively low peroxide level for most people). While you may think that the higher the level of peroxide, the better the result, it is not worth it if you and your teeth are miserable.
- **Limit the cold drinks and foods** while you are whitening. Teeth may be temperature sensitive under normal conditions, but whitening can really exasperate sensitivity issues.
- **Overuse** of whitening products can also cause sensitivity. When used to excess, they have the potential to make your teeth very sensitive or even damage them.
- **Using fluoride rinses and/or sensitivity toothpaste** can help alleviate the symptoms. Fluoride treatments are also sometimes recommended either before; during or after you whiten your teeth.
- **Be sure you are using** a soft bristled brush when brushing your teeth. The softer bristles are gentler on your teeth and gums and can help cut back on your symptoms.
- **Always inform your dentist** if your sensitivity issues persist or worsen. There may be another cause such as gum recession or cavities.
- **Ask your dentist** about desensitizing products that can be applied at the office. When used correctly, they have been known to be effective at reducing sensitivity due to many different causes.

Although tooth sensitivity with whitening is very common, it is usually of short duration, lasting typically 24-48 hours. Years ago, most teeth whitening products contained very harsh ingredients that were found to actually damage teeth

and cause extreme sensitivity. Products have improved greatly since then and now use high quality ingredients that are gentler on your teeth.

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