



What you need to know

When you feel sick, you want to do whatever you can to feel better fast. When antibiotic medicines, like penicillin, were first discovered they were thought to be the magic pill. What we've learned over the years is that antibiotics are not the answer for every illness. This handout gives you some helpful information about when antibiotics work – and when they don't.

Most infections are caused by one of two types of germs: bacteria or viruses. Antibiotics only help with infections caused by bacteria, not those caused by viruses. Viral infections include

the common cold, influenza, and other respiratory and stomach illnesses. Antibiotics will not work for these illnesses.

Bacteria cause infections such as strep throat, some ear infections, and some sinus infections, as well as some cases of pneumonia. For bacterial infections, your doctor may decide antibiotics are the best treatment.

If antibiotics are prescribed, be sure to follow the instructions and take all of the medicine. Using only part of the prescription means that only part of the infection has been treated. Not finishing the medicine can cause even stronger bacteria to develop.

The big problem: bacteria become resistant

Unfortunately, sometimes it's hard to tell whether an illness is caused by a virus or bacteria. So, what's the harm in taking antibiotics just in case? Using antibiotics when they are not needed causes some bacteria to become resistant to the antibiotic, meaning that the medicine no longer works. The more antibiotics you take, the more you risk getting resistant bacteria which are stronger and harder to kill.

If bacteria become resistant, they can stay in your body and cause severe illnesses that cannot be cured with antibiotic medicines. Such illnesses may require stronger treatment, and possibly a stay in the hospital. Kaiser Permanente, the Centers for Disease Control and Prevention, the California Medical Association, and the American Academy of Pediatrics are working hard to make people aware that taking antibiotics when they are not truly necessary can be harmful.

How are infections treated?

Your body is amazing. It has a built-in defense mechanism (your immune system) which will successfully fight most infections on its own, especially ones caused by viruses. In most cases, even if you take no medication your body will cure itself. Getting plenty of rest and drinking lots of clear fluids will help your body to recover on its own.

You can reduce common symptoms by using over the counter medications. For fever you can take acetaminophen (such as *Tylenol*). Because antibiotics do not kill viruses, they will not work to treat most runny noses, coughs, diarrhea, upset stomachs, or sore throats.

Are antibiotics needed when the mucus from the nose changes to green?

We used to think that thick, green mucus was the tell-tale sign of a bacterial infection. Now we know that's not actually true. Viral infections and allergies often cause thick, green mucus for a few days. And as we've learned, antibiotics do not treat viral infections or allergies. Some patients benefit from daily sinus rinses to clear out the mucus. A sinus rinse kit is available in the pharmacy without a prescription.

Should I avoid taking antibiotics?

The short answer is yes, unless you really need them. Taking antibiotics can cause side effects, such as diarrhea (sometimes severe), rashes, and vaginal (yeast) infections and can lead to antibiotic resistance. Use antibiotics only when your doctor recommends it and never take leftover antibiotics.

How do I prevent infections?

Of course, it's best to prevent infections. Most adults get 2 to 4 colds each year. Children average 5 to 6 colds per year, while infants and toddlers average 7 to 8 colds per year. Infants and toddlers in large day care centers can have up to 10 to 12 colds each year.

When to call Kaiser Permanente

Call us if you or your child has one or more of the following symptoms:

- Wheezing, difficulty breathing, or tightness in the chest
- A runny nose (not allergies) lasting for more than 2 weeks without getting better
- A cough that lasts more than 3 weeks
- A deep cough with lots of mucus
- A very sore throat and a hard time swallowing
- Severe ear pain, sudden hearing loss or discharge from the ear
- Vomiting, diarrhea or dehydration
- Painful urination

- A red eye with a mucus-like (pus) discharge (sometimes called pink eye)
- Apparent recovery followed by renewed symptoms
- Fever
 - ✓ Adults: 100.4°F or higher for three days or more that doesn't go down with home treatment along with a stiff neck, a severe headache or a rash
 - ✓ Children 2 months or younger: over 100.4°F
 - ✓ Children 3 months or older: over 100.4°F with any of the symptoms above or the two listed below:
 - Confusion, listlessness, or severe lack of energy
 - A bulging soft spot on the head

Additional resources

- Connect to our Web site at kp.org to access health and drug encyclopedias, interactive programs, health classes, and more. You will also find featured health topics on colds and flu, allergies, asthma and others conditions.
- Contact your local Kaiser Permanente Health Education Center or Department for health information, programs, and other resources.

This information is not intended to diagnose or to take the place of medical advice or care you receive from your physician or other health care professional. If you have persistent health problems, or if you have additional questions, please consult with your doctor. If you have questions or need more information about your medication, please speak to your pharmacist. Kaiser Permanente does not endorse the medications or products mentioned. Any trade names listed are for easy identification only.