HEALTH BASICS

Colds and flu - antibiotics

An explanation of why antibiotics do not treat colds or flu and when bacterial infections may need them.

WHAT IT IS
Guidance about antibiotic use for viral respiratory infections

WHERE IT COMES UP
Colds, influenza, coughs, sore throats, and antibiotic decisions

WHY IT MATTERS
Avoiding ineffective treatment, side effects, and antibiotic resistance

WHAT IT IS NOT
Not a disease or diagnosis

WHO TO ASK
A pharmacist, primary care clinician, or urgent care service

HOW IT IS CHECKED
Clinical assessment and selected swabs, blood tests, or imaging

Overview

Antibiotics like amoxicillin or doxycycline are medicines that treat certain infections caused by bacteria. They do not kill viruses.

The common cold and influenza, usually called flu, are caused by viruses. This means antibiotics do not treat the infection, shorten it, or stop it spreading to other people.

A cough, blocked nose, sore throat, fever, or colored mucus does not automatically mean that you need an antibiotic. These features can occur during an ordinary viral infection. Yellow or green mucus can result from immune cells and inflammation rather than bacteria.

Sometimes a bacterial infection develops during or after a cold or flu. Examples include bacterial pneumonia, a bacterial sinus infection, or a middle ear infection. These conditions may need an antibiotic, but the decision is based on the full pattern of illness, an examination, and sometimes testing.

Influenza antiviral medicines are different from antibiotics. Antivirals like acyclovir or oseltamivir act against viruses and may be offered for suspected or confirmed flu in some situations, particularly when illness is severe or the person has a higher risk of complications.

How it works

Bacteria and viruses are different types of germs.

Bacteria are living cells with structures that some antibiotics can target. Depending on the medicine, an antibiotic may damage the bacterial cell wall, interfere with bacterial proteins, or stop bacteria from multiplying.

Viruses work differently. They enter your cells and use those cells to make more virus. The targets attacked by antibiotics are not present in cold and flu viruses. Taking an antibiotic therefore does not give your immune system extra help against these infections.

Your immune system usually clears a cold without treatment aimed at the virus. Flu also often improves with time, although it can be more serious, especially for older adults, young children, pregnant people, and people with certain long-term health conditions.

Antibiotics may become relevant if a clinician suspects a bacterial infection. There is no single test that decides whether every cough, sore throat, or fever needs antibiotics. Assessment may include:

Tests are not always necessary. Some bacterial infections can be assessed from the history and examination, while some test results may not clearly separate viral infection from bacterial infection.

- How long the illness has lasted and whether it is improving
- Whether symptoms improved and then became worse
- An examination of the throat, ears, chest, or sinuses
- Measurements such as temperature, heart rate, and oxygen level
- Selected swabs, blood tests, urine tests, or chest imaging

Why it matters for your health

Taking antibiotics when they are not likely to help exposes you to possible harm without treating the cause of the illness.

Common antibiotic side effects can include nausea, diarrhea, stomach discomfort, or a rash. Some people develop thrush, which is an overgrowth of yeast. Rarely, an antibiotic can cause a serious allergic reaction.

Antibiotics can also disturb the bacteria that normally live in the bowel. In some cases, this allows Clostridioides difficile , often shortened to C. diff , to grow and cause significant diarrhea

and bowel inflammation.

Antibiotic resistance is another concern. Resistance happens when bacteria change so that an antibiotic no longer works well against them. It is the bacteria, not your body, that become resistant. Resistant infections can be harder to treat and may require different medicines.

This does not mean antibiotics should always be avoided. When a bacterial infection is likely and treatment is expected to help, antibiotics can be important. The aim is to use them when their benefits are likely to outweigh their risks.

What can go wrong

One problem is expecting an antibiotic to treat a viral cold or flu. It will not remove the virus, and side effects can occur even when the medicine provides no benefit.

Another problem is using leftover antibiotics or someone else's prescription. The medicine may be wrong for the suspected bacteria, the amount may be unsuitable, or there may not be enough for the intended course. It can also delay assessment of an illness that needs different care.

A bacterial infection can occasionally occur alongside or after a viral infection. Named examples include:

Routine follow-up is appropriate if symptoms are not improving as expected, improve and then clearly worsen, or keep returning. A clinician can reassess whether the illness still appears viral or whether another condition may be present.

Seek urgent medical advice if you develop shortness of breath, chest pain, confusion, severe weakness, signs of dehydration, or a fever or cough that improves and then becomes substantially worse. Babies, pregnant people, older adults, and people with weakened immune systems or serious long-term conditions may need earlier assessment.

Call emergency services for severe difficulty breathing, blue or gray lips or skin, collapse, inability to wake, a seizure, or signs of a severe allergic reaction such as swelling of the mouth or throat with breathing difficulty.

For a baby under 3 months, a temperature of 38°C or higher needs prompt medical assessment.

- Pneumonia: infection and inflammation in the lungs
- Bacterial sinusitis: bacterial infection in the air-filled spaces around the nose
- Middle ear infection: infection behind the eardrum

- Strep throat: throat infection caused by group A streptococcal bacteria

What you can do

If antibiotics are not prescribed, you can ask what diagnosis is most likely, how long improvement may take, and which changes should prompt another assessment. A pharmacist can advise on suitable non-prescription symptom relief based on your age, health conditions, pregnancy status, and other medicines.

If flu is suspected, ask whether an antiviral medicine is relevant. Timing matters for these medicines, and treatment decisions take account of how long symptoms have been present, illness severity, and the risk of complications.

If an antibiotic is prescribed, ask:

Take the medicine exactly as directed on the prescription and label. Do not save it for a future illness or share it. Return unwanted antibiotics through a pharmacy or another local medicine-return service rather than flushing them or putting them down a sink.

Keep a record of medicine allergies and what happened during the reaction. Nausea alone is not the same as an allergy, while hives, facial swelling, or breathing trouble may indicate an allergic reaction. An accurate record can help clinicians choose safer treatment in the future.

There is no home test that can reliably tell you whether a cold or flu needs antibiotics. Home flu or COVID-19 tests may identify a virus, but they do not assess every possible bacterial complication.

- Which bacterial infection it is intended to treat
- How and when to take it
- Which side effects need medical advice
- What to do if a dose is missed
- When to seek reassessment if you are not improving

Common questions

Can antibiotics stop a cold from becoming a chest infection?

Antibiotics are not routinely used to prevent a bacterial infection after a viral cold. They do not prevent the virus from affecting the airways, and unnecessary treatment can cause side effects.

Does green mucus mean I need antibiotics?

Not by itself. Mucus can change color during a viral infection because it contains immune cells and other material. Duration, severity, worsening symptoms, examination findings, and other health factors provide more useful information.

Why did I receive antibiotics for a similar illness before?

The earlier illness may have had different findings, or a bacterial infection may have been suspected. Prescribing practice and available evidence can also change. A previous prescription does not show that antibiotics are needed for a new illness.

Can I ask for a test before deciding?

Yes, but a useful test does not exist for every situation. Depending on the symptoms, a clinician might consider a throat swab, viral test, blood test, oxygen measurement, urine test, or chest X-ray. In many uncomplicated illnesses, examination and follow-up advice are more useful than testing.

What is a delayed antibiotic prescription?

This is a prescription intended for use only if specific changes occur, such as symptoms failing to improve within a stated period. If you receive one, make sure you understand exactly when to start it and when to seek reassessment instead.

Are antivirals the same as antibiotics?

No. Antivirals target particular viruses, while antibiotics target bacteria. Some people with suspected or confirmed flu may benefit from antiviral treatment, but antibiotics do not replace it.

Sources

- Centers for Disease Control and Prevention: Healthy Habits-Antibiotic Do's and Don'ts
- Centers for Disease Control and Prevention: Manage Common Cold
- Centers for Disease Control and Prevention: Treatment of Flu
- National Institute for Health and Care Excellence: Cough (acute)-antimicrobial prescribing, guideline NG120
- NHS: Antibiotics
- World Health Organization: Antimicrobial resistance fact sheet