

Learn About the Adverse Effects of Antibiotics– Everything You Need to Know to Protect Your Health *proteger tu salud.*

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Introduction

Antibiotics have been one of the greatest achievements of modern medicine. Since their discovery in the mid-20th century, they have saved millions of lives by treating bacterial infections that were once fatal. However, their use is not without risks. Adverse effects can range from mild discomfort, such as nausea and skin rashes, to serious complications in the person taking antibiotics, and even to the development of resistant bacteria that jeopardize our ability to fight common infections—something that has been considered a major global health issue for several years now.

In this letter, aimed at the entire community, we want to inform and guide you, and help you understand what the adverse effects of antibiotics are, how to identify them, what to do if they appear, and above all, how to prevent them. We also explain the importance of bacterial resistance, a problem that affects all us and limits treatment options for ourselves and future generations.

1. What are the adverse effects of antibiotics?

Adverse effects are unwanted reactions that can occur during or after the use of a medication, and they can vary in intensity or form. In the case of antibiotics, some of the most common unwanted events are:

- **Gastrointestinal disorders**, such as nausea (feeling like vomiting), diarrhea, abdominal pain, or intestinal inflammation (antibiotic-associated colitis).
- **Allergic reactions**: rashes or skin eruptions, itching, hives (skin rash), swelling of lips or eyelids, and even severe reactions like anaphylaxis (difficulty breathing, dizziness, and fainting).

- **Hematological(blood)alterations:** these may appear as changes in the number of white or red blood cells or platelets, which can lead to infections, anemia, or bleeding.
- **Liver or kidney damage:** some antibiotics can affect the liver or kidneys, which is detected through laboratory tests.
- **Bacterial resistance:** Bacteria become resistant to antibiotics, meaning that antibiotics are no longer effective at killing or controlling the growth of bacteria. One of the biggest problems is that the inappropriate or excessive use of antibiotics contributes to this resistance, making them harder to control.



2. How can you recognize adverse effects?

Be alert and contact a healthcare professional if you notice any of the following symptoms while taking antibiotics:

- **Skin changes:** rashes or eruptions, redness, swelling, or blisters.
- **Persistent digestive problems:** severe diarrhea, vomiting, or abdominal pain that doesn't go away.
- **Fever that doesn't improve:** if your temperature remains high or worsens, it may indicate an additional problem.
- **Difficulty breathing or intense dizziness:** this may be a sign of a serious allergic reaction.

Some damage (such as liver or kidney damage) may not show immediate symptoms and may only be detected through blood tests or specific examinations. Therefore, for prolonged treatments, the doctor may request periodic lab tests.

3. What lab tests should be ordered to detect adverse or harmful effects of antibiotics?

- **Liver function tests:** transaminases, alkaline phosphatase, and bilirubin.
- **Kidney function tests:** urea, creatinine, and urinalysis.
- **Hematological or blood tests:** these evaluate the number and quality of white blood cells (defense cells), blood clotting (platelets), or the presence of anemia (red blood cells and hemoglobin).
- **Bacterial cultures with sensitivity testing:** these assess how sensitive the bacteria are to antibiotics. This information is crucial for the appropriate use of antibiotics and to avoid using unnecessary, inadequate, or ineffective drugs, thus helping prevent the emergence or spread of resistance.
- **Allergy tests:** when an allergic reaction to an antibiotic is suspected, these tests help confirm the type and severity of the allergy.

- **Drug level tests:** not routinely necessary, but when required, they can be very useful. They determine the level of antibiotic in your blood and whether it is adequate, insufficient, or too high. Based on this, the medication type, dose, or frequency may be adjusted.

4. What to do if adverse effects to antibiotics occur?

Do not make any decisions without first consulting your treating doctor and informing them in detail about all symptoms. The healthcare professional will assess the need to change the antibiotic, adjust the dose, or offer medication to control side effects (e.g., antihistamines for allergies).

- **Do not stop the antibiotic without medical advice:** stopping treatment on your own may worsen the infection, increase the risk of relapse, and facilitate the development of bacterial resistance.



5. How to prevent adverse effects through rational use of antibiotics?

Prevention is key. Rational use of antibiotics means:

- **Do not self-medicate:** antibiotics should only be used with a medical prescription. Many common illnesses like colds, flu, and some types of diarrhea are caused by viruses, and antibiotics are not effective against them.
- **Follow the prescribed dose and treatment duration:** Even if you feel better before completing the treatment, it's important to follow your doctor's instructions to avoid relapse and bacterial resistance.
- **Inform your doctor of any previous allergies:** if you have had adverse reactions to antibiotics in the past, let your doctor know so they can choose a safer alternative.
- **Do not pressure your doctor to prescribe antibiotics:** if your doctor thinks your infection doesn't require antibiotics, respect their judgment. Insisting on them when they're not needed promotes resistance and adverse effects.
- **Promote rational use of antibiotics in your environment:** Learn and share this information with family, friends, and neighbors. Health is a collective good, and awareness about proper antibiotic use benefits the entire community.

6. Bacterial resistance: a global issue

The resistance of bacteria to antibiotics has become a threat to global public health. Misuse of antibiotics increases the likelihood that germs will develop resistance, so challenging management of them. Infections that were once easy to treat, such as pneumonia or urinary tract infections, can become dangerous and require prolonged hospitalization.



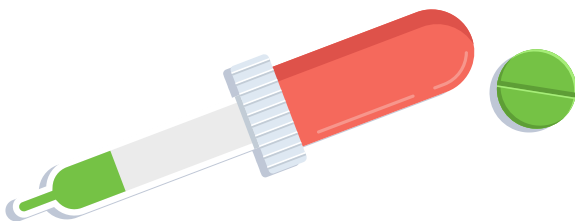
7. How can you help prevent resistance?

- Use antibiotics only when prescribed by a doctor.
- Complete the full treatment as instructed by your doctor.
- Never share antibiotics with others or use them for different symptoms than originally indicated.

Bacterial resistance is not just an individual issue—it is a community problem. Resistant bacteria can spread between people, leading to outbreaks that are more difficult to manage.

8. Special considerations: Vulnerable populations

Some groups—such as children, pregnant women, older adults, or people with weakened immune systems (low defenses)—may be more susceptible to adverse effects or require adjusted doses. Therefore, close medical supervision is important in these cases, with more frequent monitoring and careful selection of the safest antibiotic.



9. Conclusion and Recommendations

Antibiotics are valuable medications that have revolutionized human health, but their use requires responsibility. Things to keep in mind when you are going to take or are already taking antibiotics:

- Follow your doctor's instructions.
- Know the possible adverse effects of the antibiotic your doctor prescribed.
- Do not self-medicate or medicate others.
- Complete the full course of antibiotics as prescribed.
- Do not save leftover antibiotics for future use.

Recommended Reading

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