

# Safely Prescribing Cephalosporins for Patients with a Penicillin Allergy

In recent years, it has been common practice to limit the prescription of cephalosporins to patients with a reported penicillin allergy. This is due to the popular belief that cephalosporins and penicillin allergies are related. This link has led to the use of broad-spectrum antibiotics in these cases. The following information highlights how penicillin allergy can be misdiagnosed and what to do if a patient has a reported penicillin allergy.

Research shows that it is safe to prescribe third generation cephalosporins to penicillin-allergic patients if they have not had a severe reaction to cephalosporins.

## Five Facts to Know About Penicillin Allergy

1. Of all U.S. patients, 10% report having an allergy to penicillin class antibiotics.
2. Many of these patients may have had reactions to penicillin class antibiotics, but fewer than 1% of the population are allergic to penicillin class antibiotics.
3. Approximately 80% of all patients who do have a penicillin allergy lose their sensitivity after 10 years.
4. As an alternative to penicillin class antibiotics, patients are often prescribed broad-spectrum antibiotics. This can lead to more expensive medical bills, increased risk of antibiotic resistance, and poor antibiotic therapy.
5. Correctly identifying which patients truly have a penicillin allergy could help to decrease necessary use of broad-spectrum antibiotics (1).

## Evaluating Whether a Patient is Truly Allergic to Penicillin

Patients with a true penicillin allergy would have exhibited a Type 1 Reaction. It is important to ask questions that will provide useful information in determining whether your patient has a true penicillin allergy and did not just have an adverse reaction or was experiencing negative but expected symptoms.

### Characteristics of a Type 1 Reaction:

- Immediate reactions or reactions within the first hour
- Hives
- Angioedema
- Wheezing and shortness of breath
- Anaphylaxis

By correctly identifying if your patient is actually allergic to penicillin class antibiotics, you can reduce the risk of unnecessary use of broad spectrum antibiotics. Research has shown that the original estimation in the cross-reactivity of penicillin-related allergic reactions and cephalosporins-related reactions has been grossly overestimated (2).

Life threatening reactions to cephalosporins are **very rare**, at a rate of **.0001% to .1%**. However, patients who have a reported history of a Type 1 reactions to Penicillin do have a higher chance of allergic reaction (3).

## Prescribing Practices

Test dosing is a method for determining the potential severity of an allergic reaction, which involves administering a small dose of the intended drug that is less than what could cause a serious reaction. **However, the CDC does not recommend this as a common method. Only those who are trained in test dosing should perform this type of procedure.**

A patient who has any kind of allergic reaction to a cephalosporin should not receive it again.

## For More Information

Reference the 2015 CDC Guidelines for treating Gonorrhea at:

<https://www.cdc.gov/std/tg2015/gonorrhea.htm>

Relevant literature:

<https://www.ncbi.nlm.nih.gov/pubmed/16416451>

<https://www.nejm.org/doi/full/10.1056/NEJM200201313460520>

## SOURCES:

1. CDC. (2015). Management of persons who have a history of penicillin allergy. *CDC*. Retrieved from <https://www.cdc.gov/std/tg2015/pen-allergy.htm>
2. Pichichero. (2006). Cephalosporins can be prescribed safely for penicillin-allergic patients. *The Journal of Family Practice*. 55(2), 106-112. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/16451776>
3. Keller and Li. (2001). Cephalosporin allergy. *The New England Journal of Medicine*. Volume 345, No. 11. doi: 10.1056/NEJM200201313460520

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