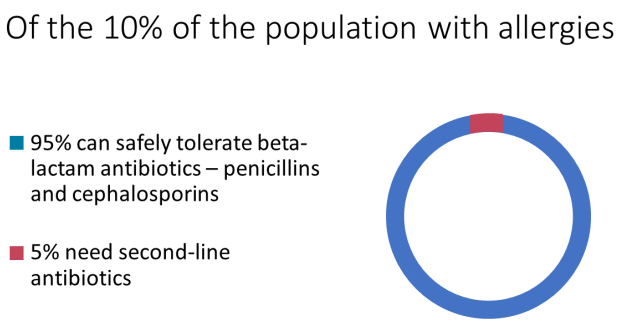
Penicillin Allergy

Importance of documenting an accurate allergy history

- About 10 percent of people in the United States report an allergy to penicillin, but at least 95 percent of them can safely tolerate beta-lactam antibiotics—penicillins and cephalosporins.[1]
- Inaccurate penicillin allergy documentation can lead to use of second-line antibiotics that may be less effective or more toxic. Use of second-line antibiotics has been associated with increased risk of *Clostridioides difficile* infection and treatment failure.[2-4]
- Obtaining a full and accurate allergy history allows (1) clarification of the type of allergic reaction, (2) assessment of whether the patient can receive penicillin or related antibiotics, and/or (3) determination of the need for referral to an allergist for further evaluation.



Questions to ask when obtaining an allergy history[4]

1. **Do you have any allergies to any antibiotics? Which antibiotics?**

2. **What was the reaction? How soon after taking the antibiotic did the reaction occur?**

Reaction	Documentation	Next Steps
Swelling of the throat, tongue, lips, or eyes; wheezing or trouble breathing; or low blood pressure.	Anaphylaxis	Do not rechallenge with beta-lactams without allergy consult.
Rash with raised, itchy bumps +/- white centers, appearing within approximately 6 hours after an antibiotic was started.	Hives	Do not rechallenge with beta-lactams without allergy consult.
Rash that was peeling or blistering.	Stevens-Johnson–like syndrome	Do not rechallenge with beta-lactams without allergy consult.
Rash that appeared at least 2 days after the antibiotic started.	Non-urticarial rash	Rechallenge unless rash was severe; if possible, use a different beta-lactam agent.
Side effects such as nausea, vomiting, diarrhea, headaches, dizziness, or fatigue.	Do not document allergy; remove allergy label	Rechallenge unless side effect was severe, in which case use a different beta-lactam agent.

3. **Have you taken the antibiotic since, or seen an allergist or had a penicillin skin test?**
   - If the patient has taken the same antibiotic since the initial reaction without a subsequent reaction, do not document an allergy.
   - If the patient has had a negative skin test for penicillin, the patient can be given a beta lactam. Note that the patient may still develop a non-urticarial rash if that was the original reaction.
   - Patients with past Stevens-Johnson syndrome, toxic epidermal necrolysis, or DRESS (drug rash with eosinphilia and systemic symptoms) should not be given the triggering antibiotic (or antibiotic class) again without a discussion with an allergist.[1]
   - If the patient has taken the same antibiotic since the initial reaction without a subsequent reaction, or has had an evaluation by an allergist who concluded that the patient no longer has an allergy, you can inform the patient that they no longer have the allergy. You can inform patients with a negative skin test for penicillin that they can be given beta lactam antibiotics.
   - Be sure to remove allergy labels in the electronic health record (delabeling) if the patient is deemed to not have the antibiotic allergy.

4. **Have you been able to take other antibiotics? Which ones?**
   - Review the medical record and ask about experiences with other beta-lactam antibiotics such as amoxicillin, amoxicillin-clavulanate (Augmentin), cephalexin (Keflex), cefadroxil (Duricef), cefuroxime (Ceftin, Zinacef), cefdinir (Omnicef), cefpodoxime (Vantin), cefixime (Suprax), ceftriaxone (Rocephin), or cefazolin (Ancef). Consider using both generic and brand names for antibiotics.*
   - If the patient has tolerated taking other beta-lactams previously, in most cases he/she can take them again. Document antibiotics he/she tolerated previously in the chart.

5. **How long ago did you have the reaction?**[4]
   - If the reaction occurred more than 10 years ago, the patient may no longer have an allergy because even true penicillin allergies can go away over time. Consider obtaining a consultation with an allergist for skin testing.[1]

**Note: Brand names may be registered trademarks and are named as examples and not for endorsement.*

References

1. Antibiotic prescribing and use: Evaluation and diagnosis of penicillin allergy for healthcare professionals. Centers for Disease Control and Prevention. October 2017. https://www.cdc.gov/antibiotic-use/community/for-hcp/Penicillin-Allergy.html. Accessed Dec 21, 2021.

2. McFadden DR, LaDelfa A, Leen J, et al. Impact of reported beta-lactam allergy on inpatient outcomes: a multicenter prospective cohort study. Clin Infect Dis. 2016 Oct 1;63(7):904-10. PMID: 27402820.

3. Blumenthal KG, Ryan EE, Li Y, et al. The impact of a reported penicillin allergy on surgical site infection risk. Clin Infect Dis. 2018 Jan 18;66(3):329-36. PMID: 29361015.

4. Blumenthal KG, Peter JG, Trubiano JA, et al. Antibiotic allergy. Lancet. 2019 Jan 12;393(10167):183-98. PMID: 30558872.

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