

# HAMILTON ALLERGY, ASTHMA & SINUS CENTER

Aslam Lateef, M.D., F.A.C.A.A.I., Board Certified in Allergy/Immunology  
Pediatric and Adult Allergy, Clinical Immunology and Associated Pulmonary Diseases

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## Most patients who report allergies to penicillin are not allergic.

Penicillin is one of the most commonly used antibiotics. Penicillin antibiotics are a large group of chemically related drugs that can be given by mouth or injection to treat many bacterial infections and are part of the group of drugs called beta-lactam antibiotics.

About 1 in 10 patients has a penicillin allergy noted in their medical record. Many such allergies are diagnosed in childhood, often because of a rash that may have been caused by a virus, not an allergy. Even among patients with true penicillin allergy, 8 in 10 are no longer allergic within a 10-year period. Most people in the United States with a penicillin allergy in their medical record are able to tolerate penicillin and related beta-lactam antibiotics after undergoing evaluation.

Penicillins and other beta-lactam antibiotics are some of the safest and most effective antibiotics for many infections, and therefore it is important to find out if you are really allergic to penicillin. Having an unverified penicillin allergy may result in other antibiotics being used to prevent and treat infections, which may result in an increased risk of the following:

- Treatment failures for some infections that are best treated with penicillin (or related beta-lactam) antibiotics
- Health care-associated bacterial infections, such as *Clostridium difficile* (also known as *Clostridioides difficile*) infection and surgical site infections
- Adverse events from other antibiotics that may have more side effects

Penicillin allergy can be evaluated by first obtaining a careful history related to the symptoms of the reaction. Allergy testing procedures may be used, such as the penicillin skin test for patients with a reaction history such as hives, rash, swelling, or shortness of breath. An initial skin prick test is done by pricking the skin with a small amount of each form of penicillin reagent. A second test is an intradermal test, given when the skin prick test is negative. This test uses a small needle to place the reagent right underneath the skin. After each test, the test area is examined after 15 to 20 minutes. The intradermal test may sometimes be repeated. If these tests are negative, it is unlikely that a patient is allergic to penicillin. To confirm, an oral dose of a penicillin drug is then given under clinician observation.

If the symptoms of reaction are low risk, such as headache, nausea, vomiting, itching, or family history of allergy, skin tests may not be done before penicillin is given. In some patients, the first dose may be given under observation. If 1 full dose of penicillin is tolerated, there is no risk of a serious immediate reaction to a penicillin antibiotic, so penicillin can be used in future treatment.

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However, an allergic reaction to any drug can occur at any time, and this test does not detect all forms of allergic reactions and does not detect intolerances to or side effects of penicillin.

**\*If you have a history of an allergic reaction to penicillin, ask us about how you can be evaluated.**

### Penicillin Allergy Skin Testing

is a procedure recommended for some patients with a history of allergic reaction such as itching, hives, rash, swelling, or shortness of breath.

- ▶ After the skin is marked, small plastic “forks” prick the skin with small amounts of one or more penicillin allergy reagent.
- ▶ If there is no reaction, then small needles are used to place the same penicillin allergy reagents underneath the skin.
- ▶ There is no bleeding or feeling more than mild, momentary discomfort.



In less than 1 hour, the skin testing is complete.

**Negative reaction:** No reaction at the penicillin testing sites. You will be given amoxicillin by mouth and observed to confirm you are not allergic to penicillin drugs.

**Positive reaction:** Itching, redness, and hives at any penicillin testing site confirms you are allergic to penicillin. These reactions usually resolve in under 1 hour.



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**Is patient interested in evaluation of their penicillin allergy? IF yes, then complete below:**

Patient Name: \_\_\_\_\_ Today's date: \_\_\_\_\_

\* DO YOUR BEST, if not sure about an answer, then make your best guess (if no idea, then state this).

1. How long ago was the reaction? What exact penicillin medicine was it (name and dose)?

\_\_\_\_\_

2. What condition was being treated? \_\_\_\_\_

3. Aside from penicillin, list all other antibiotics patient is allergic to and avoids?

\_\_\_\_\_  
\_\_\_\_\_

4. What antibiotics has the patient taken, tolerated and can take again in future?

\_\_\_\_\_  
\_\_\_\_\_

5. Describe the penicillin reaction. List symptoms (i.e. - rash, fever, pains, stomach upset, diarrhea, headaches, hallucinations, etc).

\_\_\_\_\_  
\_\_\_\_\_

6. If reaction involved skin, please describe it in detail. (i.e. - itchy, red, bumpy, swelling, scaling, painful, rough, etc. What body parts were affected? Did skin flake off later?, etc)

\_\_\_\_\_  
\_\_\_\_\_

7. Was this patient's 1<sup>st</sup> time EVER taking penicillin? Yes / No  
If NO, how many times had patient taken penicillin before (best estimate)?

\_\_\_\_\_

8. Did reaction start after the very first dose of this course? Yes / No

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9. If NO, then AFTER how many doses was reaction noticed? \_\_\_\_\_

After how many days of taking antibiotic did reaction start? \_\_\_\_\_

10. How many minutes or hours after taking last dose did the reaction start?

\_\_ immediately after a dose OR AFTER: \_\_\_\_\_ minutes \_\_\_\_\_ hours (make best guess)

11. How much time passed from the start of symptoms to when they became the worst? (i.e. - How long did it take for symptoms to go from starting to peaking?)

\_\_\_\_\_ minutes \_\_\_\_\_ hours \_\_\_\_\_ days

12. After peaking, how long did symptoms stay the same before they started to get better?

\_\_\_\_\_ minutes \_\_\_\_\_ hours \_\_\_\_\_ days

13. How long until symptoms fully resolved and patient was back to normal?

\_\_\_\_\_ minutes \_\_\_\_\_ hours \_\_\_\_\_ days

14. Was patient seen urgently or did they go right away to a hospital or ED? Yes / No

15. Was ANY treatment given for the reaction? Yes / No (if No, then skip to 19)

16. Was epinephrine used to treat this reaction? Yes / No

17. What treatments were given for the reaction symptoms?

\_\_\_\_\_

18. Did treatments for reaction help? Yes / No / Unsure

19. Did patient have any of the following symptoms? (if yes, then circle specific items): NONE

*Painful eyes vision changes lesions in mouth fever belly pain nausea vomiting diarrhea*

*Shortness of breath extreme panic/fear skin blisters skin flaking off headache neuro changes*

20. Anything else that is important for us to know about this issue?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_