



Evaluating an Existing Penicillin Allergy



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When your child needs a hospital, everything matters.

The Importance of Allergy Clarification

Penicillin is the most commonly reported drug allergy, but most patients who report a penicillin allergy can tolerate penicillin. **10% of patients will report a penicillin allergy when seeking medical care, but only 1% of patients have an IgE mediated penicillin allergy that puts them at risk for anaphylaxis.**¹

Even patients who have had reactions consistent with an IgE mediated allergy to penicillin can tolerate penicillin in the future as IgE levels wane over time.²

Reasons why a patient may have a penicillin allergy listed on their chart

Immediate Drug Reactions

Patient has a history of rapid onset symptoms following the first or second dose of an antibiotic course involving hives, itching, swelling, vomiting, difficulty breathing, or fainting.

Delayed reactions

About 5-10% of patients who are given amoxicillin or ampicillin will develop a delayed maculopapular rash.³ It is thought that underlying viral illness is necessary for the development of this rash, EBV is a known trigger. About 94-97% of pediatric patients with history of isolated delayed rash can tolerate penicillin in future even if the reaction was recent.^{4, 5} Much less commonly, a patient will have a history of more serious delayed reaction including SJS/TEN, DRESS, hemolytic anemia, or serum sickness.

Parental Concern

With 10% of the patient population reporting a history of penicillin reaction, lots of children are labeled as penicillin allergic due to a family history. Having a family history of penicillin reaction does not increase your risk of reaction.

Medication Side Effects

Patients will often have diarrhea or stomach pain with beta-lactam antibiotics and misinterpret these symptoms with allergic reaction.

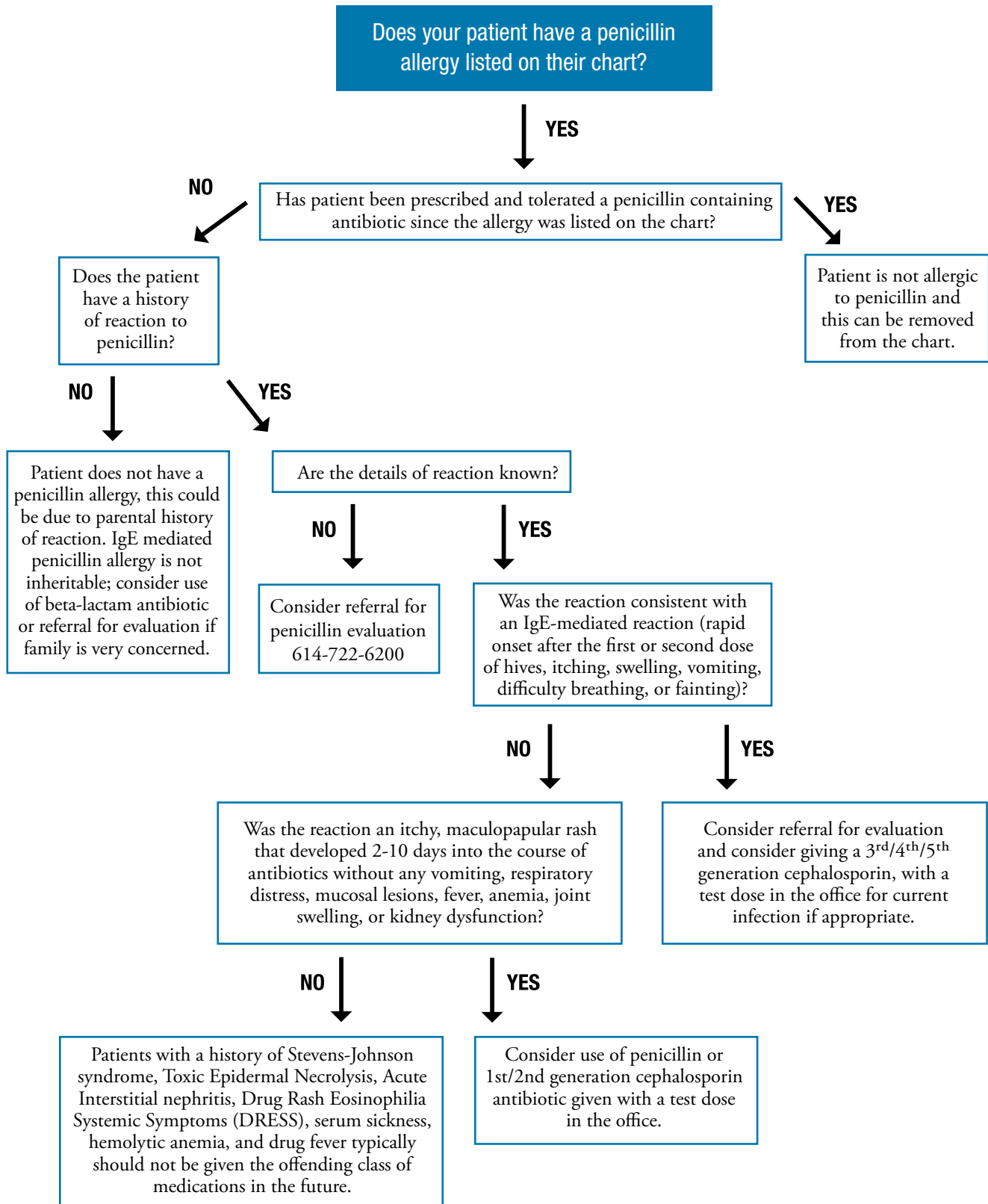
Why it is so important to clarify the allergy

Studies have shown that patients who have a beta-lactam allergy listed on their chart are more likely to have a treatment failure and adverse events due to being treated with a non-beta-lactam antibiotic for an infection where a beta-lactam is the first line recommendation.^{6, 7} These patients are also at increased risk of infection with a resistant organism or *Clostridium difficile*.⁸

It is important to communicate to patients and families that may be hesitant to pursue evaluation or challenge that avoiding beta-lactam antibiotics is not a benign choice for them or their children.

For more information on a penicillin allergy evaluation, visit [NationwideChildrens.org/Allergy-Immunology](https://www.nationwidechildrens.org/allergy-immunology)

Penicillin Allergy Evaluation



Citations

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4. Mill C, Primeau MN, Medoff E, et al. Assessing the diagnostic properties of a graded oral provocation challenge for the diagnosis of immediate and nonimmediate reactions to amoxicillin in children. *JAMA Pediatr.* 2016;170(6)
5. Vyles D, Adams J, Chiu A, Simpson P, Nimmer M, Brousseau DC. Allergy testing in children with low-risk penicillin allergy symptoms. *Pediatrics.* 2017;140(2):
6. Jeffres MN, Narayanan PP, Shuster JE, Schramm GE. Consequences of avoiding beta-lactams in patients with beta-lactam allergies. *J Allergy Clin Immunol* 2016;137:1148-53.
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8. Macy E, Conteras R. Health care use and serious infection prevalence associated with penicillin “allergy” in hospitalized patients: a cohort study. *J Allergy Clin Immunol* 2014; 133:790-6.

Referrals and Consultations

Online: [NationwideChildrens.org/GI](https://www.NationwideChildrens.org/GI)

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