

Beta-lactam Allergy Risk Assessment for the Outpatient Non-Allergist Prescriber

NM ADSP and the NMH Division of Allergy and Immunology have designed this beta-lactam allergy risk assessment primarily for outpatient non-allergist prescribers to help choose optimal antibiotics for patients with allergy history to a single beta-lactam class (penicillin or cephalosporin). For common outpatient infections, see **Outpatient Infection Treatment Guidance** in which ADSP has already selected and color-coded (**green**, **yellow**, and **red**) optimal antibiotic choices aligned with this risk assessment.

- Beta-lactams (penicillins and cephalosporins) remain the preferred agents for many of the most common bacterial infections.
- True beta-lactam allergies are rare. Carrying a label of beta-lactam allergy results in treatment with second-line antibiotics that have been associated with treatment failure, higher *C. difficile* infection rates, and increased costs.
- Many outpatient settings are not designed to accommodate confirming a complete allergy history or observing a patient after a first antibiotic dose. Consequently, this risk assessment is more conservative than the most recently published allergy practice guidelines¹.
- Clinicians are urged to perform a complete allergy assessment when time allows, to maintain an updated allergy history in the electronic medical record, and to clarify any changes with the patient. Guidance for a more complete assessment is available at **NM Allergy Considerations**.
- A full evaluation by an allergist or prior known recent history of tolerance to an antibiotic may reassure a prescriber that the allergy history can be disregarded or modified.

Beta-Lactam Allergy Risk Assessment	
Low Risk	<ul style="list-style-type: none"> ○ Family history only, no personal reaction history ○ Headache ○ Isolated gastrointestinal symptoms: Diarrhea, Bloating <p style="text-align: right;">Remove Allergy Label</p>
Moderate Risk	<ul style="list-style-type: none"> ○ Minor/mild rash, without mucus membrane involvement* ○ Urticarial rash (hives/transient wheals lasting < 24 hours) occurring > 10 years ago with all symptoms limited to the skin (no mucosal involvement*) ○ Urticarial rash (hives/transient wheals lasting < 24 hours) between 1 to 10 years ago with all symptoms limited to the skin (no mucosal involvement*) ○ Unknown reaction > 10 years ago ○ Unknown reaction < 10 years ago with no knowledge of requiring medical treatment
High Risk	<ul style="list-style-type: none"> ○ Anaphylaxis ○ Angioedema or laryngeal edema ○ Hypotension ○ Syncope ○ Wheezing ○ Shortness of breath ○ Mucocutaneous rash* ○ Blistering rash ○ Stevens Johnson Syndrome (SJS)/ Toxic Epidermal Necrolysis (TEN) ○ Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS) ○ Acute Generalized Exanthematous Pustulosis (AGEP) ○ Allergy to both penicillin and cephalosporins ○ Hemolytic anemia ○ Nephritis ○ Serum sickness ○ Drug fevers ○ Drug Induced Liver Injury (DILI)/Hepatitis <p><i>If unknown reaction occurred < 10 years ago & required medical treatment, consider referral to NM Allergy Clinic/ Consultation.</i></p>

Foster, Watts. NM Allergy & Immunology, 2023.

*mucosal membrane = involving eyes, mouth, nose, genitourinary

Instructions: Perform risk assessment above. Appropriate color-coded antibiotic selections according to this risk assessment have already been made for common outpatient infections in Outpatient Infection Treatment Guidance documents. If allergy history shows the patient has tolerated an antibiotic without an allergic reaction in the recent past, in most instances, clinicians may disregard the risk assessment and administer the agent.

Low Risk	<ul style="list-style-type: none"> • For those with allergy history in a family member only (without personal reaction history) or headache or isolated gastrointestinal symptoms, prescribers may select the standard beta-lactam agent; an allergic reaction is extremely unlikely. Remove allergy label in the electronic medical record. • Otherwise, patients with low-risk <u>penicillin allergy history</u> may receive <u>any cephalosporin</u>. • Otherwise, patients with low-risk <u>cephalosporin allergy history</u> may receive <u>any penicillin</u>.
Moderate Risk	<ul style="list-style-type: none"> • For additional antibiotics, NM Allergy Considerations has an updated beta-lactam cross-reactivity chart. • For patients with moderate-risk <u>penicillin allergy history</u>, clinicians may prescribe a <u>cephalosporin with dissimilar side chain</u>. • For patients with moderate-risk <u>cephalosporin allergy history</u>, clinicians may prescribe a <u>penicillin with a dissimilar side chain</u>.
High Risk	<ul style="list-style-type: none"> • For patients with high-risk <u>penicillin allergy history</u>, clinicians should prescribe a <u>non-beta-lactam</u>. • For patients with high-risk <u>cephalosporin allergy history</u>, clinicians should prescribe a <u>non-beta-lactam</u>.

Reference: ¹Khan DA, et al. Drug allergy: A 2022 practice parameter update. J Allergy Clin Immunol. 2022 Dec;150(6):1333-1393. doi: 10.1016/j.jaci.2022.08.028. Epub 2022 Sep 17. PMID: 36122788.