

Penicillin Allergy Testing

Why It Matters for Your Adult Patients

The Problem

- Approximately 10% of adults report penicillin allergies, but **less than 5% are truly allergic**¹
- **Over 95% of patients labeled as "penicillin allergic" can safely tolerate penicillin antibiotics**^{2,3}
- Most adult penicillin allergy labels were **acquired in childhood**—often representing viral rashes, not true allergies⁴
- Penicillin allergies fade over time—**80% of patients lose sensitivity after 10 years**^{1,5}
- These labels persist for decades, creating **lifelong health consequences**⁴

Impact on Common Infections You Treat Every Day

Penicillin allergy labels force you to use second-line antibiotics that lead to worse outcomes for your patients.

Community-Acquired Pneumonia

- Amoxicillin is **first-line treatment** for otherwise healthy adults per ATS/IDSA guidelines^{6,7}
- Amoxicillin-clavulanate is recommended for patients with comorbidities^{6,7}
- Fluoroquinolone alternatives carry higher risk of adverse events¹

Acute Bacterial Sinusitis

- Amoxicillin-clavulanate is **first-line treatment** for adults⁸
- Alternative antibiotics like doxycycline are less effective against common pathogens⁸

Streptococcal Pharyngitis

- Penicillin V or amoxicillin are **first-line treatments** to prevent acute rheumatic fever⁸
- No proven alternatives exist for preventing rheumatic heart disease⁸

Syphilis

- Penicillin is the **only recommended treatment** for all stages of syphilis⁹
- **No proven alternatives exist** for neurosyphilis or syphilis in pregnancy⁹
- Penicillin allergy labels significantly complicate STI management⁹

Staphylococcus aureus Bacteremia

- Beta-lactams are **superior to vancomycin** for methicillin-susceptible *S. aureus* infections^{1,4}
- Up to 25% of *S. aureus* strains sensitive to methicillin are also sensitive to penicillin¹
- Decision-analysis models project **inferior outcomes** when patients receive vancomycin instead of having their penicillin allergy evaluated⁴

Consequences of Using Alternative Antibiotics

When patients with unverified penicillin allergies receive alternative antibiotics, they face: ^{1,4}

- **23-26% increased risk of C. difficile infection**
- **Increased antimicrobial resistance** (MRSA, VRE)
- **Higher mortality rates**—particularly at or after 180 days
- **50% higher surgical site infection rates** with non-beta-lactam prophylaxis
- **Longer hospital stays and higher healthcare costs** (estimated \$1,915 more per patient per year)
- **More adverse drug events** from vancomycin, clindamycin, and fluoroquinolones

Benefits of Penicillin Allergy Testing

- Enables use of **first-line, most effective antibiotics** for common infections
- Reduces treatment failures and need for second-line antibiotics
- Decreases C. difficile infections and antimicrobial resistance
- Improves surgical prophylaxis options (cefazolin is first-line for most procedures)
- Enables optimal treatment for syphilis and other STIs
- Reduces healthcare costs and adverse drug events
- **Over 95% of tested patients can be safely "de-labeled"**^{2,3,4}

References

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3. [A Closer Look at Penicillin Allergy History: Systematic Review and Meta-Analysis of Tolerance to Drug Challenge](#). DesBiens M, Scalia P, Ravikumar S, et al. The American Journal of Medicine. 2020;133(4):452-462.e4. doi:10.1016/j.amjmed.2019.09.017.
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6. [Community-Acquired Pneumonia](#). File TM, Ramirez JA. The New England Journal of Medicine. 2023;389(7):632-641. doi:10.1056/NEJMcp2303286.
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8. [Antibiotic Use in Acute Upper Respiratory Tract Infections](#). Sur DKC, Plesa ML. American Family Physician. 2022;106(6):628-636.
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BOULDER MEDICAL CENTER

PENICILLIN ALLERGY CLINIC

Help us give your adult patients access to optimal GBS prophylaxis and first-line antibiotic therapy.

WHEN: Mornings on 2ND Friday of each month

WHERE : BMC Louisville, 80 Health Park Drive

APPOINTMENTS: Call (303) 440-3083

WHO TO REFER

- Patients with penicillin allergy labels acquired in childhood or more than 10 years ago
- Patients with remote reactions or unknown reaction details
- Patients with low-risk histories (isolated GI symptoms, family history only, pruritus without rash)
- Patients requiring frequent antibiotic therapy for chronic conditions (COPD, recurrent UTIs, chronic sinusitis)
- Patients scheduled for surgery who would benefit from optimal cefazolin prophylaxis
- Patients with syphilis or other STIs requiring penicillin therapy
- Any patient where first-line penicillin therapy would be beneficial

2ND FRIDAY
**EACH
MONTH**
IN A.M.

BMC LOUISVILLE

80 HEALTH PARK DR.
SUITE 200, LOUISVILLE
(303) 440-3083

Safe, Evidence-Based Testing

We use validated protocols proven safe in adults:

- Direct oral amoxicillin challenge for low-risk patients (most children)
- Graded dosing with appropriate observation periods
- Skin testing available for higher-risk histories when indicated
- Reactions only occur in 2.2% of adults. Severe reactions are exceedingly rare (anaphylaxis 0.1%)
- Testing can be performed safely in outpatient settings

Success Rates

Published studies demonstrate:

- 94-98% of adults can be successfully delabeled
- Direct oral challenge is safe and effective without prior skin testing in low-risk patients
- Most delabeled patients tolerate subsequent penicillin courses without problems
- Delabeling leads to increased use of guideline-concordant antibiotics

Clinic capacity can expand based on demand.



Boulder Medical Center