

Penicillin Allergy Testing

Why It Matters for Your Orthopedic Patients

The Problem

- Approximately 10% of patients report penicillin allergies, but **less than 5% are truly allergic**¹
- Over 90% of patients labeled as "penicillin allergic" can safely tolerate penicillin and cephalosporin antibiotics¹
- Penicillin allergies often fade over time—80% of patients lose sensitivity after 10 years¹

Cefazolin: The Gold Standard for Orthopedic Prophylaxis

Cefazolin is the **recommended first-line antibiotic** for surgical prophylaxis in all orthopedic procedures, including total joint arthroplasty, fracture fixation, and spine surgery.^{2,3} It provides optimal coverage against the most common pathogens (Staphylococcus and Streptococcus species) with excellent tissue penetration and minimal toxicity.⁴

Risks of Alternative Antibiotics in Orthopedic Surgery

When patients with unverified penicillin allergies receive alternative antibiotics (vancomycin or clindamycin), they face:

- **50% increased odds of surgical site infections** compared to patients receiving cefazolin⁵
- **Higher risk of periprosthetic joint infection** in hip, knee, and shoulder arthroplasty²
- **Increased C. difficile infection risk:** 23-26% higher incidence with alternative antibiotics⁵
- **Timing challenges with vancomycin:** Requires 1-2 hour infusion, making it difficult to achieve adequate tissue levels at incision¹
- **Less effective prophylaxis:** Clindamycin and vancomycin are considered less effective than cefazolin for preventing orthopedic infections^{1,2}

The Evidence on Cefazolin Safety

Recent studies demonstrate that **cefazolin is safe even in patients with documented penicillin anaphylaxis:**

- Among 214 patients with documented penicillin anaphylaxis who received cefazolin for total joint arthroplasty, only 1 experienced any reaction (not statistically significant)⁶
- Hypersensitivity reactions to cefazolin are no more common than reactions to vancomycin or clindamycin in penicillin-allergic patients⁷
- Cross-reactivity between penicillin and cefazolin is extremely low (1-3%)⁸

Benefits of Penicillin Allergy Testing

- Enables use of first-line cefazolin prophylaxis for optimal infection prevention
- Reduces surgical site infection and periprosthetic joint infection risk
- Eliminates timing challenges associated with vancomycin infusion
- Decreases risk of C. difficile and other antibiotic-related complications
- Improves antibiotic stewardship and patient safety
- Better long-term outcomes for your surgical patients^{9,10}

References

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8. [Drug Allergy: A 2022 Practice Parameter Update](#). Khan DA, Banerji A, Blumenthal KG, et al. The Journal of Allergy and Clinical Immunology. 2022;150(6):1333-1393. doi:10.1016/j.jaci.2022.08.028.
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10. [Non-β-Lactam Antibiotic Use, β-Lactam Allergy, and Surgical Site Infections](#). Agarwal P, Kumar RP, Oleksiuk LM, et al. JAMA Surgery. 2025;160(11):1260-1267. doi:10.1001/jamasurg.2025.3789.

BOULDER MEDICAL CENTER

PENICILLIN ALLERGY CLINIC

Help us give your orthopedic 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 scheduled for elective orthopedic surgery (arthroplasty, spine, fracture fixation)
- Patients with reported penicillin allergies who would benefit from cefazolin prophylaxis
- Patients with penicillin allergy labels acquired in childhood or at least 10 years ago
- Any patient where optimal surgical prophylaxis is critical to prevent devastating infection

Benefits of Penicillin Allergy Testing

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- Eliminates timing challenges associated with vancomycin infusion
- Decreases risk of C. difficile and other antibiotic-related complications
- Better long-term outcomes for your surgical patients

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

BMC LOUISVILLE

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

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Safe, Evidence-Based Testing

Safe, evidence-based evaluation including detailed history, risk stratification, and when appropriate, direct oral challenge or skin testing. Over 95% of patients can be safely "de-labeled" and cleared to use penicillin antibiotics

Clinic capacity can expand based on demand.



Boulder Medical Center