



# Does My Patient Have a Penicillin (PCN) Allergy?

Developed by The Johns Hopkins Hospital Department of Antimicrobial Stewardship



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Have you ever had a reaction to PCN or PCN derivatives (e.g., amoxicillin, ampicillin, amoxicillin-clavulanate)?

YES

Did the reaction involve at least two of the following within 24 hours of first dose of antibiotic?

- Face swelling (throat, tongue, lips, eyes bilaterally)
- Wheezing and/or severe difficulty breathing
- Urticaria (hives)\*: Raised itchy bumps (red or skin-colored); the center of a red hive turns white upon pressure
- Low blood pressure

YES

NO/UNKNOWN

Did you have a PCN skin test or a PCN/amoxicillin challenge, and were you told you were no longer allergic?

YES

NO

Remove/  
do not enter  
PCN allergy  
or  
communicate  
with  
prescriber

Document  
patient reports  
anaphylaxis, not  
confirmed (if  
applicable),  
communicate to  
prescriber

Does not recall  
the reaction

Other reactions

Rash described as peeling/blistering AND associated with inflammation/blistering in the mouth, eyes or genitals\*

YES

Document Stevens-Johnson-like syndrome

Isolated nausea, vomiting, diarrhea, headaches, dizziness or fatigue

YES

Remove/do not enter PCN allergy or communicate with prescriber

Maculopapular rash that appeared ≥ 2 days after antibiotic administration\*

YES

Document non-urticarial rash

Reaction was a non-urticarial rash\*, document non-urticarial rash

Have you taken amoxicillin or amoxicillin-clavulanate (augmentin)? If patient unsure, search in EMR for prior treatment.

YES

No reaction occurred, remove/do not enter allergy or communicate with prescriber

NO

Reaction was hives\*, document hives

Have you taken cephalexin (keflex), cefuroxime (ceftin), or cefazolin? If patient unsure, search in EMR for prior treatment.

YES

No reaction occurred, document historical reaction to PCN, patient able to take cephalosporins, and document any cephalosporins given

NO

Request Allergy & Immunology Consult if antibiotic needed

\* See behind for examples of skin reactions

## **β-lactams (most common)**

### **PENICILLINS**

#### **Oral:**

1. Dicloxacillin
2. Penicillin

#### **Intravenous:**

3. Nafcillin
4. Oxacillin
5. Penicillin
6. Piperacillin-tazobactam

### **AMINOPENICILLINS**

#### **Oral:**

1. Amoxicillin
2. Amoxicillin-clavulanate

#### **Intravenous:**

3. Ampicillin
4. Ampicillin-sulbactam

### **CEPHALOSPORINS**

#### **Oral:**

1. Cefaclor
2. Cefadroxil
3. Cefdinir
4. Cefpodoxime
5. Cephalexin

#### **Intravenous:**

6. Cefazolin
7. Cefepime
8. Cefotaxime
9. Cefotetan
10. Cefoxitin
11. Ceftaroline
12. Ceftazidime, Ceftaz-avibactam
13. Ceftolozane-tazobactam
14. Ceftriaxone

### **CARBAPENEMS**

#### **Intravenous:**

1. Ertapenem
2. Imipenem
3. Meropenem

## **MOST COMMON SEVERE REACTIONS INVOLVING THE SKIN\***

### **Anaphylaxis**



- Bilateral facial swelling
- Wheezing and/or severe difficulty breathing
- Hives
- Occurs within 6 hours of antibiotic administration

### **Exfoliative dermatitis**



- Skin peeling or blistering with mucosal (eyes, mouth, genital) involvement
- Develops after several days of antibiotics
- Examples: Stevens-Johnson syndrome, TEN
- Requires hospitalization

### **Urticaria (hives)**



- Itchy, red bumps with white centers (look like new mosquito bites)
- Appears within 6 hours of antibiotic administration
- Bumps disappear after a few hours and new ones may appear

### **Erythema multiforme**



- Rings containing a “bull’s-eye”
- Appears after 2—3 days of antibiotic administration

### **Drug rash eosinophilia and systemic symptoms (DRESS syndrome)**

- Fever, rash
- Eosinophilia, liver or kidney involvement
- Occurs 2—6 weeks after exposure

## **NON-SEVERE SKIN REACTION**

### **Non-urticarial maculopapular rash**



- Tiny red dots covering a large area of the body, may feel rough to the touch
- Appears after 2—3 days of antibiotic administration
- Can be treated through, does not contraindicate future antibiotic use
- May not recur with future drug administration

\*The patient might report other less common skin reactions. Please document as much detail as possible.