UNIVERSITY OF IOWA HEALTH CARE

Updates on Antibiotic Drug Allergy

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November 30, 2023

CHANGING MEDICINE.
CHANGING LIVES.®

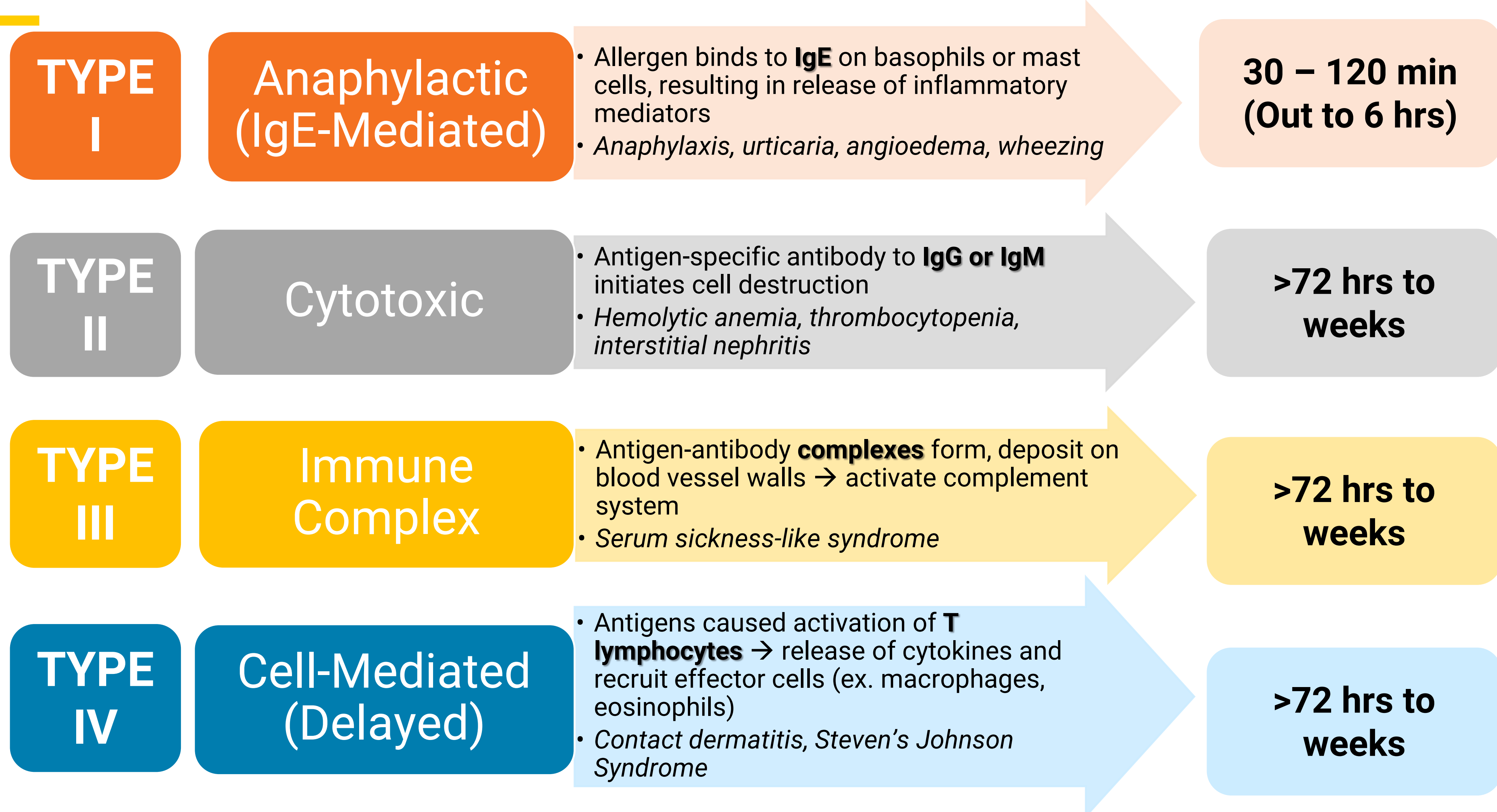
Disclosures

- Dr. Amy Dowden has no relevant financial relationships with ineligible companies to disclose.
- Dr. Deanna McDanel has no relevant financial relationships with ineligible companies to disclose.

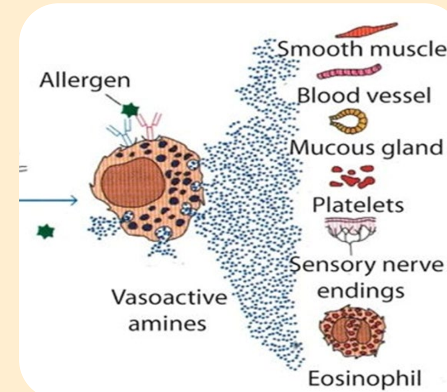
Learning Objectives

1. Review key updates on antibiotic drug allergies from the 2022 Drug Allergy Practice Parameter Update and how to incorporate these into practice.
2. Discuss the cross-reactivity of cephalosporins in penicillin allergic patients.
3. Review the appropriate management of antibiotic allergies and understand best practices for de-labeling penicillin allergies.
4. Take away practical applications to optimizing treatment in patients with antibiotic drug allergies.

Types of Drug Allergy



Drug Allergy - Pathophysiology



Immunologic response to a ***pharmaceutical agent*** and/or excipient

Previously sensitized individual is re-exposed to an allergen

Classically defined as an **IgE-mediated** reaction

Release of vasoactive mediators from tissue mast cells and peripheral basophils

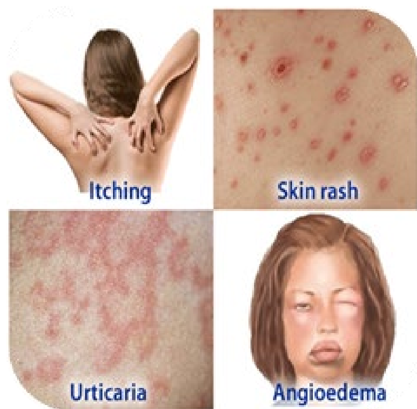
IgE-Mediated Drug Allergies

YES

IMMEDIATE ONSET
hives/rash, pruritus, difficulty breathing, angioedema, low blood pressure, and/or anaphylaxis

NO

Drug INTOLERANCE or undesirable side effects



30-120*
MINUTES
Immediate Onset
**6 hours may be possible*

Drug Allergy Assessment

Clinical History:

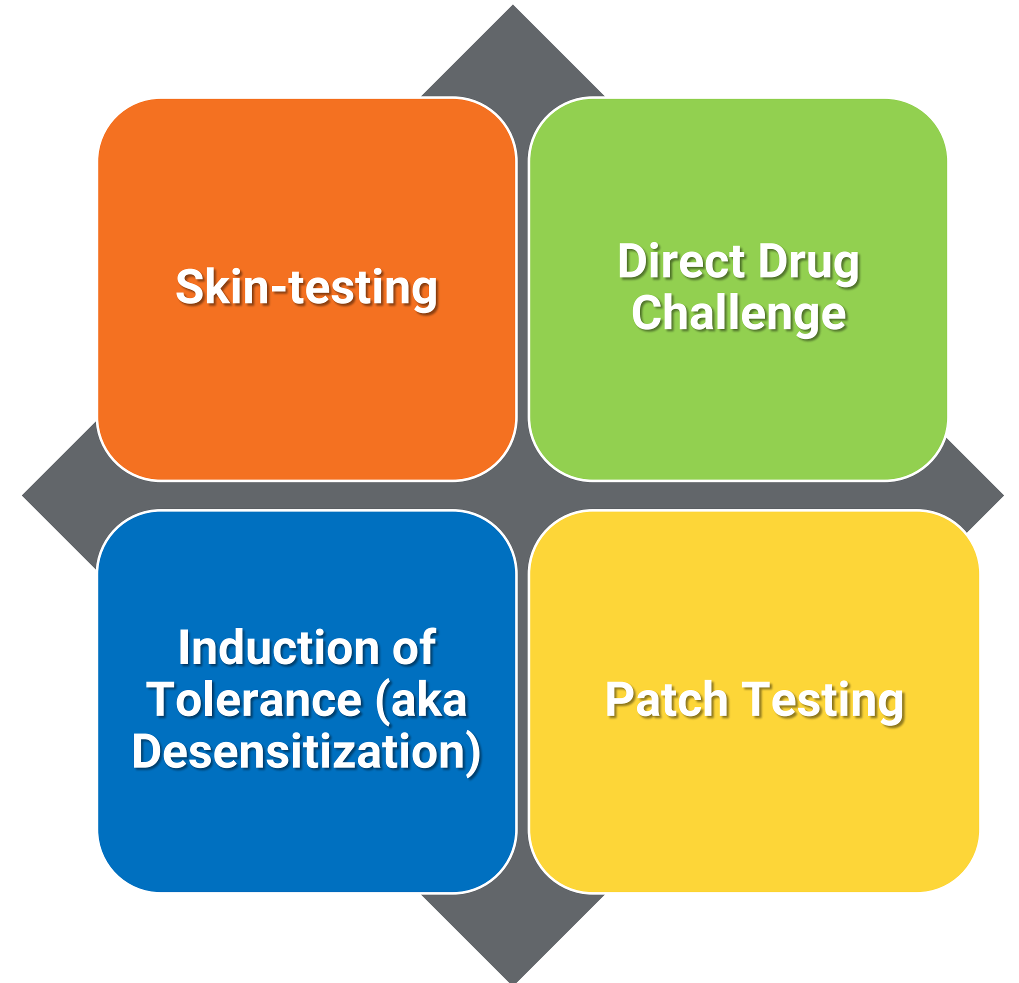
- **A thorough history is important!**
- Obtaining a careful history and reviewing all available medical records is very important

Diagnosis:

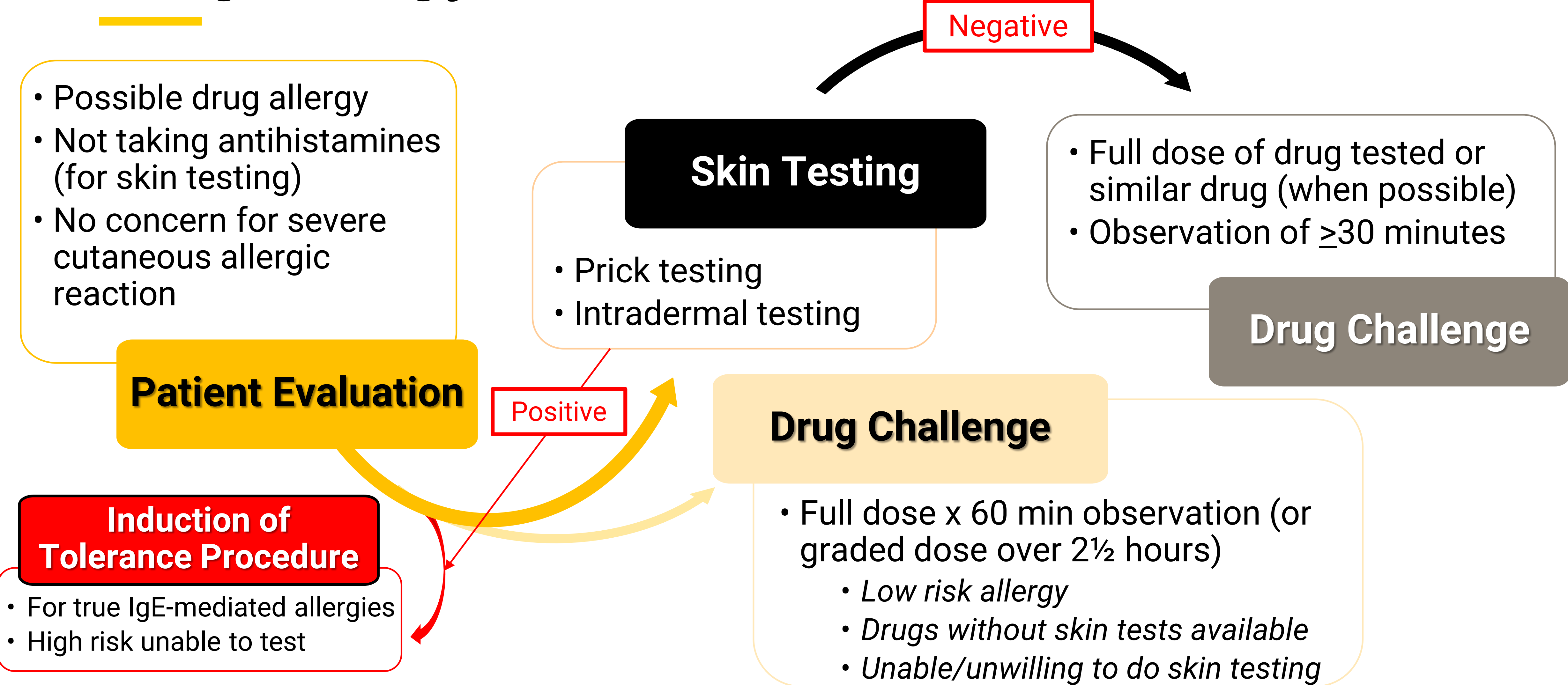
- Based upon clinical history, the patient's records, physical exam findings
- Clinical tests to support adverse drug reactions (skin testing)
- Testing for all drugs is not standardized but referral to an Allergy Specialist may be indicated

Drug Allergy Testing

- Identifying *true causative agent* is needed for appropriate drug avoidance
- *Allergy testing* may help provide a definitive cause of an adverse drug reaction and clarify vague patient histories
- *Drug allergy evaluations* by allergy specialists can be very helpful



Drug Allergy Evaluation



Drug Allergy: 2022 Practice Parameter Update

- Overall **de-emphasis on the use of skin testing** as compared with drug challenge
  - *Particularly in patients with non-anaphylactic, non-severe cutaneous drug allergy histories*
- More **emphasis on risk stratification** based on reaction phenotype
- Role for **shared decision making** in diagnostic testing and management

An Important Message

Drug Allergy: A 2022 Practice Parameter Update
Now Available Online

Practice parameter

Drug allergy: A 2022 practice parameter update

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Khan DA, et al. Drug Allergy: A 2022 Practice Parameter Update. Journal of Allergy and Clinical Immunology. 2022;150(6):1333-93.

- Penicillins
- Cephalosporins
- Carbapenems
- Monobactams
- Sulfonamides
- Fluoroquinolones
- Macrolides

Penicillin Allergies

Penicillin Allergy Label

A **penicillin-allergy label** is usually acquired in childhood

Personal Health Implications

- Fewer efficacious antibiotic choices
- More toxic effects associated with alternative antibiotics
- Use of broad-spectrum antibiotics
- More postoperative surgical-site infections

Public Health Implications

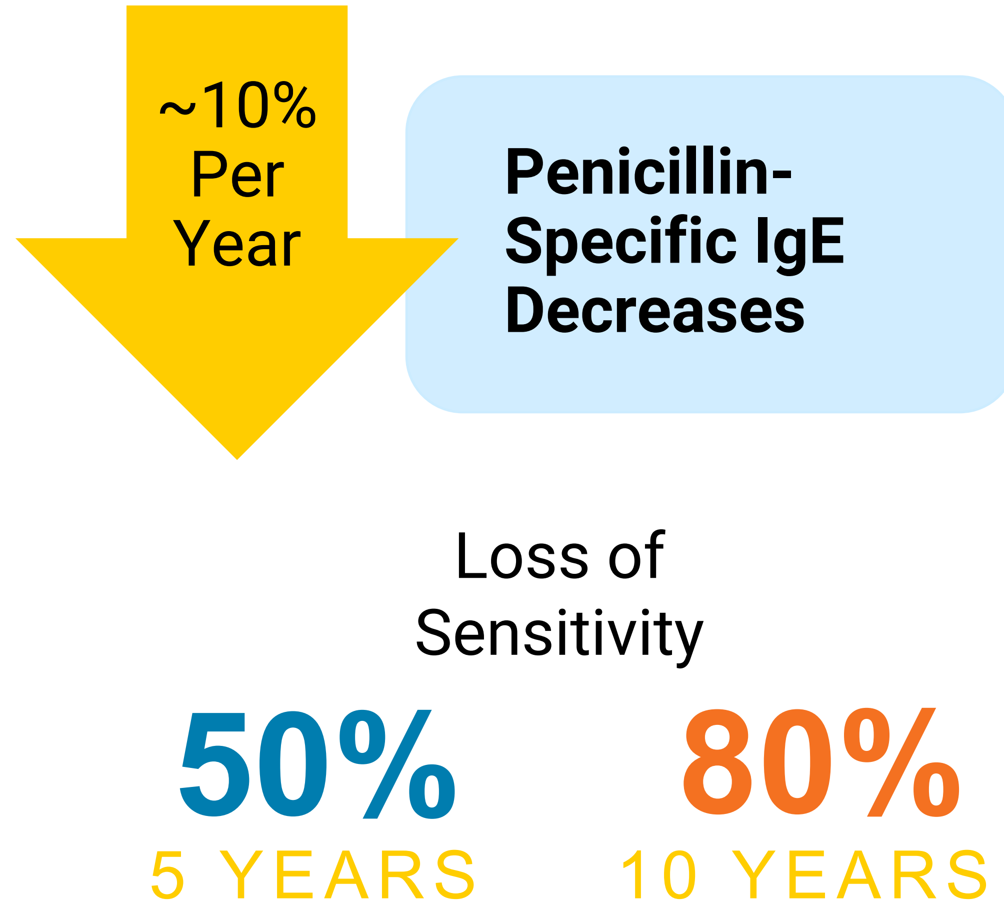
- Antibiotic resistance
- Higher rates of *C. difficile* infection
- Use of more costly antibiotics
- Increased length of hospital stays

Formal Allergy Assessment

- <5% Labeled as allergic to penicillin are truly allergic

Castells M, Khan DA, Phillips EJ. N Engl J Med 2019 381;24:2338-51.

Penicillin Drug Allergy - Amnesia



Loss of Sensitivity

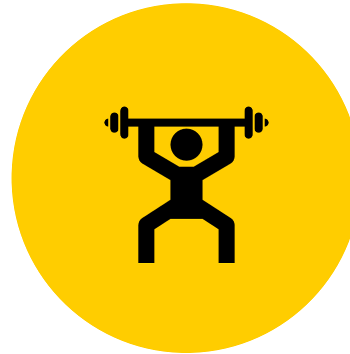
50%
5 YEARS

80%
10 YEARS

Khan DA, et al. J Allergy Clin Immunol 2022;150(6):1333-93.

Penicillin Allergy

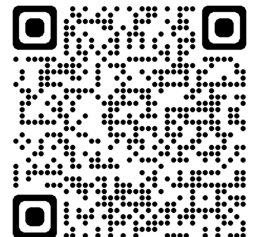
We recommend that a **proactive effort should be made to de-label** patients with reported penicillin allergy, if appropriate



Strength of Recommendation:
Strong

Certainty of Evidence:
Moderate

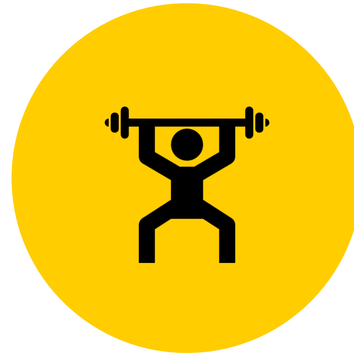
FULL TEXT ARTICLE
Penicillin Allergy Evaluation Should Be Performed Proactively in Patients with a Penicillin Allergy Label
Article in Press: Accepted Manuscript
Journal of Allergy and Clinical Immunology: In Practice, Copyright © 2023



Khan DA, et al. J Allergy Clin Immunol 2022;150(6):1333-93.
https://www.sciencedirect.com/science/article/abs/pii/S2213219823011297

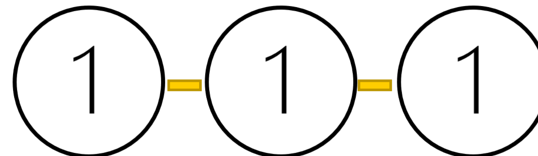
Penicillin Allergy

We suggest **penicillin skin testing** for patients with a history of **anaphylaxis** or a **recent reaction** suspected to be IgE-mediated



Strength of Recommendation:
Conditional

Certainty of Evidence:
Low



Urticaria after first dose in **1 hour**
Regressed in **1 day**
Occurred within **1 year**
High likelihood of positive skin test

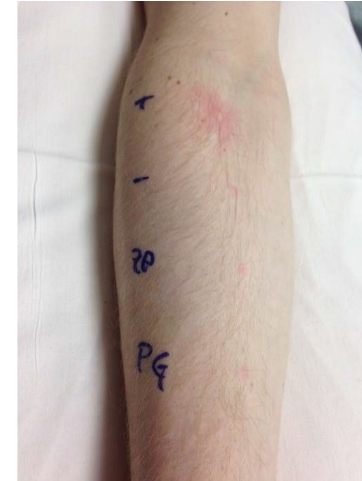
Khan DA, et al. J Allergy Clin Immunol 2022;150(6):1333-93.

Skin Testing Process

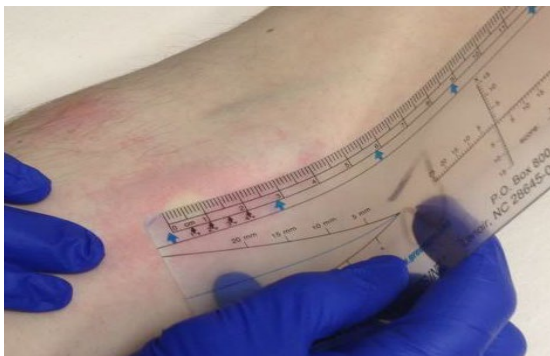
Step 1: Materials

Step 2: Skin Prick Test

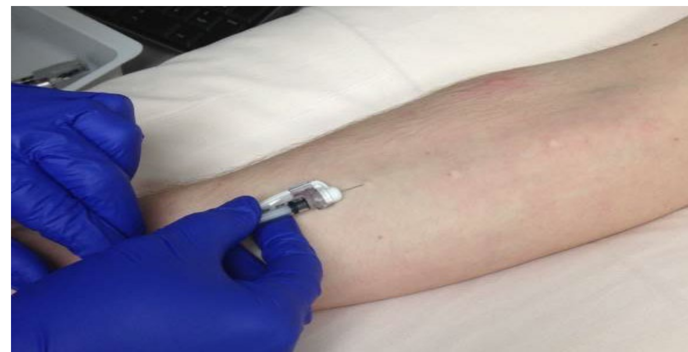
Step 3: Process **15** min



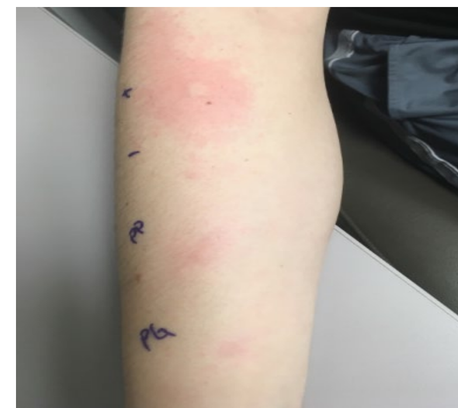
Step 4: Measure



Step 5 if (-): Intradermal Test

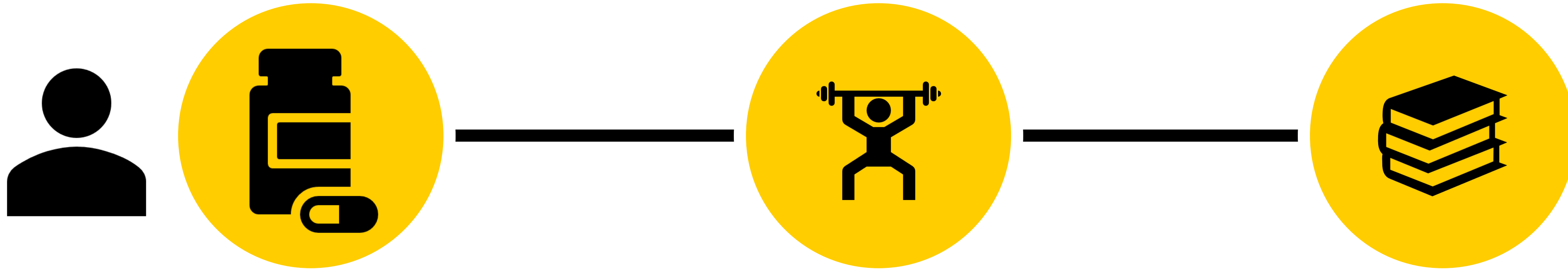


Step 6&7: Process **20** min & Measure



Step 8 if (-):
Drug challenge if able
≥30 min observation

Penicillin Allergy



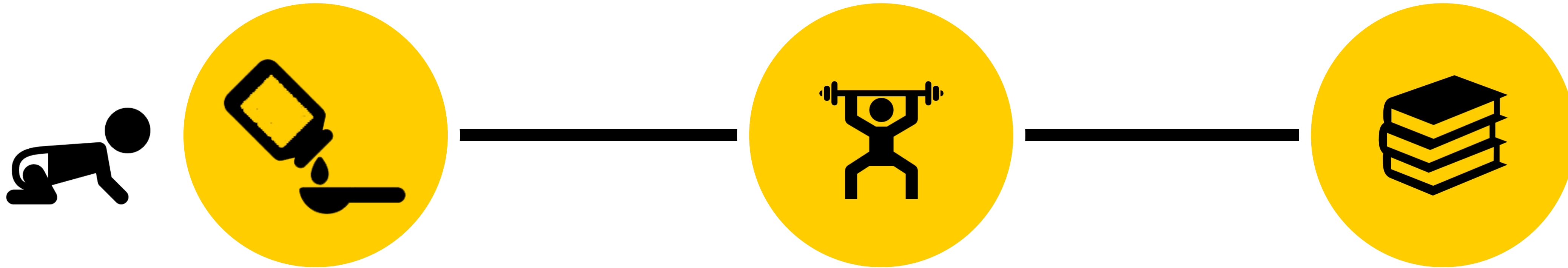
We suggest that **direct amoxicillin challenge be considered** in adults with a history of distant (i.e., >5 years ago) AND benign cutaneous reactions, such as morbilliform drug eruption (MDE) and urticaria

Strength of Recommendation:
Conditional

Certainty of Evidence:
Low

Khan DA, et al. J Allergy Clin Immunol 2022;150(6):1333-93.

Penicillin Allergy



We recommend against **penicillin skin testing prior to direct amoxicillin challenge** in PEDIATRIC patients with a history of benign cutaneous reaction, such as MDE and urticaria

Strength of Recommendation: **Strong**

Certainty of Evidence: **Moderate**

Khan DA, et al. J Allergy Clin Immunol 2022;150(6):1333-93.

Penicillin Allergy

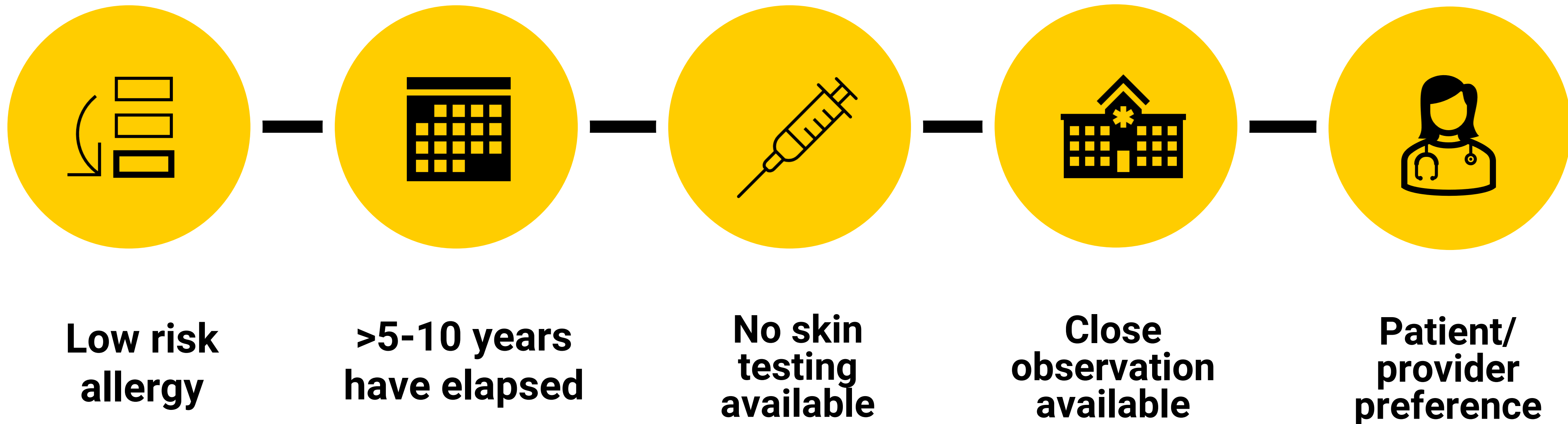
We recommend against **any testing in patients with a history inconsistent with penicillin allergy** (such as headache, family history, or diarrhea), but a *1-step amoxicillin challenge may be offered* if anxious or request additional reassurance to accept removal of penicillin allergy label

Strength of Recommendation: Strong

Certainty of Evidence: Low

Khan DA, et al. J Allergy Clin Immunol 2022;150(6):1333-93.

Drug Challenge ONLY



- **1- or 2- step drug challenge** is indicated if after evaluation they are deemed unlikely to be allergic
- **Placebo-controlled challenge** should be considered if subjective symptoms and/or multiple reported drug allergies

PEN-FAST

Figure. PEN-FAST Penicillin Allergy Clinical Decision Rule

PEN	*Penicillin allergy reported by patient*	*If yes, proceed with assessment*
F	*Five years or less since reaction*[a]	**2 points**
A	*Anaphylaxis or angioedema* OR	**2 points**
S	*Severe cutaneous adverse reaction*[b]	
T	*Treatment required for reaction*[a]	**1 point**
		Total points

Interpretation

Points	
0	**Very low risk** of positive penicillin allergy test <1% (<1 in 100 patients reporting penicillin allergy)
1-2	**Low risk** of positive penicillin allergy test 5% (1 in 20 patients)
3	**Moderate risk** of positive penicillin allergy test 20% (1 in 5 patients)
4-5	**High risk** of positive penicillin allergy test 50% (1 in 2 patients)

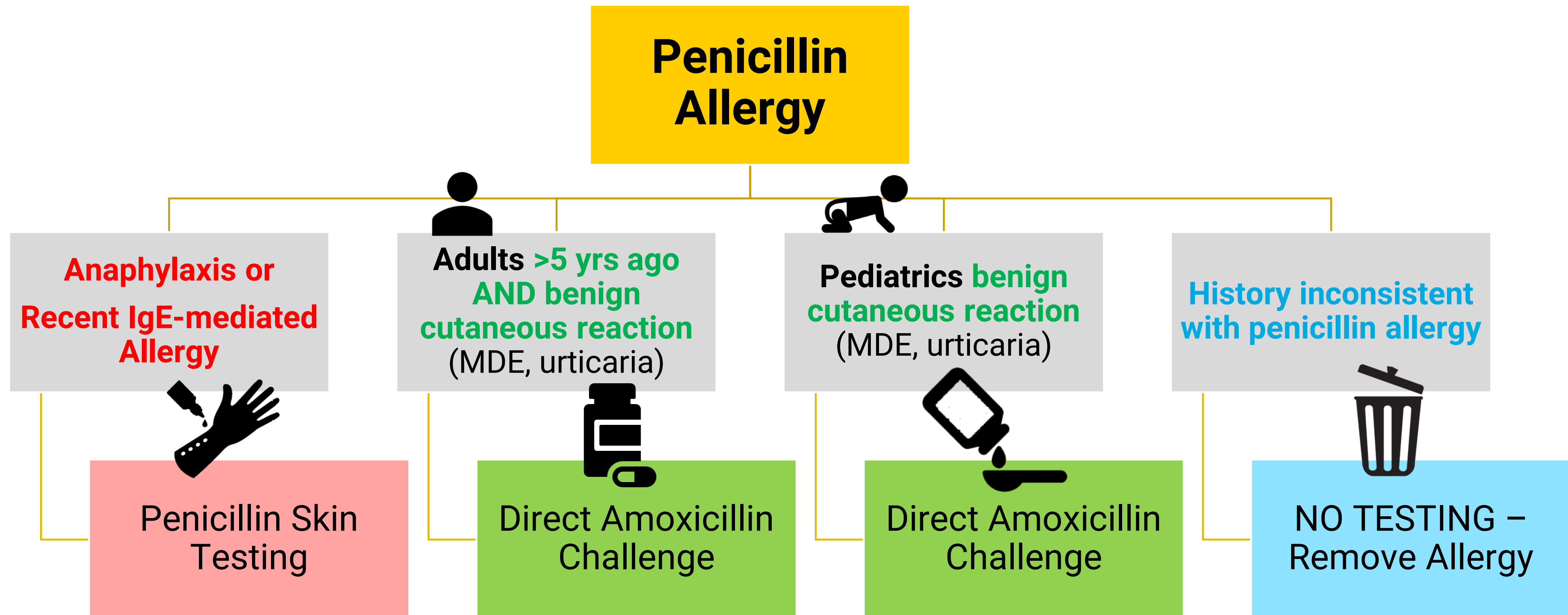
The PEN-FAST clinical decision rule for patients reporting a penicillin allergy uses 3 clinical criteria of time from penicillin allergy episode, phenotype, and treatment required. A total score is calculated using PEN-FAST score in the upper panel, and interpretation for risk strategy is provided in the lower panel.

[a] Includes unknown.

[b] Forms of severe delayed reactions include potential Stevens-Johnson syndrome, toxic epidermal necrolysis, drug reaction with eosinophilia and systemic symptoms, and acute generalized exanthematous pustulosis. Patients with a severe delayed rash with mucosal involvement should be considered to have a severe cutaneous adverse reaction. Acute interstitial nephritis, drug induced liver injury, serum sickness and isolated drug fever were excluded phenotypes from the derivation and validation cohorts.

Trubiano et al. JAMA Intern Med. 2020;180(5):745-752.

Penicillin Allergy – Summary of Recommendations



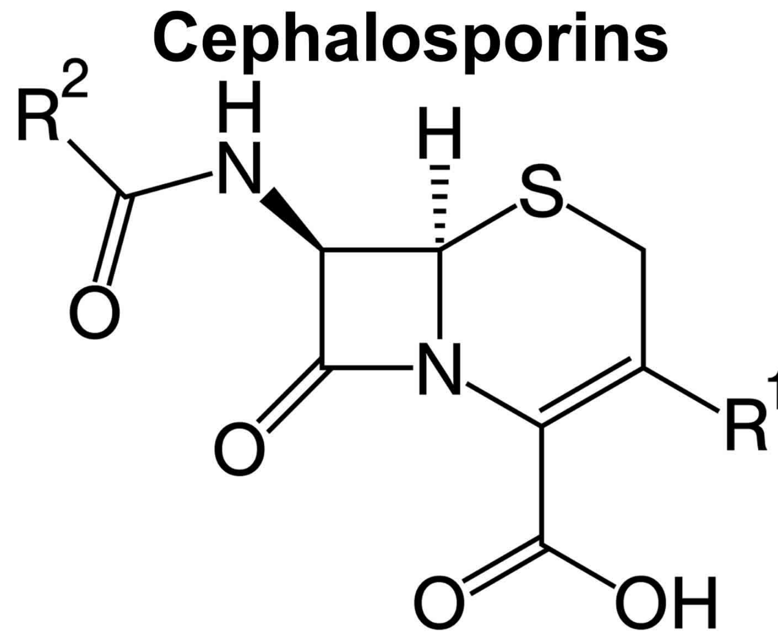
*MDE – Morbilliform drug eruption

Post-Assessment CASE

- You have a patient with transient urticaria with the first 24 hours of taking amoxicillin 15 years. What is the next best step?

A. **Amoxicillin drug challenge**
B. Avoid all penicillins
C. Penicillin skin testing
D. Still unsure on what to do

Cephalosporin Allergies



Cephalosporin Drug Allergy

Cross-Reactivity
Penicillin & Cephalosporins

- Immediate allergies largely related to antigenic responses to R1 group/side chains rather than core beta-lactam
- Anaphylaxis may occur if history of penicillin allergy
- Cross-reactivity is lower than previously thought
- Before 1980, cross-reactivity was 10% as 1st generation cephalosporins were contaminated with PCN

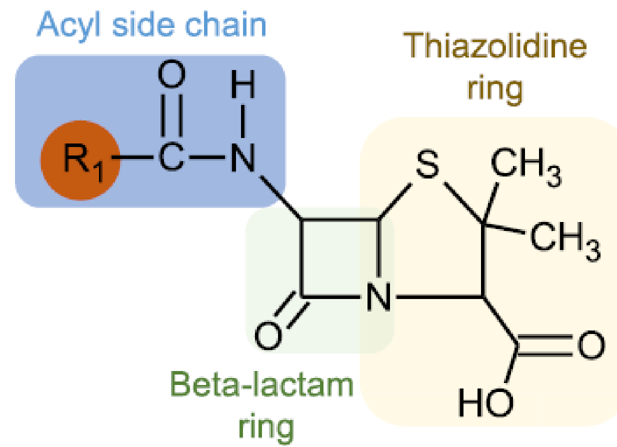
FACTS

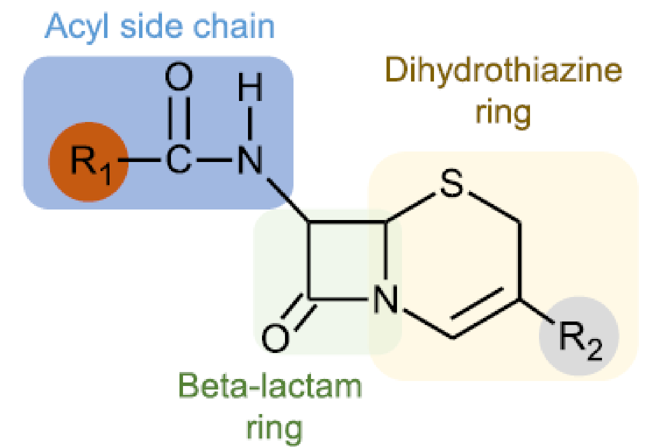
- 1st & 2nd generation most common
- Infrequent clinical significance

<2
PERCENT
Chance of Reaction to Cephalosporin with Penicillin Allergy History

Annals of Allergy, Asthma, and Immunology. 2010 Oct;105(4):259-273.
Khan DA, et al. J Allergy Clin Immunol 2022;150(6):1333-93.

Cephalosporin Drug Allergy





Khan DA, et al. J Allergy Clin Immunol 2022;150(6):1333-93.

Penicillin Allergy – Giving Cephalosporins

We suggest that for patients with history of unverified (not confirmed) non-anaphylactic **penicillin allergy**, a **cephalosporin can be administered** without testing or additional precautions

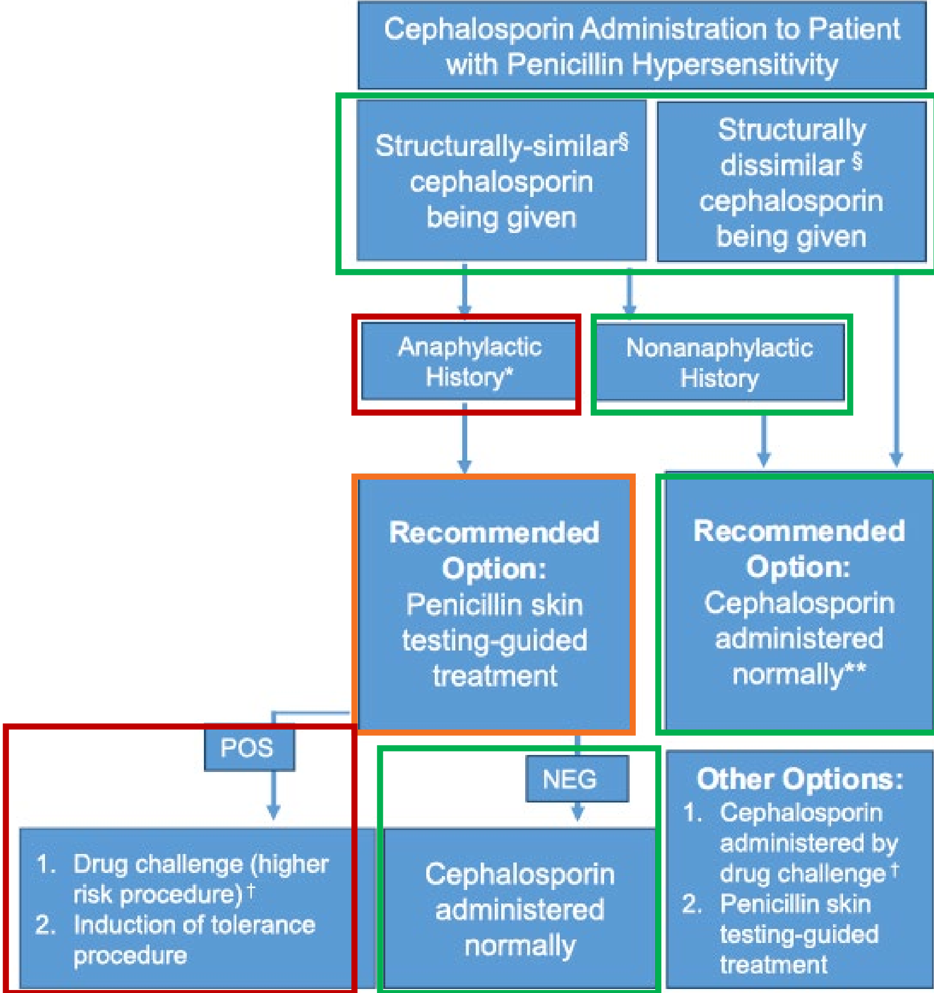
We suggest that for patients with **anaphylaxis to a penicillin**, a structurally dissimilar R1 side chain **cephalosporin can be administered** without testing or additional precautions

Strength of Recommendation: Conditional

Certainty of Evidence: Moderate

Khan DA, et al. J Allergy Clin Immunol 2022;150(6):1333-93.

NEW: *Penicillin Allergy – Giving Cephalosporins*



*Anaphylaxis, angioedema, hypotension, or other severe IgE-mediated reactions.

§Similarity or cross-reactivity based on R1 side chain.

**Penicillin allergy assessment performed in the future as the penicillin allergy label would remain.

†All drug challenges are 1-2 steps with number of steps determined on patient allergy history, patient clinical history and structural similarity between R1 side chains.

Khan DA, et al. J Allergy Clin Immunol 2022;150(6):1333-93.

Beta-Lactam Antibiotic Groups

TABLE XII. Groups of beta-lactam antibiotics that share side chains

R1—Identical side chains					
Amoxicillin	Ampicillin	Ceftriaxone Cefotaxime	Cefoxitin	*Cefamandole*	Ceftazidime
Cefadroxil	Cefaclor Cephalexin	Cefpodoxime Cefditoren Cefepime	*Cephaloridine*	*Cefonicid*	Aztreonam
Cefprozil	*Cephradine*	*Ceftizoxime*	*Cephalothin*		
Cefatrizine	*Cephaloglycin*	*Cefmenoxime*			
R2—Identical side chains					
Cephalexin	Cefotaxime	Cefuroxime	Cefotetan	Cefaclor	Ceftibuten
Cefadroxil	*Cephalothin*	Cefoxitin	*Cefamandole*	*Loracarbef*	*Ceftizoxime*
Cephradine	*Cephaloglycin*		*Cefmetazole Cefpiramide*		
	Cephapirin				

Italic indicates the drug is not available in United States or manufacturing has been discontinued.
Similar side chains may also be a source of cross-reactivity, see cross-reactivity matrix (see Fig E2).

Beta-Lactam Antibiotic Groups

	Cefazolin (first)	Cefaclor (second)	Cefadroxil (first)	Cefepime (fourth)	Cefotaxime (third)	Cefoxitin (second)	Cefprozil (second)	Ceftazidime (third)	Ceftriaxone (third)	Cephalexin (first)	Amoxicillin	Ampicillin	Aztreonam
Cefazolin (first)	-												
Cefaclor (second)		-								X		X	
Cefadroxil (first)			-				X			X	X		
Cefepime (fourth)				-	X				X				
Cefotaxime (third)				X	-				X				
Cefoxitin (second)						-							
Cefprozil (second)			X				-				X		
Ceftazidime (third)								-					X
Ceftriaxone (third)				X	X				-				
Cephalexin (first)		X	X							-		X	
Amoxicillin			X				X				-		
Ampicillin		X								X		-	
Aztreonam								X					-

FIGURE 2. Matrix of β-lactam antibiotics with identical R1-group side chains (*red*).

Banerji, et al. J Allergy Clin Immunol Pract Feb 2023;11(2): 356-368.

Cephalosporin Allergy – Giving Penicillins

We suggest with a history of an unverified non-anaphylactic **cephalosporin allergy**, a **penicillin can be administered** without testing or additional precautions

We suggest against **penicillin skin testing** with a history of non-anaphylactic **cephalosporin allergy** prior to administration of a penicillin therapy

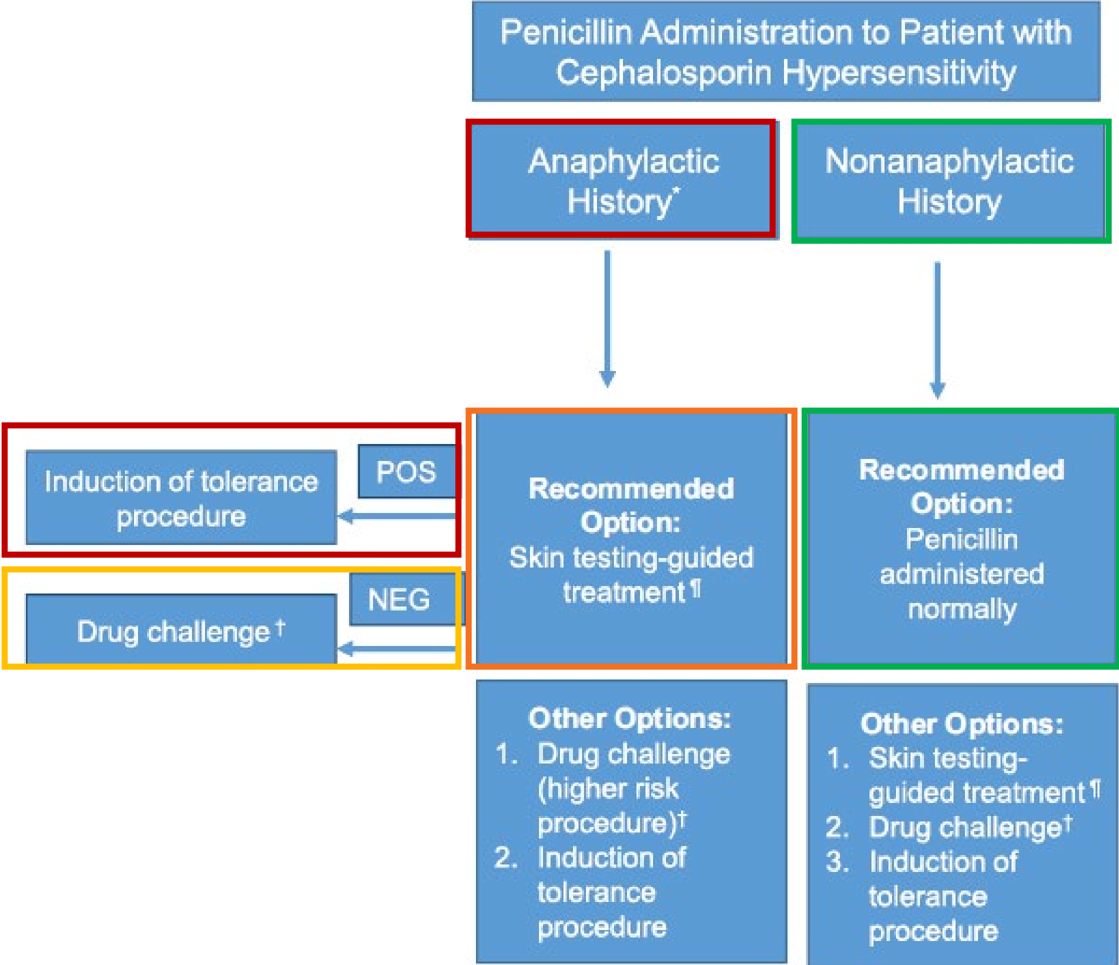
We suggest with a history of **anaphylaxis to cephalosporins, penicillin skin testing and drug challenge should be performed** prior to administration of a penicillin therapy

Strength of Recommendation: Conditional

Certainty of Evidence: Low

Khan DA, et al. J Allergy Clin Immunol 2022;150(6):1333-93.

Cephalosporin Allergy – Giving Penicillins



*Anaphylaxis, angioedema, hypotension, or other severe IgE-mediated reactions.

§Similarity or cross-reactivity based on R1 side chain.

¶**Cephalosporin skin testing should be used for parenteral cephalosporins only.** A positive (POS) test suggests IgE antibodies and induction of tolerance procedure should be performed or administration of an alternative cephalosporin to which the patient was skin test negative (NEG). A negative test should be followed by a drug challenge.

†All drug challenges are 1-2 steps with number of steps determined on patient allergy history, patient clinical history and structural similarity between R1 side chains.

Khan DA, et al. J Allergy Clin Immunol 2022;150(6):1333-93.

Cephalosporin Allergy – Giving Cephalosporins

We suggest that for patients with a history of **non-anaphylactic cephalosporin allergy, direct challenges** (without prior skin test) to cephalosporins with dissimilar side chains be performed to determine tolerance

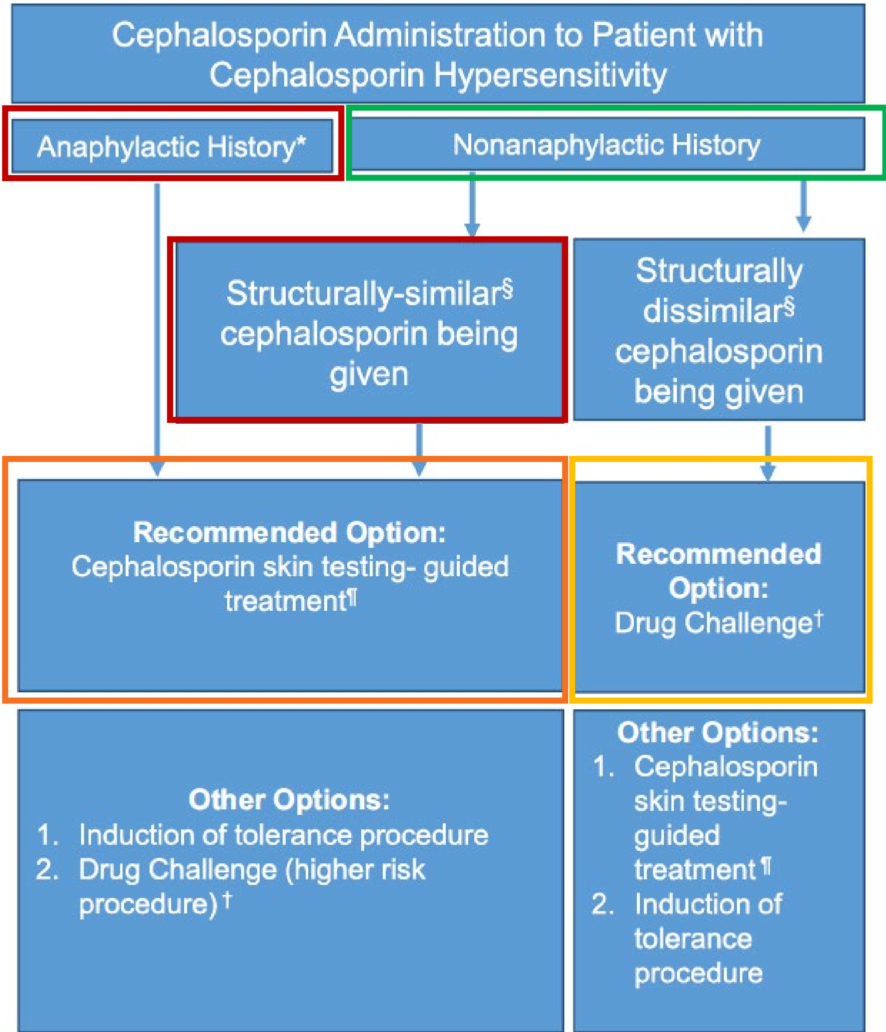
We suggest that for patients with a history of **anaphylaxis to a cephalosporin**, a **negative cephalosporin skin test** should be confirmed prior to administration of a parenteral cephalosporin with a non-identical R1 side chain

Strength of Recommendation: Conditional

Certainty of Evidence: Moderate (non-anaphylactic) **Low** (anaphylaxis)

Khan DA, et al. J Allergy Clin Immunol 2022;150(6):1333-93.

Cephalosporin Allergy – Giving Cephalosporins



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Khan DA, et al. J Allergy Clin Immunol 2022;150(6):1333-93.

Cephalosporin Skin Testing

TABLE XIII. Immediate hypersensitivity cephalosporin skin testing[119,265,266]

	Cefazolin*	Cefuroxime†	Cefotaxime	Ceftazidime	Ceftriaxone	Cefepime‡
Step 1: Epicutaneous (prick/puncture)	200 mg/mL	90 mg/mL	100 mg/mL	100 mg/mL	100 mg/mL	2 mg/mL
Step 2:§ Intradermal	2.0 mg/mL	1 mg/mL	1 mg/mL	1 mg/mL	1 mg/mL	2 mg/mL
Step 3: Intradermal	20 mg/mL	10 mg/mL	10 mg/mL	10 mg/mL	10 mg/mL	2 mg/mL

*Others have used 100 mg/mL for epicutaneous and 1 mg/mL and 10 mg/mL for intradermal testing.[267,268]

†Recommended 100 mg/mL for testing, but 90 mg/mL is the final concentration when the drug is resuspended.

‡For cefepime, 20 mg/mL is irritating.

§Recommended primarily for patients with history of severe and/or recurrent reactions. Penicillin skin testing may also be appropriate for patients presenting with cephalosporin allergy in some circumstances.

Khan DA, et al. J Allergy Clin Immunol 2022;150(6):1333-93.

Summary

	Drug to be Administered	Drug Allergy Label: Penicillin Derivative	Drug Allergy Label: Cephalosporin Derivative
Nonanaphylactic Benign Cutaneouos Reaction (>5 Years Ago)	**Penicillin Derivative**	Amoxicillin drug challenge	**No testing needed prior to administration**
Nonanaphylactic Benign Cutaneouos Reaction (>5 Years Ago)	**Cephalosporin Derivative**	**No testing needed prior to administration**	Structurally Similar R1 Side Chain Cephalosporin skin testing (when available), and if negative, followed by cephalosporin drug challenge OR drug challenge alone in low risk patients Structurally Dissimilar Cephalosporin drug challenge
Anaphylactic Reaction OR Recent Ig-E Mediated Reaction (<5 years ago)	**Penicillin Derivative**	Penicillin skin testing, and if negative, followed by amoxicillin drug challenge	Penicillin skin testing, and if negative, followed by amoxicillin drug challenge OR may consider cephalosporin skin testing (when available)
Anaphylactic Reaction OR Recent Ig-E Mediated Reaction (<5 years ago)	**Cephalosporin Derivative**	Structurally Similar Penicillin skin testing, and if negative, followed by amoxicillin drug challenge and then administer cephalosporin normally Structurally Dissimilar **No testing needed prior to administration**	Cephalosporin skin testing (when available) followed by cephalosporin drug challenge

**Adapted from the Khan et al. Drug allergy: A 2022 practice parameter update. Note, these are the most common options for evaluation, but other options do exist based on individual patient risk. Please refer to the practice parameter for full details.*

Post-Assessment CASE

- You have a patient with wheezing, diffuse flushing and hypotension within 30 min of taking amoxicillin 7 years ago. What is the next best step if they need a cephalosporin?

A. **Give cephalexin without precautions**
B. Give cefprozil without precautions
C. Give a non-beta-lactam antibiotic
D. Refer to Allergy Clinic before prescribing anything

CASE

- You have a patient with a diffuse morbilliform rash 3 days after taking cephalexin 10 years ago. What is the next best step if a beta-lactam would be the first line treatment?

A. Prescribe an alternate non-beta-lactam antibiotic
B. Prescribe amoxicillin without precaution
C. Prescribe cefaclor without precaution
D. Refer to Allergy Clinic for cephalexin skin testing

Sulfonamide Allergies

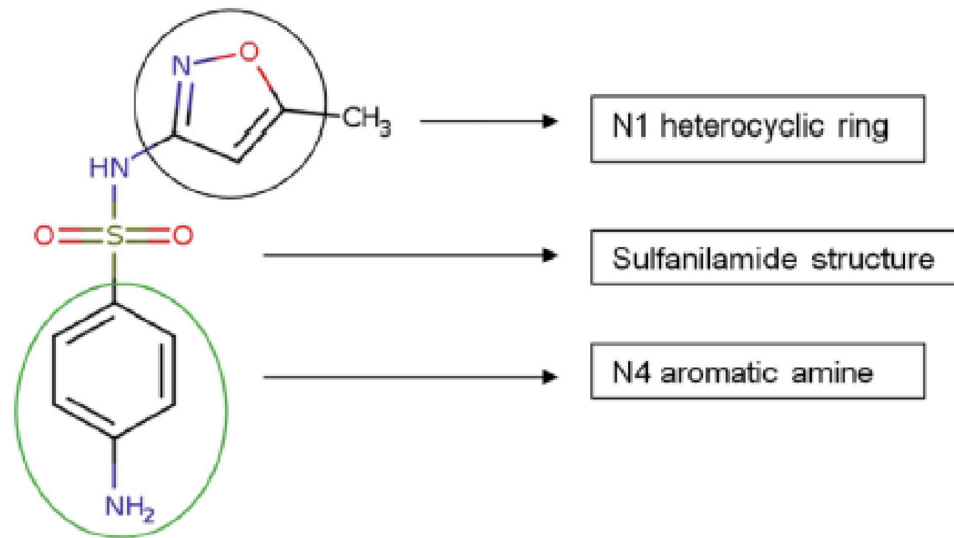


FIG 4. Structure of sulfonamide.

Sulfonamide Drug Allergy

SULFONAMIDES

- Compounds that have a SO2NH2 moiety
- Reactions are primarily a maculopapular rash accompanied by fever

3-6
PERCENT

Patients Have Reported Allergic Reactions to Sulfa Antibiotics

Classes of Sulfa Drugs

1. Sulfonylarylamines (includes sulfa antibiotics)
2. Non-sulfonylarylamines
3. Sulfonamide moiety containing agents

NO Cross-reactivity between these 3 classes

Pharmacist's Letter - Prescriber's Letter. 2010;26(6):260601.
Khan DA, et al. J Allergy Clin Immunol 2022;150(6):1333-93.

Sulfonamide Groups

Sulfonylarylamines

Antibiotics

Sulfacetamide
Sulfadiazine
Sulfamethoxazole
Sulfanilamide
Sulfasalazine
Sulfisoxazole

Antivirals

Amprenavir
Darunavir
Fosamprenavir
Tipranavir

Non-Sulfonylarylamines

Carbonic Anhydrase Inhibitors

Acetazolamide
Brinzolamide
Dorzolamide
Methazolamide

Cox-2 Inhibitors

Celecoxib

Loop Diuretics

Bumetanide
Furosemide
Torsemide

Sulfonylureas

Glimepiride
Glipizide
Glyburide
Tolazamide

Thiazide Diuretics

Chlorothiazide
Chlorthalidone
Hydrochlorothiazide

Sulfonamide Moiety

5-HT Antagonists

Naratriptan
Sumatriptan
Zolmitriptan

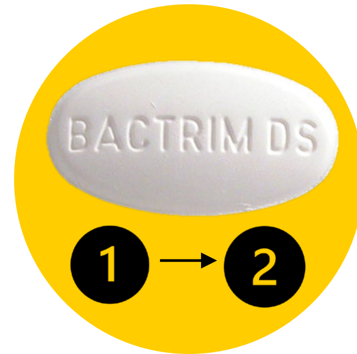
Other Agents

Probenecid
Tamsulosin
Indapamide
Metolazone
Sotalol
Topiramate
Zonisamide

Sulfa Drugs and the Sulfa-Allergic Patient. Pharmacist's Letter/Prescriber's Letter. 2010;26(6):260601.

Sulfonamide Antibiotic Allergy

We suggest for patients with a history of benign cutaneous reactions (e.g. morbilliform drug eruption, urticaria) to sulfonamide antibiotics that occurred **>5 years** ago, a **1-step drug challenge with trimethoprim-sulfamethoxazole** be performed when there is a need to delabel a sulfonamide antibiotic allergy



For patients with reactions within the past 5 years, **a 2-step challenge is now recommended**

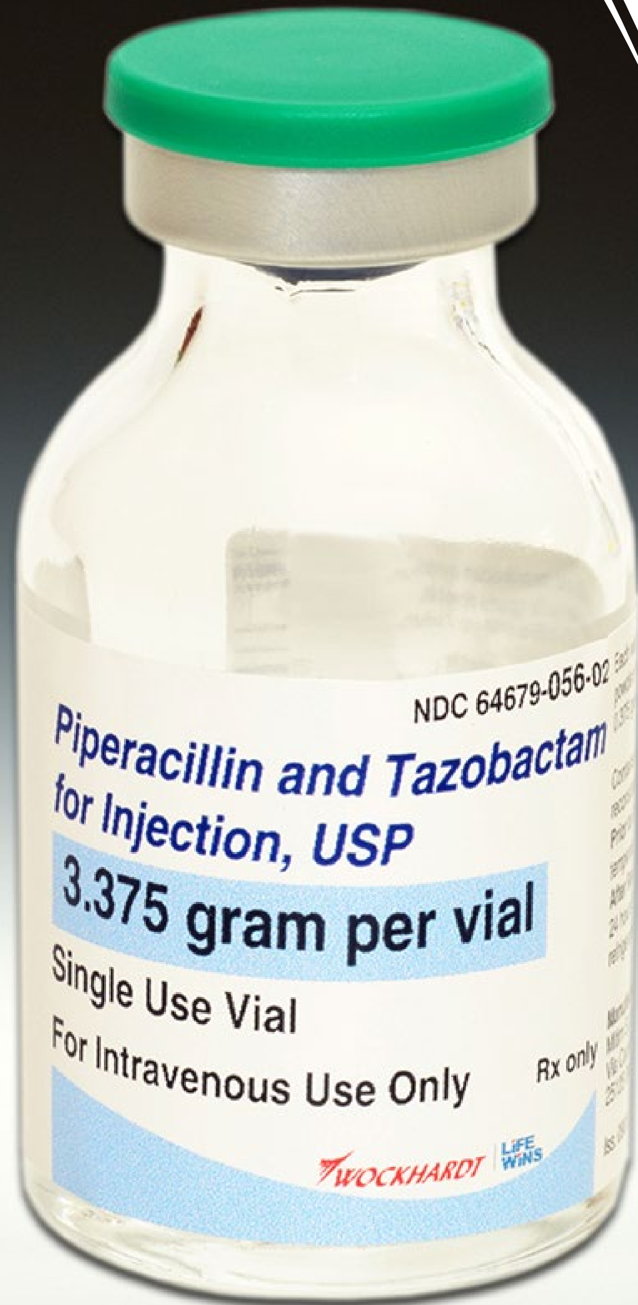
Strength of Recommendation: Conditional

Certainty of Evidence: Low

There is no skin testing available for sulfa allergies

Khan DA, et al. J Allergy Clin Immunol 2022;150(6):1333-93.

Other Antibiotic Allergies

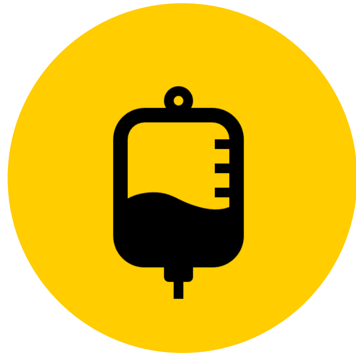


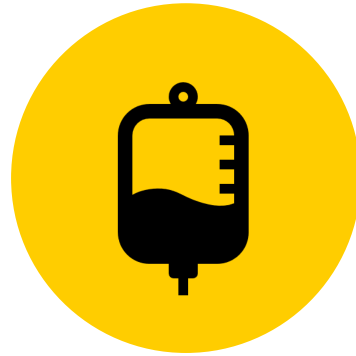
Selective Reactions to Piperacillin-Tazobactam

- Reports of selective allergic reactions to piperacillin-tazobactam have been published
- Most patients with reactions to piperacillin-tazobactam can tolerate other penicillins
- These individuals have positive skin testing to piperacillin-tazobactam, but are negative to all other penicillin skin test reagents (and tolerate other penicillins)
- Skin testing to piperacillin-tazobactam may be useful to identify this selective sensitivity, but the utility of this skin testing is unknown

J Allergy Clin Immunol Pract. 2021;9(5)2001-9.

Carbapenems and Monobactams





We suggest that in patients with a history of penicillin or cephalosporin allergy, a carbapenem **may be administered** without testing or additional precautions

We suggest that in patients with a history of penicillin or cephalosporin allergy, aztreonam **may be administered** without prior testing unless there is a history of ceftazidime allergy

Strength of Recommendation: Conditional

Certainty of Evidence: Moderate

Khan DA, et al. J Allergy Clin Immunol 2022;150(6):1333-93.

Fluoroquinolones & Macrolides

We suggest using a **1-step or 2-step drug challenge** without preceding skin testing to confirm tolerance in patients with a history of non-anaphylactic reactions to **fluoroquinolones or macrolides**

Strength of Recommendation: Conditional

Certainty of Evidence: Low

Khan DA, et al. J Allergy Clin Immunol 2022;150(6):1333-93.

Antimicrobial Stewardship Efforts

Antibiotic Stewardship

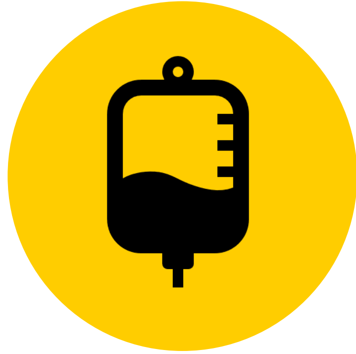
We recommend that **allergist-immunologists collaborate** with hospitals and healthcare systems to implement beta-lactam allergy pathways to improve **antibiotic stewardship** outcome

Strength of Recommendation: Strong

Certainty of Evidence: Moderate

Khan DA, et al. J Allergy Clin Immunol 2022;150(6):1333-93.

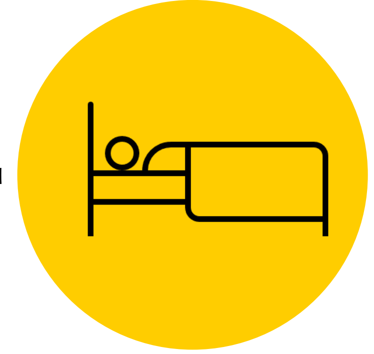
UIHC Stewardship Efforts



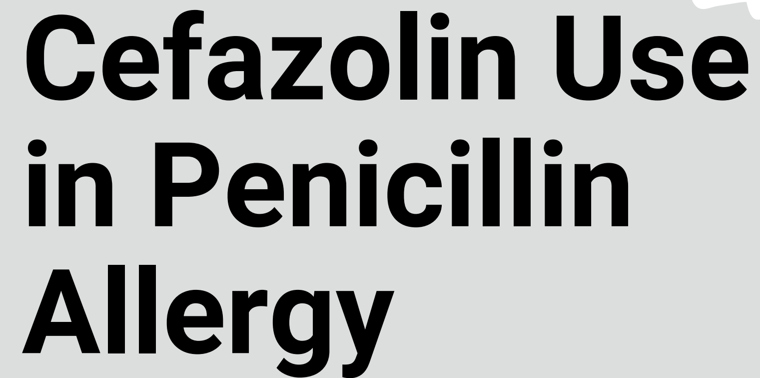
Clearance to get cefazolin

Decoupling of Epic cross-reactivity alerts for beta-lactam antibiotics

BPA for obstetrics



Inpatient amoxicillin challenges



Cefazolin Use in Penicillin Allergy

UIHC guidance now supports use of cefazolin for ANY penicillin allergy

- Literature validates that cefazolin is safe to give in ALL penicillin allergic patients
  - Regardless of allergy history
- Information went out to ALL surgical services
- Continued education of prescribers

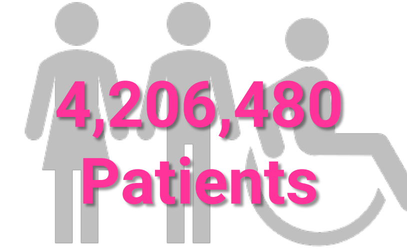
JAMA Network | Open

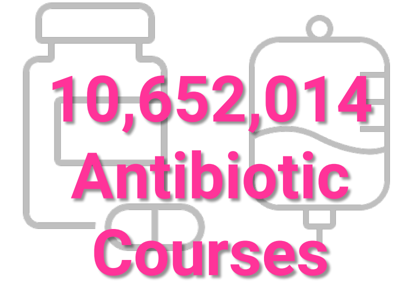
Original Investigation | Allergy

Association Between Removal of a Warning Against Cephalosporin Use in Patients With Penicillin Allergy and Antibiotic Prescribing

Eric Macy, MD, MS; Thomas A. McCormick, PhD; John L. Adams, PhD; William W. Crawford, MD; Myngoc T. Nguyen, MD; Liem Hoang, PharmD, MS; Victoria Eng, MD; Anna C. Davis, PhD; Elizabeth A. McGlynn, PhD

INTERVENTIONS OR EXPOSURES Oral or parenteral antibiotics dispensed or administered after removal of an EHR alert to avoid cephalosporin use in patients with a recorded penicillin allergy.

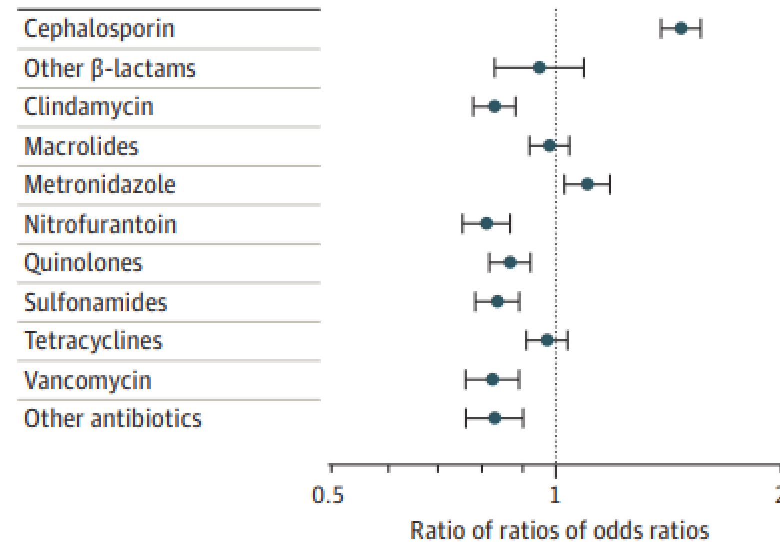




No significant differences in anaphylaxis (9 total cases), new allergies (RROR, 1.02; 95% CI, 0.93-1.12), or treatment failures (RROR, 1.02; 95% CI, 0.99-1.05) with courses used.

No significant differences were found in all-cause mortality (RRRR, 1.03; 95% CI, 0.94-1.13), hospital days (RRRR, 1.04; 95% CI, 0.99-1.10), and new infections at the patient level.

Figure. Multinomial Logistic Regression of Changes in Antibiotic Use Among Patients With Penicillin Allergies



Macy E et al. JAMA Netw Open. 2021;4(4):e218367.

EPIC EMR Updates

- As of 11/15/2022 no longer trigger cross-reactivity alerts for penicillins and cephalosporins for most reaction types
  - Cross-reactivity alerts will **continue to trigger for anaphylaxis and anaphylactic shock** due to limitations of EMR - guidance is that alternative beta-lactam classes may still be administered

- Considerations should still be made for a non-beta-lactam alternative in the setting of a severe non-IgE-mediated reaction (i.e. Stevens-Johnson Syndrome, Toxic Epidermal Necrolysis, serum sickness, etc.)

CASE

- You have a patient with anaphylaxis to penicillin after taking it 5 years ago. What is the next best step if they need a surgical prophylaxis?

A. **Cefazolin**
B. A non-beta-lactam antibiotic
C. Refer to the Allergy Clinic for an amoxicillin oral challenge
D. Refer to the Allergy Clinic for penicillin skin testing

UIHC Drug Allergy Clinic

Est. 2013

Evaluate Patients with Drug Allergies

Identifying True IgE-Mediated Reactions

Increase Use of 1st Line Antibiotic Prophylaxis and Treatment

MONDAYS

PharmD/MD **or** MD Only

OTHER DAYS

Fellow and Faculty Clinics

Obstetrics BPA – *June 2021*

Important (1)

This patient has indicated an allergy to a **penicillin** medication. Please review the acknowledge reasons below for overriding the BPA. If the patient is included in the target population, place a consult to the Drug Allergy clinic. (BPA-id # 5929)

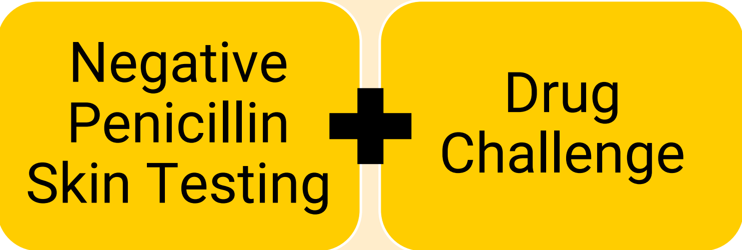
- **Target population** - a penicillin allergy history suggestive of an IgE-mediated reaction (anaphylaxis, angioedema, hives, hypotension, pruritic rash, and/or respiratory distress) OR it is an unknown reaction
- **Do not consult for these reasons** – history of non-allergy adverse effects (nausea, vomiting, diarrhea, or headache), family history of an allergy only, OR history of a severe delayed-onset skin reaction (skin sloughing, blisters, Stevens-Johnson syndrome, or toxic epidermal necrolysis)

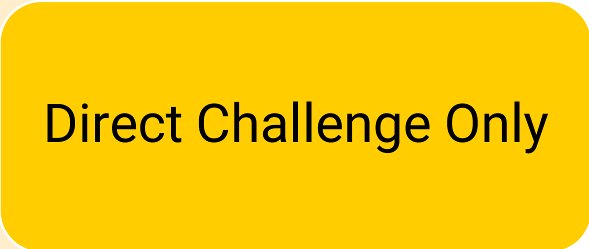
Order | Do Not Order | Consult to Drug Allergy Clinic

Acknowledge Reason

Reaction is non-allergic | Family history only | Severe delayed-onset cutaneous reaction ... | Other options...

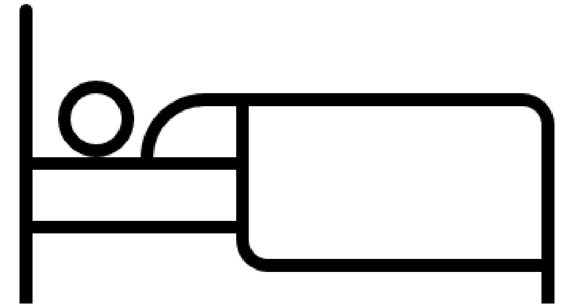
- No consult desired
- See Comments (must leave comment)
- Administrative/Quality/Compliance Char...
- Consulting Nurse - not part of care team





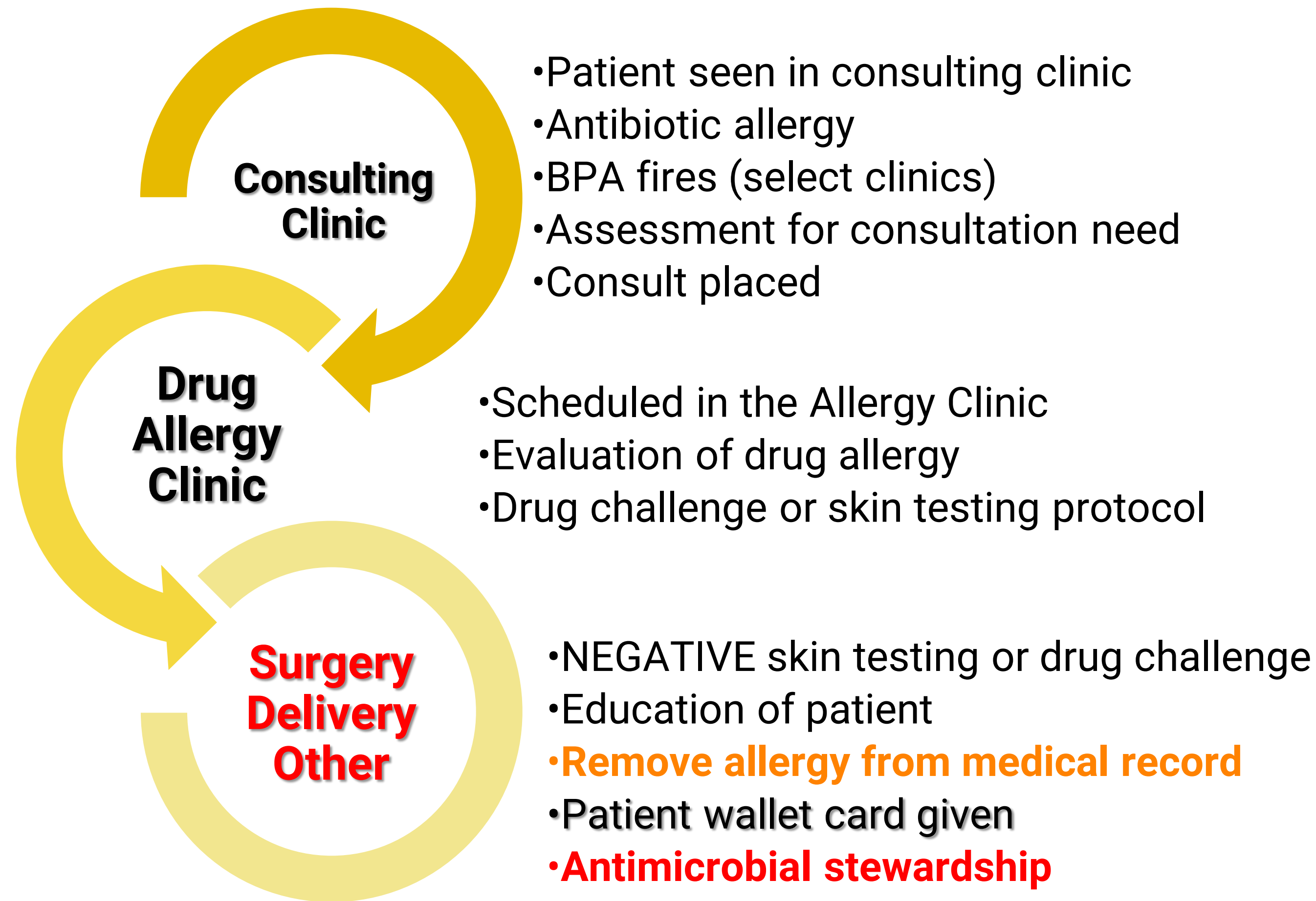
Proactively Delabeling Inpatient Penicillin Allergy

- **QI Project**
  - Oral challenging low risk hospitalized patients with penicillin allergy
  - Fellows (ID and AI) reaching out to teams for patients with penicillin label inpatient that qualify for delabeling
  - For hospitalists:
    - If qualified, fellows reach out and will page you to put orders in.
    - Order set #: 9753
  - Directions and information discussed with nurses before
- **SAFE PRACTICE without issues in multiple studies and in this QI project**



QI Project Logistics

Drug Allergy Clinic Consults



- Patient seen in consulting clinic
- Antibiotic allergy
- BPA fires (select clinics)
- Assessment for consultation need
- Consult placed

- Scheduled in the Allergy Clinic
- Evaluation of drug allergy
- Drug challenge or skin testing protocol

- NEGATIVE skin testing or drug challenge
- Education of patient
- **Remove allergy from medical record**
- Patient wallet card given
- **Antimicrobial stewardship**

Patient Education

Patient Consent

- Done for all patients undergoing a skin test or drug challenge

Home Care Instructions

- All patients given instructions on drug allergy, skin testing and/or challenge

Wallet Card

- Patients provided a wallet card documenting negative allergy status
- Help in informing other providers to REMOVE allergy
- Helps with re-labeling rates

Wallet Cards

PENICILLIN ALLERGY EVALUATION CARD

Name: ______________________ Date: ____________

was evaluated at the **Drug Allergy Clinic.** Testing showed that you are **not allergic** to penicillin or a penicillin derivative.

Please contact the Drug Allergy Clinic at 319-356-8133 for more information or questions.

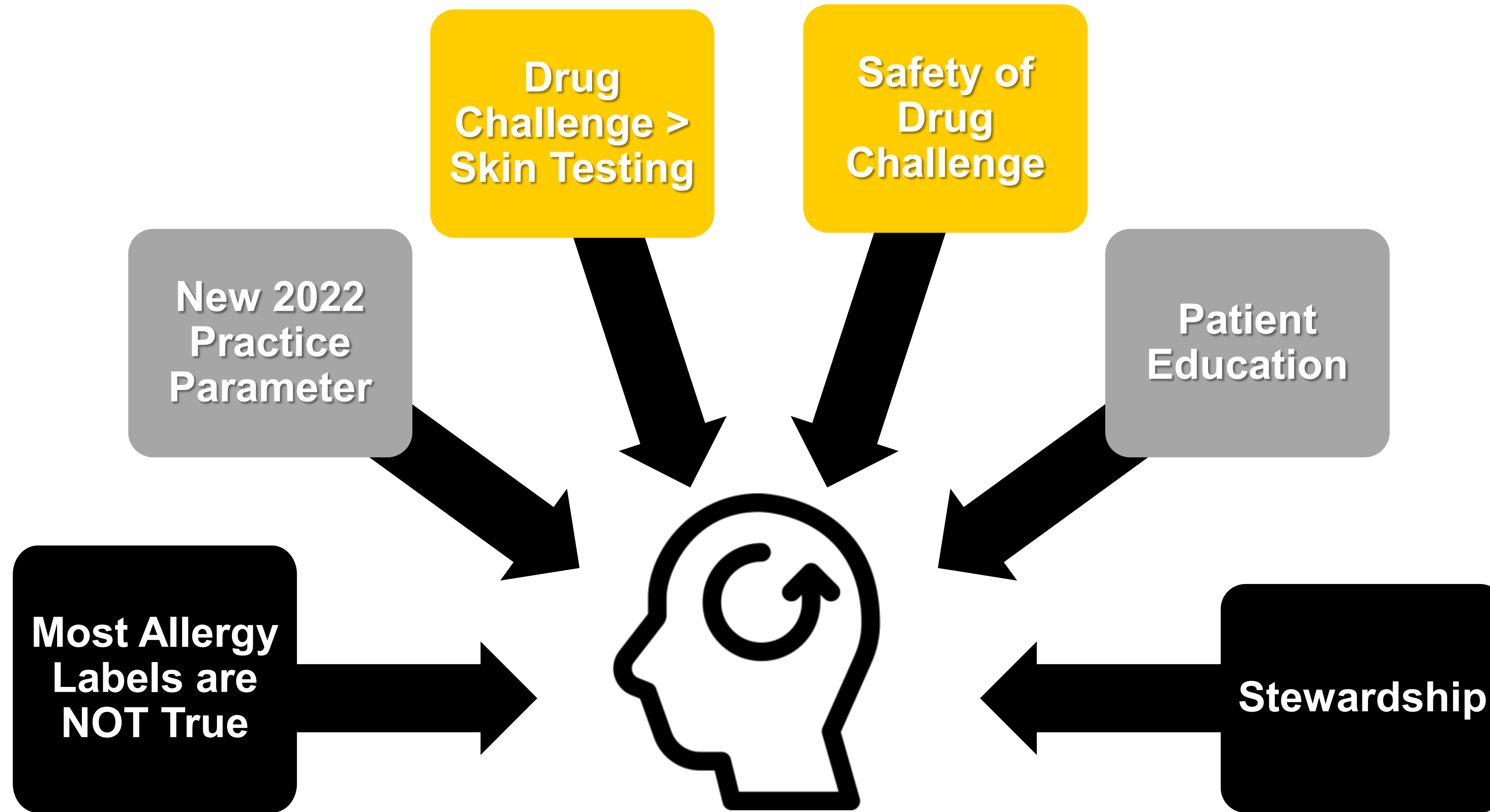
DRUG ALLERGY EVALUATION CARD

Name: ______________________ Date: ____________

was evaluated at the **Drug Allergy Clinic.** Testing showed that you are **not allergic** to ____________________________ .

Please contact the Drug Allergy Clinic at 319-356-8133 for more information or questions.

Take Home Points



UNIVERSITY OF IOWA HEALTH CARE

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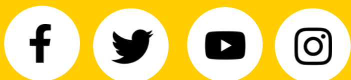

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CHANGING LIVES.®