

# A Dash of Danger: A Rare Case of Paprika Anaphylaxis

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## Introduction

- In this case, we describe a rare case of type 1 hypersensitivity reaction (anaphylaxis) to paprika.
- Paprika is traditionally made from dried and ground red peppers of the species *Capsicum annuum*, usually sweet mild peppers. The species include chili peppers such as jalapeño and cayenne too.
- Anaphylaxis due to spices is uncommon. Case reports have described anaphylaxis with thyme, cumin, and oregano.<sup>1</sup> However, there have only been a few cases of paprika food allergy published.<sup>2</sup>
- Diagnosing a paprika allergy may be challenging due to the infrequency of true anaphylaxis to the spice and the common practice of adding many spices into a single dish.

## Patient Test Results

Skin Test	Result (mm)	Serum IgE Test	Result	Reference Range
Soy	0	Chickpea/Garbanzo	<0.10	<0.35 KU/L
Rice	0	Coriander/Cilantro	<0.10	<=0.34 kU/L
Corn	0	Cumin Seed	<0.10	Class 0 - negative
Mustard	0	Fenugreek Seed	<0.10	Class 0 - negative
Histamine	10/20	Green Bean	<0.10	<0.35 KU/L
Control	0	Mango	<0.10	<0.10 kU/L
Table 1. Skin Test Results		Mustard	<0.10	<0.10 kU/L
		Paprika/Sweet Pepper	0.78 (H)	<0.35 KU/L
		Soybean	<0.10	<0.10 kU/L
		Wheat	0.18 (H)	<0.10 kU/L

Table 2. Serum IgE Test Results

## Case Description

- An 18-year-old female was referred for allergic evaluation after she developed postprandial acute lip swelling, generalized pruritus and hives, requiring an emergency room visit and treatment with epinephrine.
- Symptoms developed 45-60 minutes after eating a restaurant meal consisting of traditional Indian foods, including chicken masala and chickpeas.
- She was evaluated by her primary care provider by serum IgE to a random panel of foods (not specific to her meal), all of which were negative.
- At the time of referral for allergy consultation, she was instructed to obtain an extensive ingredient list from the restaurant, and the list included over one dozen different foods and spices.
- Skin prick testing was negative to soy, rice, corn, and mustard (Table 1). Serum IgE testing was negative to chickpea, soy, cilantro, cumin seed, fenugreek seed, mango, and mustard, but positive to paprika (Table 2).
- Paprika was deemed the likely cause of her food anaphylaxis.
- She was advised to strictly avoid paprika, given an anaphylaxis treatment plan, and prescribed/trained on an epinephrine auto-injector.

## Discussion

- This case demonstrates the importance of obtaining a thorough history and performing targeted food allergy testing. It also highlights the difficulty of diagnosing and preventing allergic reactions to “hidden allergens” such as spices, since they may not be specifically enumerated on food labels and may be included under the umbrella of “spices” or “natural flavorings.”<sup>7</sup>
- Two allergens in the *Capsicum* genus are recognized by the World Health Organization/ International Union of Immunological Societies data bank: thaumatin-like protein (cap a 1) and profilin (cap a 2).<sup>3</sup> Cross-reactivities have been reported between bell pepper/paprika with latex, tobacco, and tomatoes.<sup>4-6</sup>
- Although paprika anaphylaxis is rare with a single case report listed in the literature, recognition of paprika food allergy is critical for the prevention of future episodes of anaphylaxis and potentially associated morbidities and mortality.

## References

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