

CLINICAL VIGNETTE

When Exercise Isn't Good for You

Ami Thakor Philipp, MD, Andrew Pham, MD and Lorraine Anderson, MD

Food Dependent Exercise Induced Anaphylaxis is a rare condition where anaphylaxis only occurs after ingestion of a specific food along with physical exertion within a few hours of eating the food.¹ The combination of the food and exercise together is necessary to trigger the anaphylaxis episodes. Exercise alone does not trigger it, and food consumption alone does not trigger it. There is also a separate entity called Exercise Induced Anaphylaxis, which is exclusively associated with exercise triggering anaphylaxis unrelated to any food consumption.

Case

A 12-year-old male presented with history of urticaria, lip and facial angioedema, dyspnea, chest tightness during some basketball practices. He was initially unsure what the trigger was, but his family realized he would often eat shrimp before practice. The symptoms would start an hour later during his basketball practice. He tolerates shrimp/shellfish when there is no subsequent exercise.

When he was seen by allergy/immunology, six episodes had occurred and were always related to eating shrimp prior to exertion. He could eat other foods before exertion without symptoms. He could also eat shrimp without exertion, and no symptoms.

His exam was unremarkable and skin prick testing to shellfish was negative. Serum IgE testing to shellfish was also negative. Tryptase was normal.

Epinephrine was prescribed to carry when he is exercising. It was also recommended to avoid shrimp/shellfish for at least 4 hours prior to any exercise. Since learning about his diagnosis, the patient has not had any further anaphylaxis symptoms. He continues to eat shrimp and shellfish regularly but does not exercise afterwards and remains asymptomatic.

Food dependent exercise induced anaphylaxis has hallmark symptoms that help with diagnosis. A systematic review reported wheat is the most common culprit food. Most reactions occur within 1 hour after exercise. Interestingly, the majority of patients (80%),² were found to have positive skin prick tests to the culprit food. There are hidden allergens in foods prepared outside the home, so patients need extensive counseling regarding this risk.³ Patients should use caution when eating any

composite foods that may have their food allergen in it before exercise.⁴

This case presents an uncommon disorder that highlights the importance of a comprehensive history from the patient. Food dependent exercise induced anaphylaxis cannot be diagnosed without understanding that the combination of the food and exercise is needed for the symptoms to develop.

REFERENCES

1. **Foong RX, Giovannini M, du Toit G.** Food-dependent exercise-induced anaphylaxis. *Curr Opin Allergy Clin Immunol.* 2019 Jun;19(3):224-228. doi: 10.1097/ACI.0000000000000531. PMID: 30893086.
2. **Kulthanan K, Ungprasert P, Jirapongsananuruk O, Rujitharanawong C, Munprom K, Trakanwittayarak S, Pochanapan O, Panjapakul W, Maurer M.** Food-Dependent Exercise-Induced Wheals, Angioedema, and Anaphylaxis: A Systematic Review. *J Allergy Clin Immunol Pract.* 2022 Sep;10(9):2280-2296. doi: 10.1016/j.jaip.2022.06.008. Epub 2022 Jun 22. PMID: 35752432.
3. **Morita E, Kunie K, Matsuo H.** Food-dependent exercise-induced anaphylaxis. *J Dermatol Sci.* 2007 Aug;47(2):109-17. doi: 10.1016/j.jdermsci.2007.03.004. Epub 2007 May 15. PMID: 17507204.
4. **Skypala IJ.** Food-Induced Anaphylaxis: Role of Hidden Allergens and Cofactors. *Front Immunol.* 2019 Apr 3;10:673. doi: 10.3389/fimmu.2019.00673. PMID: 31001275; PMCID: PMC6457317.