Wheat Dependent Exercise Induced Anaphylaxis Frequently Asked Questions

This document has been developed by ASCIA, the peak professional body of clinical immunology/allergy specialists in Australia and New Zealand. ASCIA information is based on published literature and expert review, is not influenced by commercial organisations and is not intended to replace medical advice.
For patient or carer support contact Allergy & Anaphylaxis Australia or Allergy New Zealand.

Q 1: What is food dependent exercise induced anaphylaxis?

Food dependent exercise induced anaphylaxis (FDEIA) is a rare disorder that results in severe allergic reactions (anaphylaxis). This occurs if "co-factors" such as exercise take place within hours of consuming a food or drink that contains a specific food allergen, such as wheat.

Wheat dependent exercise induced anaphylaxis (WDEIA) is the most common cause of FDEIA. Other foods that trigger FDEIA include shellfish, strawberries, peaches, celery and tomatoes.

The amount of exercise that triggers anaphylaxis varies between people with FDEIA, which can include low impact activities such as walking.

WDEIA is different to:

- Anaphylaxis to wheat (wheat allergy), which can occur without exercise or other co-factors.
- Coeliac disease, which is not an allergy, has different symptoms, and does not depend on exercise or other co-factors.

Q 2: What are co-factors for food dependent exercise induced anaphylaxis?

Co-factors can lower a person's threshold for FDEIA reactions. As well as exercise, co-factors include:

- Alcohol
- Heat - such as taking a hot bath or being outside on a hot day
- Nonsteroidal anti-inflammatory drugs (NSAIDs) - such as aspirin and ibuprofen

In people with confirmed WDEIA:

- Wheat consumed on its own (without exercise or other co-factors within two to four hours) do not usually cause symptoms in most people. However, some people can have anaphylaxis after consuming wheat without any known co-factors.
- Exercise or other co-factors on their own (without consuming wheat) do not usually cause symptoms.

Q 3: What parts of wheat trigger wheat dependent exercise induced anaphylaxis?

In people with WDEIA, different parts of wheat can trigger exercise induced anaphylaxis, including:

- **A protein in wheat called omega 5 gliadin** affects most people with WDEIA. By avoiding gluten containing foods, all foods with the omega 5 gliadin protein can be avoided.
- **Other parts of wheat products** affect some people with WDEIA, in addition to omega 5 gliadin. These people need to follow a strict wheat free diet (including avoiding wheat glucose) before any exercise. They usually only need to avoid wheat and related products like spelt, triticale and semolina. Some people may also need to avoid all gluten containing grains like rye and barley.

Q 4: What tests can be used to diagnose wheat dependent exercise induced anaphylaxis?

When someone has symptoms such as hives (urticaria) or anaphylaxis when they exercise (usually not every time they exercise), their doctor may test for WDEIA.

Allergy testing (skin or blood testing) to wheat, rye and barley and blood testing for a wheat protein called omega 5 gliadin can help confirm diagnosis.

Q 5: How can people with WDEIA manage their condition?

People with confirmed WDEIA can learn to manage their condition with the help of their clinical immunology/allergy specialist.

They are generally advised to:

- Avoid wheat and related products like spelt, triticale or semolina for at least four hours before exercise (including unexpected exercise like running for a bus). Some people may also need to avoid all gluten containing grains like rye and barley.
- Avoid exercise at least four hours after consuming wheat or related products like spelt, triticale or semolina.
- Avoid alcohol and NSAIDs when consuming wheat products if these co-factors trigger anaphylaxis.
- Carry their adrenaline (epinephrine) device/s and ASCIA Action Plan for Anaphylaxis at all times.
- Read and understand food labels for food allergy.
- Tell wait staff that they have a food allergy when eating out.
- Be aware of cross contamination of food allergens when food is prepared.
- Consider not exercising alone if the trigger(s) are hard to avoid or uncertain.

Content developed November 2024

For more information go to www.allergy.org.au/patients/food-allergy

To support allergy and immunology research go to www.allergyimmunology.org.au/donate