

Allergens and Cross-Contact

Food Allergens

What are food allergens?

A [food allergen](#) is any substance present in a food that is recognized by the immune system and causes an [allergic reaction](#). While any food can cause an allergic reaction, there are nine foods in the US that cause most allergic reactions. The top nine food allergens in the US, which must be controlled, are listed below.

Crustacean Shellfish (i.e. crab, lobster, or shrimp);

Eggs;

Fish (i.e. Finfish);

Milk;

Peanuts;

Soybeans;

Tree Nuts (i.e. almonds, pecans, or walnuts); and

Wheat

Sesame

What is allergen cross-contact?

Allergen cross-contact is the unintentional addition of an allergen into a food. This occurs when allergenic substances from one food end up in another. Allergen cross-contact can occur between foods with different food allergens like finfish and crustaceans or between foods with major food allergens (finfish and crustaceans) and those without, like molluscan shellfish (i.e. clams, mussels and oysters).

An example of this that is highly applicable to seafood processors would be the introduction of crustacean allergens onto finfish fillets if processed in the same location using the same equipment. While both are considered allergens, the proteins that cause the allergic reaction are different and not everyone who is allergic to finfish would be allergic to crustaceans. Should someone consume finfish that has come into contact with crustacean allergens they could have an allergic reaction even though they are not allergic to finfish.

Controlling Food Allergens

Because of the potentially serious health implications associated with consuming allergenic ingredients it is important for processors to have programs in place to ensure that allergens are controlled to reduce the risk of illness. There are two primary methods that producers should use to control the allergens in seafood.

1. Proper Labeling

Properly labeling seafood products so consumers are aware of the potential allergenic ingredients that are present. See [NYSG Seafood Guide #1](#).

2. Cross-Contact Prevention

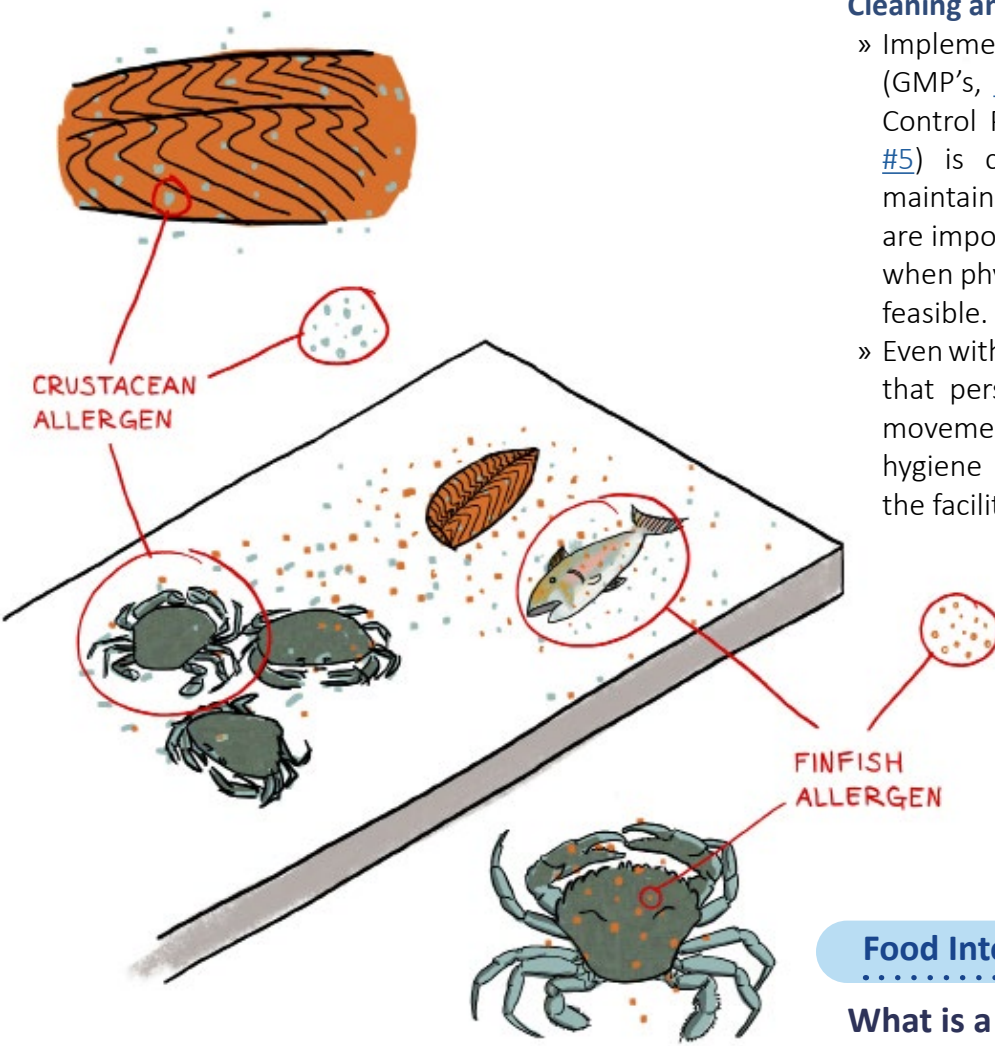
Preventing Cross-Contact to ensure that allergens from one food do not make their way into other foods. There are two main controls to consider to effectively prevent cross-contact.

Separation in Time and/or Space

[Cross-contact prevention](#) is achieved by creating separation in time and/or space between processing of foods with allergens and those without, and between foods with different allergens.

Separation by space means there is physical separation between where foods are handled, stored, and processed to reduce the chances of cross-contact.

Separation by time means processing different products on different days or at different times with adequate cleaning and sanitation procedures in between to remove potential allergens prior to processing new products. When using time to separate production of different allergens, allergen swabs and rapid ATP tests can be used to determine effective cleaning and removal of potential allergens before switching to new products.



An example of how the proteins involved in allergic reaction can transfer from one food to another is illustrated to the left.

Cleaning and Sanitation

- » Implementing Good Manufacturing Practices (GMP's, [NYSG Seafood Guide #4](#)) and Sanitation Control Procedures (SCP's, [NYSG Seafood Guide #5](#)) is crucial for ensuring that facilities are maintained in [clean and sanitary](#) conditions that are important to prevent cross-contact, especially when physical separation of allergenic foods is not feasible.
- » Even with physical separation, it is crucial to ensure that personnel are properly trained to prevent movement between production rooms and poor hygiene from transferring allergens throughout the facility.

Food Intolerance Substances (FIS's)

What is a food intolerance substance?

A food intolerance substance is similar to a food allergen but typically does not occur naturally in foods. They are added during processing and cause reactions similar to those caused by food allergens.

- » In seafood, some common food intolerance substances include sulfiting agents and yellow #5.

Controlling FIS's

Food intolerance substances are controlled similarly to allergens by ensuring that foods are properly labeled and controls are in place to prevent them from entering other foods unintentionally.

Additional Resources

More information on allergens and food intolerance substances and how they are controlled can be found in the [Fish and Fishery Products Hazards and Controls Guidance, chapter 19, appendix 9, and appendix 10.](#)

The Food and Drug Administration has drafted [Guidance for the Industry: Questions and Answers Regarding Food Allergens](#) to assist in understanding food allergens and food safety.