

# Your quick guide to: Fish and Shellfish Allergy

The total amount of seafood consumed has increased worldwide. This increase could be due to a combination of factors, including:

- Availability of fish and shellfish from countries with plentiful seafood supplies
- Access and availability in supermarkets and food outlets
- Proven nutritional values and health benefits as a rich source of protein, vitamins and minerals
- Travel and holidays to countries where seafood is a common part of the diet

## Seafood allergy

- People with seafood allergy may react to fish and/or shellfish
- It is one of the most common food allergies in adults, but can also affect children
- It may develop at any point in a person's life. It can be caused by a fish or shellfish that has been eaten before with no previous signs of a food allergy
- An allergy to either fish or shellfish is likely to be lifelong and is rarely outgrown.

Fish and shellfish make up three of the 14 food allergens that are regulated by the Food Standards Agency and must be included on food labels (visit [www.food.gov.uk](http://www.food.gov.uk) for more information).

## Fish and shellfish

Seafood is used as a collective term that includes both fish and shellfish. Shellfish is further divided into crustaceans or molluscs. This is simplified in the information below:

**Fish:** Vertebrates (they have a backbone). Most fish are covered in scales and have fins.

Anchovy, basa, cod, cuttlefish, eel, flounder, grouper, haddock, hake, halibut, mackerel, monkfish, perch, pike, pilchards, plaice, pollock, salmon, sardine, sea bass, sea bream, snapper, swordfish, trout, tuna, turbot, whitebait, whiting, tilapia.

**Crustaceans:** Invertebrates (they have no backbone) with a segmented body and

jointed legs.

Crab, crayfish, langoustine, lobster, prawn, shrimp, scampi.

**Molluscs:** Also invertebrates. They are soft bodied inside and some have a shell. Those that have a shell that opens and closes are called 'bivalve molluscs', such as mussels or scallops.

Abalone, clam, cockle, mussel, octopus, oyster, periwinkle, scallop, snail, squid, whelks, sea urchin

Fish and shellfish in the diet Reducing the risk of accidental exposure and cross contact: Whilst some forms of fish or shellfish may be visible in food, other forms may be hidden or not obvious by sight or smell. The following list of foods includes common culprits for containing fish and/or shellfish:

- Asian foods may contain fish or shellfish mixed with other foods (such as prawn fried rice) or fish and shellfish disguised in stocks or sauces
- Rice dishes such as paella, fried rice and sushi rolls may contain fish or shellfish
- Fish and shellfish can be disguised in a batter or crumb coating such as scampi, fish fingers or seafood sticks
- Stews, soups or casseroles such as seafood chowder or bouillabaisse
- Dips or pates containing fish such as taramasalata, salmon and caviar or roe (fish eggs)
- Anchovy (fish) may be present in Caesar salads, added as a pizza topping or in a sauce
- Sauces that contain fish, including Worcestershire, oyster and fish sauces which can be added to many different types of dishes, including casseroles and stir-frys
- Pizza toppings such as prawn, anchovy, calamari, mussels and fish
- Foods cooked in the same batter or oil (for example fish and chips from a takeaway shop).

This list is not exhaustive and the key is to read labels carefully and ask questions when eating away from home about the

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## Key facts:

Seafood allergy is one of the most **common food allergies in adults**, but can also affect children

Derivatives from fish/shellfish may be used in non food products like **cosmetics, skincare products, hair thickeners and shampoos**

Fish/shellfish reactions have the potential to cause **anaphylaxis**, which is the most severe form of an allergic reaction

## Allergy UK Helpline

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ingredients in prepared foods. If you are allergic to one type of shellfish or fish, it is safer to avoid all types when eating out due to the risk of cross contact.

If eating overseas, be aware that some countries may have different words for fish and shellfish. For example, lobster may be called langoustine, or squid may be labelled as calamari.

## Cross contact

Cross contact occurs when one food type comes into contact with another, and their proteins (the allergy causing substance) mix, for example fish and shellfish displayed at a fish counter in the supermarket.

Individuals who are highly sensitive to small amounts of these proteins may develop allergic symptoms from eating, inhaling or handling fish and shellfish in the home or work environment. Fish and prawn allergens can be very robust and are not easily broken down by heating or cooking, and can become airborne in cooking vapours or be present in oil used to cook fish or prawns, for example in a fish fryer or in a wok.

Cross contact has the potential to happen in any area where food is handled, for example in the home, a food processing factory or catering outlet.

Cross contact can be direct, where the allergen was included in a food and then removed (for example nuts removed from the top of a cake) or indirect, which happens when a food allergen is not directly applied (for example when the same scoop is used to serve a vanilla ice cream and an ice cream containing nuts).

## Complementary supplements may contain fish or shellfish

Glucosamine is a natural chemical compound in your body. It also comes in the form of a supplement, which is linked to joint health and may be taken as a supplement by those with arthritis. Glucosamine is derived from the outer coating of a shellfish. In addition, 'chondroitin' derived from shark cartilage may be added to these supplements.

Fish oil supplements go through an extensive process to remove impurities.

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These extended processes should eliminate the protein allergen, but this cannot be guaranteed. It is advisable for people with a fish or shellfish allergy to avoid these supplements, as they may still contain small amounts of fish proteins.

Iodine may be found in shellfish and antiseptic preparations, such as Betadine and Povidine. It is also used as a contrast agent (dye) for x-ray and imaging in hospitals. Having an iodine allergy is unrelated to a fish or shellfish allergy where you are allergic to the protein in the food.

## Non-food products containing fish/ shellfish derivatives

Derivatives from fish/shellfish may be used in non-food products such as cosmetics, skincare products, hair thickeners and shampoos which may cause contact reactions. Biodegradable drinking straws may be made from chitosan derived from seashells.

Shellfish may also be used in the processing of beer and wine, which may cause a reaction in some individuals.

## Non allergic reactions

Non allergic reaction to seafood can occur from the following sources:

### Bacterial:

**Cause:** Aeromonas, listeria, salmonella, vibrio

**Types of seafood:** Crustaceans, molluscs and fish

### Parasitic:

**Cause:** Anisakis, diphyllobothrium

**Types of seafood:** Fish and some molluscs

### Toxic:

**Cause:** Scombrotoxin: histamine fish poisoning, Marine toxins: ciguatera toxin, algae toxin

**Types of seafood:** Fish (with dark meat), reef fish, all molluscs

### Viral:

**Causes:** Hepatitis A, rota-astrovirus, small round viruses

**Types of seafood:** Crustaceans and molluscs

## Histamine fish poisoning

Histamine fish poisoning (Scombroid fish poisoning) occurs when fish that has been poorly handled or refrigerated is eaten, causing unpleasant symptoms. These symptoms can mimic an allergic reaction as they happen soon after the contaminated fish is eaten. Affected people may suffer from hives, flushing, itching, nausea, vomiting, abdominal cramps, dizziness and palpitations. Mild symptoms can be treated with antihistamines, but for symptoms that are severe you will need to seek medical assistance.

## Fish and shellfish allergic symptoms

A fish/shellfish allergic reaction occurs when the body recognises the food protein as harmful and mounts an allergic response. An allergic reaction to seafood can be mild or moderate (swollen lips, face or eyes, itching, tingling mouth, hives, rash, abdominal pain, vomiting) or severe (breathing difficulties, dizziness or collapse). Fish/shellfish reactions have the potential to cause anaphylaxis, which is the most severe form of an allergic reaction. Individuals may experience one or more of the following symptoms:

### Mild to moderate symptoms:

- Hives (rash)
- Tingling mouth
- Swelling of the lips, face, tongue or throat
- Itching
- Nausea
- Vomiting
- Abdominal pain
- Diarrhoea

### Severe symptoms:

- Difficult or noisy breathing
- Wheezing
- Persistent cough
- Chest tightness
- Hoarse voice
- Difficulty swallowing

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## How is a fish or shellfish allergy diagnosed?

Where there is cause for concern, or symptoms suggestive of an allergic reaction after eating fish or shellfish:

- Make an appointment with your GP (family doctor)
- Keep a diary of the suspect food(s) and the signs and symptoms experienced. Having photos of any visible symptoms such as swelling of the lips, eyes, or a rash is useful
- The GP will take a history and ask a series of questions which will help decide if you have a food allergy. As the signs and symptoms of food allergy are broad, there may be other explanations or diagnoses
- If a food allergy is suspected your GP may refer you to an allergist or immunologist (a doctor specialising in allergic conditions and the immune system). This is normally as an outpatient in a hospital or clinic
- At your allergy appointment with the allergy doctor, you will be asked a series of questions about the food you ate, what form it was in (for example cooked or raw), how long before the symptoms started and the symptoms you experienced

Your allergy doctor may request that you have some allergy tests to assist them to make a food allergy diagnosis. These may include one or more of the following:

**Skin Prick Testing** is where a drop of the allergen (the substance that can cause an allergic reaction) is applied to your forearm or back using a sterile instrument, allowing some of the allergen under the skin. The skin prick test is read after 15–20 minutes and recorded as positive or negative, dependent on the presence and size of the wheal response (which looks similar to a mosquito bite). This skin prick test identifies the presence of antibodies (a substance produced by the body to protect itself against things it identifies as harmful).

**Blood Tests** can be taken to test for the presence of antibodies called Immunoglobulin E (or 'IgE'). These

antibodies are produced by the body when an individual is introduced to a substance that the body identifies as harmful. Specific IgE tests can be carried out to specific types of fish or shellfish, for example prawn or salmon.

**Oral Food Challenge** is when a small amount of the suspect food is eaten in increasing doses over a set time. This process is supervised by a medical doctor in a hospital or clinic, to observe for signs of an allergic reaction or disprove an allergy you may have grown out of.

## Clinical contributions

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