

Fish Allergy and Shellfish Allergy – the facts

What are Fish Allergy and Shellfish Allergy? What are the symptoms? What should bear in mind when managing an allergy to fish or shellfish? This factsheet aims to answer these and other questions which you and your family might have.

Allergic reactions to fish and shellfish can be serious and symptoms may come on rapidly. Understandably this can cause intense anxiety among those families affected. The Anaphylaxis Campaign aims to help you to minimise risks and also provide information on where additional help and advice are available.

Fish and shellfish are biologically different. People who are allergic to shellfish such as prawns may be able to eat fish such as plaice, and vice versa. A small number of people are allergic to species in both groups.



The most important message is to seek medical advice. If you are allergic to any type of fish or shellfish, it is vital to visit your GP and seek a referral to an allergy specialist.

Throughout the text you will see brief medical references given in brackets. More complete references are published towards the end.

Allergy to fish

Common varieties of fish eaten in the UK include cod, plaice, haddock, salmon and tuna. There are many other varieties and all are capable of causing allergic reactions.

Allergy to fish often begins in childhood and is likely to be lifelong. It can also begin in adulthood (Tsabouri S 2012).

People who are allergic to one type of fish have a high chance of reacting to others. For example, a study of nine common edible fish showed that cod, salmon, pollock, herring and wolf-fish share closely similar allergy-inducing proteins and are therefore very likely to cross-react (Torres Borrego 2003). This is why people with fish allergy are normally advised to avoid all types of fish. Another good reason for this is that there is a high chance of cross-contamination somewhere along the line, for example in the fish market or on the supermarket counter where different types of fish come into contact with each other.

If you are uncertain, it is best to play safe and avoid all fish. Although some people with allergy to white fish can safely eat tuna or salmon, we strongly recommend that you discuss these issues with a specialist at an allergy clinic, as individual advice is required.

If you are allergic to fish, it's quite likely you can eat shellfish (such as prawns). This is another point on which you should get advice from an allergist.

Allergy to shellfish

Allergy to shellfish is rare in young children and usually not seen until the teenage years or adulthood. This may be a reflection of the fact that shellfish are not normally a part of the diet of young children. Like fish allergy, shellfish allergy is rarely outgrown (Boyce JA 2010).



Biologically speaking, shellfish are “aquatic invertebrates” rather than fish and can be divided into the following groups:

Crustaceans: for example crab, lobster, crayfish, shrimp, prawn

Molluscs:

- a) Bivalves (for example, mussels, oysters, razor shells, scallops, clams)
- b) Gastropods (for example, limpets, periwinkles and also snails that are found on land)
- c) Cephalopods (for example, squid, octopus, cuttlefish)

People who react to one type of shellfish (such as crab) are likely to react to other members of the same group (in this case, other crustaceans). Because the allergy-inducing shellfish proteins are very similar, some people may also react to molluscs as well. So if you react to crab, you should avoid all crustaceans and, until you have been professionally advised by an allergist, it is wise to avoid molluscs as well.

If you react to squid (a mollusc), avoid that and the rest of the cephalopods. Molluscs from the other groups, as well as crustaceans, may not necessarily present a problem, although they may do for some people. In our view it is best to avoid all shellfish until you have been professionally advised by an allergist. A special reason for being cautious is that there is a relatively high risk of cross-contamination among different types of shellfish, for example on fish counters or in fish markets.

How can I get a diagnosis of shellfish allergy or fish allergy?

Because symptoms can be severe, it is important to see your GP as soon as possible. Some GPs have a clear understanding of allergy, but allergy is a specialist subject so it is more likely that your doctor will need to refer you to an allergy clinic.

Your GP can locate an allergy clinic in your area by visiting the website of the British Society for Allergy and Clinical Immunology (www.bsaci.org).

Once you get a referral, the consultant will discuss your symptoms with you in detail as well as your medical history. The results of skin prick tests and blood tests will also help the specialist form a clear picture.

In many cases, doctors cannot easily determine whether a food allergy is mild or severe. However, there will be certain clues. For example, the severity of the reaction you suffered and the amount of fish that caused it are important factors. If you have reacted to a very small amount of fish, this suggests your allergy is probably severe. The presence of asthma – especially when poorly-controlled – has been shown to be a major risk factor for the occurrence of more severe allergic reactions.

Treating symptoms

If your allergy is thought to be severe, then you may be prescribed adrenaline (also known as epinephrine). The three adrenaline injectors prescribed in the UK are Anapen, EpiPen and Jext. These injectors are easy to use and designed for self-administration. If you are prescribed an injector, it should be available at all times – with no exceptions. Medical attention should still be sought after use.

If you are prescribed an adrenaline injector, you will need to know how and when to use it. Ask your GP or allergist for advice. You can also find help on the website relevant to the injector you carry.

- Anapen: www.anapen.co.uk
- EpiPen: www.epipen.co.uk
- Jext: www.jext.co.uk

Pre-packaged foods

Under European law, all pre-packaged food sold within the EU must declare major allergens, including the presence of fish, crustaceans and molluscs, even if they appear in minute quantities.

Eating out

In restaurants, inform staff if you have shellfish or fish allergy. Even if you think you have chosen a 'safe' dish still query the ingredients, including those in stocks and soups. Remember that everyday meals such as shepherd's pie might contain fish if Worcestershire sauce (which contains anchovies) is an ingredient.

Find out what your food is fried in and whether the oil has been used for anything else. For example, your chips could be fried in the same oil as fish, putting you at some risk.

Reactions to fish or shellfish vapour

If your allergy to fish or shellfish is particularly severe, there is a chance you may react when you breathe in the vapours from the cooked food. If you think this applies to you, your family or friends should avoid eating fish or shellfish in your presence. Your allergist may be able to guide you on whether your allergy is sufficiently serious to require this degree of caution.

For some people, this may also be an issue during airline flights if fellow passengers are served cooked fish or shellfish. When planning to fly, contact the airline in advance to determine whether any hot fish or shellfish dishes will be prepared and served on your flight. Budget airlines tend to serve a limited range of hot food, but it is still necessary to bear in mind potential problems (for example with tuna melts).

The greatest challenge is on long-haul flights. Some airlines are more helpful than others. Even if meal options are known in advance, this information can be unreliable, due to last minute catering changes.

We advise travellers to check at each of the following stages whether fish is going to be served:

- a. At the time of booking
- b. A few days before travelling
- c. At check-in
- d. At the gate
- e. When boarding the plane.

Not everyone who is allergic to fish or shellfish needs to take the above precautions, but it may be necessary in cases of severe allergy. Ask your allergist for advice on whether you are likely to react to the vapour of cooked fish or shellfish.

Dishes, products and ingredients to look out for

Scampi is the name given to a kind of small lobster. When you buy scampi, always check to see if the company has used other shellfish or even white fish. Pre-packed scampi should make the ingredients clear on the label; in restaurants, anyone needing to know the ingredients must question the staff very directly.

Caesar salad and Caesar dressings normally contain anchovies. They might not be easily seen.

Worcestershire Sauce contains anchovies. Products labelled "Worcester Sauce" may or may not contain anchovies so it is important to read the label.

Oyster sauce is used to flavour some savoury dishes, especially in Chinese cooking. Examples would be noodle stir-fries, chow mein and beef with stir-fried vegetables. Oyster sauce can also be used as a topping for some dishes.

Foreign dishes to watch out for include:

- Kedgeree
- Paella
- Bouillabaisse
- Gumbo
- Jambalaya
- Fritto Misto
- Etouffee

The above list is just a few examples. If you are not sure of any product, question catering or shop staff.

Is Omega 3 likely to trigger symptoms in people with fish allergy?

There is no definitive research which shows whether Omega 3, when derived from fish, will trigger reactions in people with fish allergy. We advise people with fish allergy to avoid Omega 3 unless they know it has been derived from a non-fish source such as linseed, flaxseed, walnut or rapeseed.

Fish gelatine

Fish gelatine is an alternative to beef or pork gelatine and also complies with some religious dietary principles. It is extracted from the skin and bones of several fishes, such as cod, pollock, salmon or tuna. When fish gelatine is used as an ingredient of pre-packed food, the law states that the presence of fish must be declared on the label. Anyone who is fish-allergic should check food labels to see whether the source of gelatine is fish or not. Products that may have fish gelatine as an ingredient include marshmallow and nougat.

Shellfish shell and skeleton derivatives

Glucosamine, used in the treatment of arthritis, is derived from the skeletons of shellfish and is unsuitable for people with shellfish allergy. Chitin, derived from shellfish shells, is used in commercial "fat absorbers" such as Chitosan HD, and should be avoided. Moisturisers can also contain shellfish-derived chitin. Some calcium supplements may contain ground oyster shells.

Other causes of symptoms

If you suspect, or know that you are allergic to shellfish or fish, the importance of seeking medical advice cannot be emphasised strongly enough. This is primarily so that you get proper guidance and treatment, but also to rule out other causes of symptoms. These include:

The cod worm: *Anisakis simplex* (also known as the cod worm) is a common parasite present in many marine fish and shellfish. Not only can it cause human infection, it can also cause allergic reactions in a very small minority of people. Some people who are reacting to *Anisakis* think they have fish allergy. Anyone reacting to a particular fish that they have previously eaten with no problem should consider the possibility that the cod worm was responsible and seek medical advice.

Histamine poisoning: Histamine can sometimes be present in spoiled fish (especially tuna and mackerel) and can cause a condition not unlike allergy called scombroid poisoning. Unlike an allergy, this would often affect everyone who ate the offending food, although some people might be more susceptible than others.

Toxic algal blooms: Shellfish sometimes absorb poison from toxic algal blooms, which appear in the waters at certain times of the year. This can cause illnesses known as amnesic, diarrhetic, paralytic and neurotoxic shellfish poisonings. These toxins will affect all who ate the affected shellfish.



References

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Reviewers

The content of this Factsheet has been Peer Reviewed by **Dr Michael Radcliffe**, Consultant in the Allergy Service at University College, London Hospitals and **Dr Shuaib Nasser**, Consultant in Allergy and Asthma at Cambridge University Hospitals NHS Foundation Trust.

Disclosures

Dr Radcliffe is a medical advisor to the Anaphylaxis Campaign.

Dr Nasser is Chair of the Standards of Care Committee, BSACI, Chair of the Eastern Region Confidential Enquiry into Asthma Deaths and Chairman of the NICE Drug Allergy Guidelines. He is also an adviser to the Anaphylaxis Campaign.

Disclaimer – The information provided in this Factsheet is given in good faith. Every effort has been taken to ensure accuracy. All patients are different, and specific cases need specific advice. There is no substitute for good medical advice provided by a medical professional.

About the Anaphylaxis Campaign – “*supporting people with severe allergies*”

The Anaphylaxis Campaign is the only UK wide charity to exclusively meet the needs of the growing numbers of people at risk from severe allergic reactions (anaphylaxis) by providing information and support relating to foods and other triggers such as latex, drugs and insect stings. Our focus is on medical facts, food labelling, risk reduction and allergen management. The Campaign offers tailored services for individual, clinical professional and corporate members. Visit our website www.anaphylaxis.org.uk.