

THE PATHCARE NEWS

IODINE ALLERGY: A MEDICAL MYTH

ARE YOU ALLERGIC TO IODINE?

The term 'iodine allergy' is used frequently, and usually refers to a history of an allergic reaction to seafood or iodinated radiological contrast media, or to a contact allergy to povidone-iodine antiseptic preparations.

IODINE IS NOT AN ALLERGEN

Iodine is present throughout our bodies. Iodine is an essential trace element required for the production of thyroid hormone, and is present in many amino acids. Iodine deficiency can lead to serious health problems, hence the importance of supplementing table salt with iodine to prevent iodine deficiency. There are numerous dietary sources of iodine including iodised salt, seafood, vegetables, meat, eggs, dairy and fruits. Iodates are also used as preservatives in bread.



IODINE ALLERGY – A MEDICAL MYTH

As iodine is a normal trace element in our bodies it is not, and cannot be, an allergen. Exactly how seafood and 'iodine allergies' became linked is unclear. Although both fish and shellfish contain iodine, it is not the iodine that is the source of seafood allergies, but rather a protein present in the specific food.

REACTIONS TO SEAFOOD CONTAINING IODINE

Allergy to seafood (fish, crustaceans and molluscs) therefore has nothing to do with its iodine content. Seafood allergy mostly involves an IgE antibody-mediated reaction to proteins in the seafood. The allergen in shellfish that most commonly causes allergic reactions is called tropomyosin. Tropomyosins are protein allergens that show cross-reactivity between crustaceans and molluscs, but not fish. Individuals with allergic reactions to fish are most likely sensitised to the parvalbumin protein in the fish, which shows broad cross-reactivity between different fish species. Individuals allergic to shellfish are unlikely to be allergic to fish and vice versa. Screening tests for seafood and fish allergies are available, as well as for the allergen-specific proteins tropomyosin and parvalbumins.

REACTIONS TO IODINE-CONTAINING ANTISEPTIC SOLUTIONS

Due to iodine's antiseptic properties it is added to many antiseptic products, for example povidone-iodine. Most reactions to the iodine-containing antiseptics are due to other allergens in the medication, and not to the iodine. The most common reaction experienced is allergic contact or irritant dermatitis. These are usually delayed hypersensitivity reactions and can be tested for by means of a patch test containing the specific antiseptic preparation.

REACTIONS TO IODINE-CONTAINING RADIOCONTRAST MATERIAL

Most of the adverse reactions to radiocontrast media are unlikely to be allergic in nature, and are most likely an inflammatory response to irritating hyperosmolar agents in the material. True allergic reactions to radiocontrast media are not common and are broadly divided into immediate and non-immediate hypersensitivity reactions. Allergic reactions to iodine-containing radiocontrast media are not related to the iodine in the drug. Allergy tests are available for specific radiocontrast media.

IN SUMMARY

- Iodine is not an allergen, and therefore allergy tests for iodine are not available.
- Seafood allergy is not iodine driven, but rather caused by specific proteins in the fish or shellfish.
- Reactions to iodinated soap and antiseptics are rare, and unrelated to the iodine in the preparation.
- Reactions to radiocontrast materials are unlikely to be an allergic reaction to iodine.

More information regarding specific allergy tests is available at your local PathCare laboratory.

Prepared by: Dr Mariana Lloyd, Chemical Pathologist, PathCare. Email: mariana.lloyd@pathcare.org.

References

1. Katelaris CH, Smith WB. 'Iodine allergy' label is misleading. *Austr Prescr* 2009;32 125-8.
2. Schabelman E, Witting M. The relationship of radiocontrast, iodine and seafood allergies: A medical myth exposed. *J Em Med* 2010; 39(5):701-7.
3. Huang S. Seafood and iodine: An analysis of a medical myth. *Allergy Asthma Proc* 2005; 26:468-9.