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Sulphite Sensitivity

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The chemicals known as sulphites are present naturally in a few foods but generally are added as preservatives to a wide range of foods, drinks, medicines and cosmetics. Sulphur dioxide is found in the air as a result of the burning of fossil fuels.

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Sulphites can cause symptoms in some people, either by acting as a 'chemical irritant' or because the person is hypersensitive to sulphites. Asthma sufferers are particularly prone, particularly those with more severe asthma. The incidence of sulphite sensitivity in the general population is thought to be less than 2%, but this rises to between 5 and 13% in asthmatics.

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One way in which ingested sulphites can trigger symptoms is that when they meet the acid in the stomach or mouth, sulphur dioxide gas is released. This can be inhaled, leading to irritation of the airways and wheezing. However, sulphites can cause a variety of different symptoms in other ways; the mechanism for this is not understood.

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Other symptoms that can be caused by sulphite hypersensitivity include rashes (including urticaria - nettlerash), itching skin, swelling of lips, eyes, mouth or throat (angioedema), burning mouth, abdominal pain, diarrhoea and (rarely) anaphylaxis.

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The most common symptoms are wheezing (mainly in asthmatics) and skin symptoms, either from ingestion of sulphites, or skin contact with them from medications, cosmetics or at work or high levels of air pollution.

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Allergy UK - Planwell House - LEFA Business Park - Edgington Way - Sidcup - Kent - DA14 5BH
Tel: 01322 619898 Web: www.allergyuk.org

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Testing for sulphite sensitivity

Although there are a few reports of positive skin tests to sulphites, it is not generally thought to be due to 'true allergy'. This means that allergy blood tests or skin tests for sulphite allergy are not generally helpful, and negative tests certainly do not rule out sulphite sensitivity. Patch tests can be helpful in patients with eczema / dermatitis.

The diagnosis is generally made by taking a full history and making the link between the ingestion of sulphite containing foods, drinks or medicines, and the production of symptoms. If the symptoms settle on a low-sulphite or sulphite-free diet, then this would support the diagnosis.

Occasionally, an oral challenge may be performed. The patient is given sulphites in capsule form and observed for the onset of symptoms; any reaction is compared to a similar test using placebo capsules. These tests are carried out under medical supervision.

Treatment of sulphite sensitivity

Once the diagnosis has been made, treatment consists of avoidance of sulphite containing foods, medicines and cosmetics. The degree to which this must be done depends on how sensitive the individual is. Some people who suffer mild sensitivity will only need to avoid foods containing the highest sulphite content; others with more severe sensitivity will need to be scrupulous in avoiding even trace amounts in foods, medicines and cosmetics.

Symptoms arising from exposure to sulphites are treated according to the symptom (e.g. antihistamines or steroids for rashes, inhalers for asthma, adrenaline for severe reactions).

Labelling of sulphites

EU food labelling rules require pre-packed food sold in the UK to show clearly on the label if it contains sulphur dioxide or sulphites at levels above 10mg per kg or 10mg per litre (or if one of its ingredients contains it). Bear in mind that non-prepackaged foods (e.g. 'loose' foods or foods prepared on the premises, including take-aways and restaurant food) are not covered by this labelling requirement.

The following food additives contain sulphites; the same chemicals may be found in medications or cosmetics:

E220	Sulphur dioxide
E221	Sodium sulphite
E222	Sodium hydrogen sulphite
E223	Sodium metabisulphite
E224	Potassium metabisulphite
E226	Calcium sulphite
E227	Calcium hydrogen sulphite
E228	Potassium hydrogen sulphite
E150b	Caustic sulphite caramel
E150d	Sulphite ammonia caramel

Foods likely to contain sulphites

This list is not exhaustive. Sulphites are largely used to kill bacteria, yeasts and moulds in food and drinks, and to prevent 'browning'. Their main use is in wine and alcoholic drinks, fruit including dried fruit (may be sprayed to prevent deterioration), salads, fruit juices, prepared potato products (e.g. frozen chips) and shellfish.

Examples of foods that may contain sulphites include:

- Bakery goods
- Soup mixes
- Jams
- Canned vegetables
- Pickled foods and vinegar
- Gravies
- Dried fruit
- Potato crisps
- Beer, wine and cider
- Vegetable juices
- Sparkling grape juice
- Bottled lemon juice and lime juice
- Tea
- Many condiments (bottled sauces etc)
- Molasses
- Fresh or frozen prawns
- Guacamole
- Maraschino cherries
- Dehydrated, pre-cut or peeled potatoes
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Sulphites in medicines

Some injection drugs (especially local anaesthetics), creams and lotions and a few tablets and eye drops contain sulphites (generally sodium metabisulphite) as a preservative. If you are sulphite sensitive, ask your pharmacist to check that your medicine is sulphite-free. Check the ingredients on the patient information leaflet for any medicines you are given, including those that you buy yourself over-the-counter. Tablets and injection medicines that contain sulphites may cause general symptoms in a sulphite-sensitive person. Creams and lotions generally cause contact skin rashes / dermatitis.

Some adrenaline injections and auto-injectors contain sulphites but there is currently no evidence that this has caused problems and adrenaline should be given as planned in an emergency.

Sulphites in cosmetics

Sulphites may be present in hair colours or bleaches, skin lighteners, fake tanning lotions, body lotions, shampoos and shower washes, moisturizers etc.

Bibliography and further information:

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