

## Sulphites

Sulphites are substances that are found naturally in some foods and are often used as food additives. This factsheet is for anyone who has questions about sulphites, including whether reactions are caused by allergy or sensitivity, how to get a diagnosis, how to manage symptoms and which foods and products contain sulphites.

### What are sulphites?

The term “sulphites” refers to a group of substances including sulphur dioxide and sodium or potassium metabisulphite. They are found naturally in some foods but are also used as preservatives and bleaching agents – they are added to foods and drinks to slow down how fast they go off and to lighten their colour.

Most people who have reactions to sulphites have sensitivity reactions. This type of reaction does not involve the immune system so it is not the same as an allergy, but it can cause allergy-type symptoms that can sometimes be serious. They can affect your breathing, for example.

### How do sulphites cause reactions?

Researchers have suggested a few different ideas including those listed below, but it is still not fully understood exactly how sulphite sensitivity happens.

- Breathing in the sulphur dioxide when eating food containing sulphites could irritate the airways and cause breathing problems.
- Sulphites might affect part of the nervous system called the parasympathetic nervous system, which can lead to tightened airways.
- People who have low levels of an enzyme called sulphite oxidase may have too much sulphite in their bodies, causing their airways to tighten.
- Sulphites might trigger the release of chemicals such as histamine in some people, which can cause symptoms that affect the airways.

- Chemicals in the body called prostaglandins and leukotrienes might play a role in constricting the airways, brought on by sulphites.

More research is needed to understand exactly how sulphites cause sensitivity reactions. The symptoms of sensitivity reactions differ greatly from person to person, and there is probably more than one cause.

Sensitivity to sulphites is known to be more common in people with asthma.

## What are the symptoms of sulphite sensitivity?

Common symptoms include:

- wheezing
- tight chest
- cough
- a red raised rash (known as hives or urticaria)
- stomach pain or vomiting
- worsening eczema.

## Getting a diagnosis

If you think you may have had a reaction to sulphites, see your GP who may be able to make a diagnosis by discussing your reactions and medical history with you, or they may need to refer you to a specialist.

The specialist will discuss your medical history with you, but there are no blood or skin allergy tests to diagnose sulphite reactions.

They may recommend a food exclusion and reintroduction diet. This involves avoiding foods high in sulphites for a set period of time, then slowly re-introducing the foods to see if they cause symptoms. Food exclusion and reintroduction diets should be supervised by a dietitian or allergy specialist who can make sure you do this safely and are not missing out on essential nutrients.



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Occasionally, a specialist might suggest a "challenge". This is where you're given small amounts of sulphites contained in capsules or solutions every 20 to 30 minutes, and the dose is increased each time. Once a reaction happens, the specialist may measure how much your breathing is affected using lung function tests, and you may be given inhaler medicine to treat the reaction. If you don't have a reaction at all, sulphite sensitivity might be ruled out.

## Treating sensitivity reactions

Sensitivity reactions don't typically respond to antihistamines so the best way to manage sulphite sensitivity is to avoid sulphites.

If you have asthma, make sure it is well-controlled and use your inhaler if foods make you wheezy.

## Can sulphites cause anaphylaxis?

There are a very small number of reports of serious allergic reactions to sulphites, including anaphylaxis. Researchers are uncertain about whether these reactions are immediate type allergic reactions that involve the IgE immune system (most food allergies are this type) or are caused through a different mechanism.

If you think you may have an immediate type allergy to sulphites, see your GP who can refer you to a specialist allergy clinic. They can find a clinic in your area from the [British Society for Allergy and Clinical Immunology \(BSACI\)](#).

Read more about the [symptoms of anaphylaxis](#) and [what to do in an emergency](#).

## Avoiding sulphites

If you have sulphite sensitivity, you will need to avoid foods containing sulphites. Read the ingredient lists on food packets carefully. Sulphites are included in the list of top 14 major food allergens in the UK. This means they must be emphasised on ingredients labels, in bold for example.



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In the UK, sulphites must be declared on the label when they're present in pre-packed food at a level of more than ten parts per million. This is because studies have found that amounts below this do not cause symptoms in people with sulphite sensitivity. These rules only apply where sulphites have been added deliberately to the food, as opposed to when they appear naturally.

Read the ingredient list every time you buy a product as manufacturers change their recipes often.

## Hidden sulphites

Sulphites might not be listed on the ingredients label of products where they have been used as a bleaching agent. This is because the sulphites are only present in very tiny amounts (less than ten parts per million).

Foods that are often bleached with sulphites include:

- white flour
- frozen chips
- crisps
- fruits used to make jam.

Whilst studies suggest that tiny amounts don't cause symptoms, sometimes people with sulphite sensitivity tell us that they have symptoms if they eat these foods.

## When eating out

Restaurants, cafes, hotels, takeaways and other catering businesses are required by law to provide information on major allergens, including sulphites. Ask staff directly if the food you'd like to buy contains sulphites at more than ten parts per million.

[Read about shopping and preparing food.](#)

## What are the different types of sulphites?

Sulphites need to be declared by their chemical name on food labels, and their E numbers might be used as well.

Look out for any of the following:

- Sulphites
- Sulphur dioxide (E220)
- Sodium sulphite (E221)
- Sodium hydrogen sulphite (E222)
- Sodium metabisulphite (E223)
- Potassium metabisulphite (E224)
- Calcium sulphite (E226)
- Calcium hydrogen sulphite (E227)
- Potassium hydrogen sulphite (E228)

## Which foods and drinks contain sulphites?

Some foods that are likely to contain sulphites include:

- Processed meats including sausages and burgers
- Soft drinks, fruit juice concentrates, carbonated drinks, cordials and vegetable juices
- Dried fruits and vegetables
- Fruit jams
- Wine, beer and cider
- Pickled foods and vinegar
- Guacamole
- Dehydrated vegetables such as dried onions
- Maraschino cherries and glacé cherries
- Coconut milk
- Salad dressings
- Ready-made mustard
- Dehydrated, pre-cut or peeled potatoes
- Frozen raw potato products
- Fresh or frozen prawns
- Tofu/bean curd

## Some fruits are sprayed with sulphites

These include the following, among others:

- Grapes
- Sultanas
- Apricots

## Which medicines can contain sulphites?

Adrenaline auto-injectors (AAIs) contain sodium metabisulphite. If you have been prescribed adrenaline for an allergy, the Medicines and Healthcare products Regulatory Agency (MHRA) advise that you should use your auto-injector in an emergency even if you have a sulphite sensitivity. This is because the need for adrenaline far outweighs any potential for the sulphite to cause a problem.

[Read the MHRA statement on the use of sodium metabisulphite in adrenaline.](#)

As well as adrenaline, other medicines can contain sulphites, including:

- Paracetamol tablets
- Local/dental anaesthetics
- Aminoglycoside antibiotics
- Antifungal cream
- Haemorrhoid creams
- Corticosteroid creams
- Corticosteroid injections
- Eye drops

If you are prescribed a medicine or are due to have medical treatment or a vaccination, always tell the health professional or pharmacist that you are sensitive to sulphites.

## Which cosmetics can contain sulphites?

- Hair dyes
- Tanning lotions
- Face creams
- Body washes
- Hair sprays
- Perfumes
- Blushers and bronzers

## Key messages

- If you have any symptoms you think are brought on by sulphites, see your GP.
- Symptoms are usually caused by a sensitivity reaction.
- Researchers are uncertain about whether sulphites can cause immediate type IgE allergies.
- Read labels carefully and avoid foods and medicines containing sulphites.
- If you have asthma, make sure it is well managed.

## Feedback

Please help us to improve our information resources by sending us your feedback at: -

<https://www.anaphylaxis.org.uk/information-resources-feedback/>

## Sources

All the information we produce is evidence based or follows expert opinion and is checked by our clinical and research reviewers. If you wish to know the sources we used in producing any of our information products, please contact [info@anaphylaxis.org.uk](mailto:info@anaphylaxis.org.uk) and we will gladly supply details.

## Reviewer

The content of this factsheet has been peer-reviewed by Dr Andrew Whyte, Consultant Allergist and Immunologist, Derriford Hospital, Plymouth.



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## Disclosures

We are not aware of any conflicts of interest in relation to the review of this factsheet.

## Disclaimer

The information provided in this factsheet is given in good faith. Every effort is 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 Anaphylaxis UK

Anaphylaxis UK is the only UK-wide charity solely focused on supporting people at risk of serious, life-threatening allergic reactions. We provide information and support to people living with allergies through our free national helpline. We also fundraise to achieve our ultimate aim, to create a safer environment for all people at risk of serious allergies. Visit our website [www.anaphylaxis.org.uk](http://www.anaphylaxis.org.uk) and follow us to keep up-to-date with our latest news. We're on Facebook @anaphylaxisUK, LinkedIn, Instagram @anaphylaxisUK, Twitter @AnaphylaxisUK and YouTube.