

## Sulphites

Sulphites are preservatives added to food and drinks to extend shelf life. The term “sulphites” is a general term for a group of chemicals including sulphur dioxide and sodium or potassium metabisulphite.

In sensitive people, sulphites can cause unpleasant symptoms including lung irritation and asthma. This is not normally an allergic response. Although allergic reactions to sulphites can occur, we believe this to be extremely rare.

Sensitivity to sulphites is more common in people with asthma.

This Factsheet is written to offer help and information to people who suffer symptoms triggered by sulphites, whether those symptoms are allergic or non-allergic. The overall term sulphite sensitivity will be used.

A visit to your GP is the first step to gaining an understanding of your symptoms. A referral to a hospital specialist may be required.

### Non-allergic symptoms caused by sulphites

A true allergy occurs when a person’s immune system reacts inappropriately to a food or some other agent. Most cases of sensitivity to sulphites are non-allergic. Sulphites work as food preservatives by releasing the gas sulphur dioxide. This gas can cause the airway to become irritated and constricted. In such cases, this is not a response of the person’s immune system and is therefore not an allergic reaction.

Common non-allergic symptoms include wheezing, tight chest and cough. People can also experience nettle rash (otherwise known as hives or urticaria) and gastro-intestinal symptoms. Sulphites can also aggravate eczema. Those symptoms are similar to those triggered during an allergic response, which underlines why it is important to get a correct medical diagnosis.

### Diagnosis of non-allergic symptoms caused by sulphites

If your symptoms triggered by sulphites are non-allergic, standard allergy testing will not be effective. Your GP may be able to reach a diagnosis by discussing your case with you, or he/she

may need to refer you to a specialist.

A food exclusion and reintroduction diet may be suggested. This involves the removal of foods high in sulphites for a set period of time. The foods are slowly re-introduced to see if they cause symptoms. This should be carried out under supervision by a registered dietitian, who can help to ensure it is done safely so that key nutrients are not being left out of the diet.

### Treatment of non-allergic symptoms caused by sulphites

Non-allergic symptoms do not respond to antihistamines. The best line of defence is avoidance of foods containing sulphites. If you have asthma, make sure it is well-controlled and use your inhaler if foods make you wheezy.

### True allergy to sulphites

As stated previously, true allergy occurs when the immune system reacts inappropriately to a food or some other agent.

In the very rare cases of true allergy to sulphites, the symptoms could be the same as those caused by any food allergy. The symptoms of a food allergy can come on rapidly. These may include nettle rash (otherwise known as hives or urticaria) anywhere on the body, or a tingling or itchy feeling in the mouth.

More serious symptoms of a food allergy may include:

- Swelling in the face, throat and/or mouth
- Difficulty breathing
- Severe asthma
- Abdominal pain, nausea and vomiting

The term for this more serious form of allergy is anaphylaxis. In extreme cases there could be a dramatic fall in blood pressure (anaphylactic shock). The person may become weak and floppy and may have a sense of something terrible happening. This may lead to collapse and unconsciousness.

See our Anaphylaxis Factsheet for more details about anaphylaxis and its treatment.

<https://www.anaphylaxis.org.uk/fact-sheet/anaphylaxis-the-facts/>

## Diagnosis of true allergy to sulphites

Standard allergy tests such as skin prick tests and blood tests may help form a diagnosis in cases of true allergy to sulphites. However, in most situations the tests are negative and the only way to be certain that there is a true allergy is by a challenge - which is where you are exposed to small quantities of sulphites. This should only ever be done under careful supervision in a specialist allergy clinic. The allergy team will want to know about your history - what symptoms have occurred and whether you have any other allergic conditions such as asthma.

## Treatment for a severe allergy [anaphylaxis]

Anaphylaxis is a medical emergency for which an injection of adrenaline is required as a matter of urgency. Only very rarely can anaphylaxis be triggered by sulphites. If you are one of those extremely unusual cases, it is important to ask your GP to refer you to an allergy specialist. Apart from the fact that anaphylaxis is a serious condition requiring good medical advice, you will also need to raise the question of whether adrenaline is safe for you to use - as the adrenaline injectors prescribed in the UK all contain sodium metabisulphite as a preservative.

If you suffer symptoms caused by sulphites, and also carry adrenaline for an allergy, you may wonder whether it is safe to use your injector in the event of an attack of anaphylaxis. The advice of the Medicines and Healthcare products Regulatory Agency (MHRA) is that you should not be deterred from using your injection for allergy in an emergency. This is because the need for adrenaline in anaphylaxis far outweighs the potential for the sulphite content to cause a problem.

We strongly advise that if you are at risk of anaphylaxis – whatever the cause – you should discuss all this with an allergy specialist. Ask your GP to refer you.

## What food and drinks contain sulphites?

The following list contains some of the foods that are likely to contain sulphites:

- Processed meats including sausages and burgers
- Soft drinks, fruit juice concentrates, carbonated drinks, cordials and vegetables juices
- Dried fruits and vegetables
- Wine, beer and cider
- Pickled foods and vinegar
- Guacamole
- Dehydrated vegetables such as dried onions
- Maraschino cherries and glace 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

Fruits that can be sprayed with sulphites include, among others, grapes, sultanas and apricots.

## Avoiding sulphites

Whether your symptoms are allergic or non-allergic it is important to read food labels carefully and avoid foods containing sulphites.

Under the UK's food labelling regulations, sulphites must be declared on the label when present in pre-packed food at a level of more than ten parts per million. These labelling rules apply only where sulphites have been deliberately added to the food, as opposed to when sulphites appear naturally in foods.

The regulations require sulphites to be declared by their chemical name. E numbers are permitted but the chemical name and function must also be used. An example would be "Preservative E223: sodium metabisulphite".

You may see any of the following terms on food labels:

- 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)

In the case of loose products (such as food sold in restaurants, takeaways and other catering establishments, and at deli and bakery counters) the staff are compelled under UK law to have systems in place enabling customers to find out information about the presence of certain allergenic ingredients in the foods provided. These include sulphites. If you are allergic to a food, you must always question staff directly about ingredients.

As well as adrenaline, some other pharmaceutical drugs also contain sulphites. If you are prescribed a medicine or are due to have any medical treatment or vaccination, always declare that you are sensitive or allergic to sulphites.

## Key points

- If you have any symptoms triggered by sulphites, see your GP
- In the vast majority of cases, the cause is a non-allergic response - where the gas sulphur dioxide causes the airway to become irritated and constricted
- A true allergy is unlikely but remains possible in rare cases
- Read food labels carefully and avoid foods containing sulphites
- If you have asthma, make sure it is well-controlled. Get advice from your local surgery on this

## 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

This article has been reviewed by Dr Isabel Skypala, Clinical Lead for Food Allergy, Royal Brompton and Harefield NHS Foundation Trust.

## 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 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 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 and local support groups. We also campaign and 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 @anaphylaxixUK, LinkedIn, Instagram @anaphylaxisUK, Twitter @AnaphylaxisUK and YouTube.