



Natural toxins

Food is packed with natural chemicals that are essential to our health, such as vitamins and minerals. But some foods contain potentially harmful substances called natural toxins.

Most natural toxins occur naturally in just a few foods. Other natural toxins are produced when the food is damaged, or when moulds or other fungi grow on the food.

These are some of the foods that can contain natural toxins.

Red kidney beans

Dried red kidney beans contain natural toxins called lectins, which can cause stomach aches and vomiting. These are destroyed if you soak the dried beans for at least 12 hours and then boil them vigorously for at least 10 minutes in fresh water. Tinned kidney beans have already had this process applied and so can be used without further treatment.

Green potatoes

All potatoes contain natural toxins called glycoalkaloids, usually at low levels. But higher levels of glycoalkaloids can be found in green parts of potatoes, sprouted potatoes and potatoes stored in light. Severe glycoalkaloid poisoning is very rare, but it's important to store potatoes in a dark, cool and dry place and not to eat green or sprouting parts. If you've removed the green parts and the potatoes still taste bitter, don't eat them. And if you come across a green potato crisp, it's probably best not to eat it.

Apples

Mouldy or damaged apples may contain a toxin called patulin, particularly around the bruised or damaged part of the fruit. Don't eat mouldy or damaged apples and don't use them to make apple sauce or juice.

Shellfish

Toxins formed by algae in the sea and fresh water are called algal toxins. Shellfish such as mussels, scallops and oysters are more likely to contain these toxins than other fish.

In the UK, paralytic shellfish poisons (PSP), amnesiac shellfish poisons (ASP), and the less toxic diarrhetic shellfish poisons (DSP) are the most common shellfish toxins.

During the period of greatest risk (between April and September) notices are posted in areas with high PSP, DSP and ASP levels warning people not to eat shellfish caught locally. Fishing may also be prohibited.

Liver and Vitamin A

Vitamin A is essential in everyone's diet but if you're pregnant and you consume excessive amounts the developing foetus may be harmed. The Government's Chief Medical Officer has advised women who are trying to conceive to avoid taking Vitamin A supplements. As a precautionary measure, these women are also advised to avoid food rich in vitamin A, such as liver and liver products.

Mouldy foods

Moulds are usually visible, but toxins produced by moulds and other fungi – mycotoxins – are invisible and can penetrate food. So even if you remove mould from food, it might still contain mycotoxins. The safest option is to throw mouldy food away.

Moulds can grow on most types of food if the conditions are right. They grow fastest in warm, moist conditions. If bread is kept in a warm environment, mould will form after only a few days. The best place to store bread is in a bread bin or cool cupboard. Keeping it in the fridge will help prevent moulds forming, but can make it go stale more quickly.

Cheeses with an external mould coating, such as Brie and Camembert, or those with mould running through them, such as Stilton and Danish Blue, are safe to eat in normal quantities because the moulds have been deliberately introduced. However, if mould grows on cheese that isn't supposed to be mouldy, you shouldn't eat it.

Avoiding natural toxins

Usually natural toxins will only be harmful if you consume them in large quantities over a long period of time. But you can help to reduce the amount you eat by doing the following things.

- Eat a wide variety of foods.
- Throw away foods after the 'Use by' date.
- Store food properly.
- Don't assume that if something is 'natural' it automatically means it's safe.
- Prepare and cook foods properly.
- Throw away bruised, damaged or discoloured foods.
- Throw away any foods that don't smell or taste fresh, or have an unusually bitter taste.

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