

Radioactivity in food

Radioactivity has been around since the earth was created and it exists naturally in the atmosphere, soil, seas and rivers. Inevitably some of this gets into the food we eat.

Radioactivity occurs naturally in all food. Natural radioactivity can be transferred into food in different ways, such as:

- into crops from rocks and minerals present in the soil
- drinking water can pick up radioactivity from the earth
- fish and shellfish can take up radioactivity from the water or sea floor

Artificial radioactivity can also get into food. This can happen when radioactive materials are discharged into the environment from civil or military nuclear operations. Artificial radioactivity then passes through the food chain in the same way as natural radioactivity.

Radioactivity and our bodies

Radioactivity can damage our body's DNA. Low doses of radiation can be repaired but higher doses can change our body's cells. When this happens, there may be an increased likelihood of developing cancer.

How radioactive waste and food safety are assessed

In the UK, there are strict laws on:

- how radioactive waste must be disposed of
- the levels of radiation that it is acceptable for people to be exposed to

Businesses and organisations needing to get rid of radioactive waste (for example from nuclear sites, research institutions and hospitals) are only given a permit once this has been assessed.

We assess how plans to dispose of radioactive waste could affect our food. Other ways in which people can be exposed to radioactivity in the environment are also considered before a permit can be issued. This is done by regional environment agencies.

[The Environment Agency](#) are responsible for applications to dispose of radioactivity in the environment.

[Natural Resources Wales](#) are responsible for applications to dispose of radioactivity in the environment.

[Northern Ireland Environment Agency](#) are responsible for applications to dispose of radioactivity in the environment.

We also provide expert scientific advice to other organisations on how radioactive material in food affects people.

Producers of radioactive waste have to monitor the environment around their site. The Government also carries out secondary checks.

Levels of radioactivity in cows' milk are closely monitored because this is a highly effective way to measure radioactivity around nuclear sites. Most sites have grazing cows nearby and any radioactive elements they eat will usually pass into their milk.

Fish and shellfish, which can consume radioactive elements in the water, are monitored after being caught.

Routine checks are carried out for certain foods that are imported into the UK from countries that have high levels of radioactivity. This could be as a result of nuclear accidents.

[Discover our research on radioactivity in food and the environment](#)