

Should we worry about bisphenol A (BPA)?

- Bisphenol A (BPA) is a chemical used to produce polycarbonate plastic and epoxy resins.
- Polycarbonate plastic can be used to make water bottles.
- Epoxy resins are used to coat the inside of food and drinks cans.
- Trace amounts of BPA can get into our bodies, mainly from foods or drinks.
- There are concerns about the safety of BPA ...
- ... but the European Food Safety Authority concluded that there is not enough evidence that BPA is harmful at low levels.
- As a precaution the European Union has banned the use of BPA in baby bottles.



What is BPA?

BPA is a chemical mainly used in the manufacture of polycarbonate (a type of plastic) and epoxy resins. Polycarbonate plastic is durable, lightweight and has good shatter resistance. It is used in a wide variety of products, including CDs, DVDs, medical devices and sheets for roofing and glazing. It is also used to make food containers such as re-usable water bottles and plastic plates and cups.

Epoxy resins are used in paints, coatings, laminates and adhesives. They are also used to coat the inside of food and beverage cans. This helps to prevent the metal of the can from rusting and contaminating the food. The epoxy resin lining also helps to protect the food from bacterial contamination.

Should we worry about BPA?

In recent years, there has been a lot of controversy concerning the safety of BPA.

The safety of BPA is so controversial because most of the tests have been carried out on animals, and the results don't necessarily translate to humans. Another reason for the controversy is that humans are only exposed to very low levels of BPA. In practice it is difficult for scientists to show what effects (if any) BPA has at such low levels. Scientists agree that more research is needed to fully understand how BPA may affect human health.

Did you know?

BPA is used in the surface coatings on thermal paper, often used for receipts.



How does BPA get into our bodies?

There may be residues of BPA (left over from the manufacturing process) in some items that are made using polycarbonate plastic or epoxy resins. These items include products that contact food or drinks, such as plastic containers and cans. Trace amounts of BPA can 'leach out' of the container and get into the food or drink. This means that very small amounts of BPA can end up in our bodies. This is at the root of the concern, because BPA is a potential endocrine disruptor.

Is BPA an endocrine disruptor?

An endocrine disruptor is a substance that can interfere with the body's hormone system and thereby cause harm. The endocrine system produces hormones that regulate various human functions, including metabolism, fertility, growth and development, organ function, and mood. BPA may be able to interfere with the hormone system because it weakly mimics the female sex hormone oestrogen. Many tests have been carried out to try to confirm whether BPA causes harm in this way.

However, this remains a controversial issue. Some studies have shown that BPA can damage fertility in animals. There is limited evidence that BPA could have the same effect in humans, so it is classified in Europe as 'suspected of damaging fertility'.

What is being done about BPA?

The European Union reviewed the scientific results and data from various relevant studies. They decided that there is a possibility that BPA is harmful but that this has not been shown conclusively. However, as a precaution, the EU has taken measures to protect the most vulnerable people.

In 2011 the EU banned the use of BPA in baby bottles. Babies are more vulnerable than adults because they are much smaller and their metabolic systems are not fully developed. They are also fed frequently from plastic bottles.

The EU also imposed a 'specific migration limit' for BPA. This means that any companies that use BPA have to carry out safety tests. The tests need to show that BPA does not get into the food at levels that are too high.

Safety reviews

In 2006 the European Food Safety Authority (EFSA) set the Tolerable Daily Intake (TDI) for BPA. The TDI is the amount of a substance that is safe to consume every day over a lifetime. The calculation also includes a 'safety factor', which is usually 100-fold. Due to new scientific studies which questioned the safety of BPA, the TDI was reviewed by EFSA in 2008 and in 2010.

Did you know?

Foods such as soya beans and pomegranates also contain trace amounts of 'natural' chemicals that can mimic oestrogen. These chemicals are known as 'dietary oestrogens' or 'phytoestrogens'.



Did you know?

France has gone a step further and banned the use of BPA in all food contact materials.

Did you know?

The TDI for BPA is 0.05 mg per kilo of bodyweight per day. This is equivalent to 3 mg per day for a person who weighs 60 kg. EFSA estimated that the actual amount of BPA consumed by most people is much lower than this.

Both reviews concluded that there was insufficient evidence that the TDI needed to be made lower. They came to this conclusion because the possible harmful effects of consuming such low levels of the BPA have still not been confirmed.

In 2012 the European Commission called for EFSA to carry out another review of BPA.

What are the alternatives?

Due to the health concerns and uncertainties, there are now some 'BPA free' products on the market. Most of these products are made from plastics or resins other than polycarbonate and epoxy resins. There are several plastics which can be used as substitutes for BPA containing-polycarbonate. However, it is not as straightforward to replace the epoxy resins used in can coatings.

Some scientists are also concerned that we may not know as much about the safety of the potential alternatives as we do about BPA.

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