

# Questions and answers about Endocrine Disruption and Bisphenol A

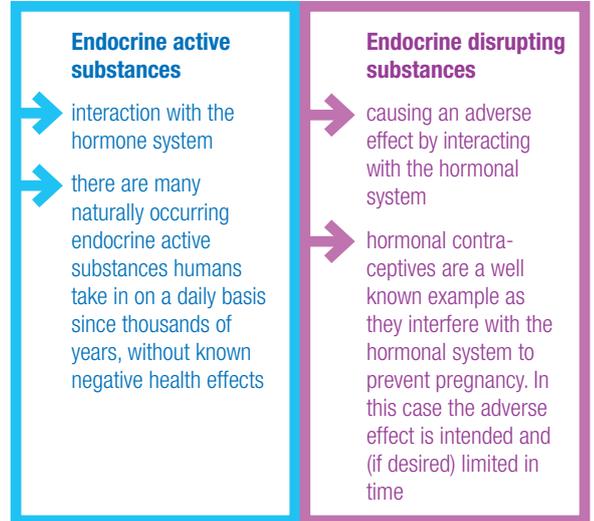
There is an ongoing debate and public concern about effects of endocrine disruptors (EDs) on human health and the environment. In that context, the substance Bisphenol A (BPA) is often mentioned as an example; the public seems to be convinced that “BPA is an ED”. This document provides factual background and explains why Bisphenol A in realistic exposure levels is not a threat to the endocrine (hormonal) system.

### What is the endocrine system?

The endocrine system is commonly known as the hormonal system. Hormones are important messenger-substances produced in the body's glands. Hormones regulate, among others, metabolic processes, growth, reproduction and development in a very complex way. The endocrine system is naturally prepared to cope with the various external and internal factors influencing the hormonal system.

### What are endocrine active substances?

Substances that can interact with the hormonal system are called endocrine active substances. Such substances naturally occur e.g. in carrots, soy beans or coffee. There are also some synthetic chemicals that are endocrine active.



### What are endocrine disrupting substances?

There are some endocrine active substances which can induce an adverse effect by influencing the intact hormone system. These substances are called endocrine disruptors.

## Factors influencing the endocrine system



The widely accepted WHO definition of an endocrine disruptor stipulates:

**“An endocrine disruptor is an exogenous substance or mixture that alters function(s) of the endocrine system and consequently causes adverse health effects in an intact organism, or its progeny, or (sub)populations.”**

You can find it on the WHO-homepage under Programmes – International Programme on Chemical Safety (IPCS) – Global assessment of the state of science of endocrine disruptors – in chapter 1 [http://origin.who.int/ipcs/publications/new\\_issues/endocrine\\_disruptors/en/](http://origin.who.int/ipcs/publications/new_issues/endocrine_disruptors/en/)

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**Which factors determine whether an endocrine active substance causes harm?**

For risk assessment of endocrine active substances it is important to understand and consider the intrinsic hazard of the substance, its power to produce an effect, and the real extent of exposure to the substance.

**Hazard:** the intrinsic ability of a substance to cause harm.



**Potency:** the “power” of a substance to induce effects: at similar dosages a highly potent substance produces a greater effect than a substance of low potency.



**Exposure:** the level with which humans and the environment come in contact with the substance



**Is BPA an endocrine disrupting substance?**

BPA shows weak estrogen-like activity, and can therefore be considered an endocrine active substance. There is reliable scientific evidence that Bisphenol A does not cause endocrine disrupting effects at realistic human intake levels. Also the European Food Safety Authority EFSA stated that “based on the WHO criteria, it was not considered possible to conclude that BPA is an endocrine disruptor.”

**BPA**  
No endocrine disrupting effects from BPA at realistic human intake levels.

**BPA - a substance of very high concern – what does that mean?**

Identification of “substances of very high concern” (SVHC) under REACH is a hazard-based approach, i.e. it is based on the intrinsic properties of a substance, without considering real life exposure. An identification as SVHC due to alleged ED properties for human health and the environment therefore does not determine whether current uses of BPA pose a risk.

**Are consumers at risk from typical BPA-exposure?**

No, they are not. As result of its comprehensive assessment of all available scientific data on BPA “EFSA’s scientific experts concluded that BPA poses no health risk to consumers of any age group (including unborn children, infants and adolescents). Exposure from the diet or from a combination of sources (diet, dust, cosmetics and thermal paper) is considerably under the safe level (“tolerable daily intake” or TDI) of BPA in food.”

You can find it on the EFSA homepage under Discover – Discover all subjects – Bisphenol A - FAQ | <https://www.efsa.europa.eu/en/topics/topic/bisphenol>

BPA as a substance is not available for public sale. It is almost exclusively used as a chemical intermediate, that means: BPA is entirely chemically transformed into new substances/materials, and consumed during the industrial process. The resulting materials, mainly plastics and coatings, only contain very low amounts of remaining BPA. The materials are used to make a wide range of industrial, professional and consumer products. From a BPA-perspective, these products are safe for consumers and the environment.



**More information on BPA:**

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