



How to avoid chemicals that can reduce fertility

In our modern everyday life we come into contact with many different chemicals through the products we use, the food we eat, and the air we breathe. Studies show that a particular group of chemicals called endocrine disrupting chemicals (EDCs) can have negative effects on female and male reproductive health. If you are planning a pregnancy, are already pregnant, or have small children here is what you need to know about EDCs and how to reduce exposure to them.



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What are endocrine disrupting chemicals?

EDCs are substances that can be found in the air, soil, water, food, and manufactured products. They can interfere with the body's normal functioning, including the reproductive systems of women and men. Some EDCs occur naturally in food. Soy beans and flax seeds for example are high in a substance called phytoestrogen which mimics the effects of the female sex hormone oestrogen. However, you would need to consume an awful lot of these foods for the phytoestrogen to affect you.

More concerning is that there are around 800 artificial EDCs in everyday items, such as plastics of food containers, personal care items, and food products. EDCs are also present in manufacturing and industrial and agricultural processes. Due to their many and different sources, we are all exposed to EDCs, although your degree of exposure varies depending on your job, lifestyle choices and location.

What EDCs do

Because we are exposed to combinations of so many different types of chemicals it is often not possible to know exactly if and how individual chemicals affect our health. But in the case of EDCs, studies have found that they can have negative effects on male and female reproductive health by mimicking or blocking the male and female sex hormones (oestrogen and testosterone). This can cause: changes in hormone levels, decreased sperm and egg quality, damage to the DNA in sperm, longer menstrual cycles, taking longer to achieve a pregnancy, increased risk of miscarriage, and earlier menopause.

Research shows that EDCs are present in 95% of people tested, and that people who are infertile have higher levels of some EDCs. People who are exposed to high levels of some EDCs through their work have increased risk of fertility difficulties. Notably, among couples who use assisted reproductive technology (ART) to conceive, higher levels of some EDCs decreases the chance of getting pregnant.

Types of EDC and where they are found

This table summarises the main EDCs that can affect reproductive health and where they are found.

Chemical	Where it is found
Bisphenols (BPA/BPS/BPF)	Widely used in plastic products, lining of cans and sales receipts printed on paper with a glossy sheen. Leaches from many products into food.
Phthalates	Added to plastics to increase flexibility and durability and found in toys, footwear, food packaging, medical plastic tubing, and personal care products.
Parabens	Used as a preservative and in anti-bacterial products, and found in food, cosmetics and personal care products.
Persistent Organic Pollutants (POPs)	Used in electrical devices and industrial lubricants and found in flame retardants in furniture. By-products of industrial processes such as metal and paper production, wood incineration or heating plastics.
Pesticides, herbicides and insecticides	These kinds of products are found in most people's garden sheds and sprayed on many food products and crops sold commercially.
Heavy metals (e.g. aluminium, arsenic, cadmium, chromium, lead, mercury)	Exposure occurs through smoking, air pollution, dental fillings, consumption of contaminated food and drink, and contact with petrol, industrial and household products.

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How to reduce exposure

While we cannot avoid exposure to EDCs, we can take some simple steps to reduce exposure to them. This is especially important for women and men who plan to have children. Talk to your doctor when planning a family to discuss what precautions you can take to limit the risks of EDCs.

Here are some practical tips for reducing exposure:

- washing fruit and vegetables and buying them from known (local) sources reduces your intake of pesticides, fungicides, herbicides and chemicals that may have been sprayed on the plants
- eating fewer processed, canned, pre-packaged foods reduces your intake of BPA, phthalates and plasticisers that coat the inside of cans or those absorbed from plastic wrappings or cling wrap
- limiting your intake of oily fish (salmon, tuna, sardines) and fatty meats reduces your consumption of POPs, pesticides, heavy metals and fat-soluble chemicals that can accumulate in animals
- avoiding handling sales receipts or storing them in your wallet. The thermal coating contains BPA to give them their shiny plastic texture
- drinking water/soft drinks out of glass or hard plastic bottles, not soft plastic bottles. BPA, phthalates and other plasticisers are used to make plastics in bottles flexible
- never heating food in soft plastic takeaway containers or those covered with cling wrap or foil. Instead, place food in a china or glass bowl and cover it with paper towel or a china plate before heating. When they are heated, phthalates and bisphenols in plastic can easily be absorbed into the food, especially if it is fatty. The heating process also releases dioxins from the plastics that can be absorbed into the food
- avoiding air fresheners, smoke, strong chemicals, heavily perfumed products, plastic smells and fumes
- airing your home frequently to reduce the amount of inhalable chemical particles
- avoiding use of pesticides and herbicides in the garden, at work or in the home. Instead, try using 'green chemicals', which use non-toxic agents to reduce pests and weeds
- avoiding potent household products like detergents, hand sanitisers, cleaning agents, and carpet cleaners or strong chemicals like glues, paints, and varnishes which have numerous chemicals classes in them. Use 'green products' which use alternative non-toxic agents
- reading the labels on all personal care products such as cosmetics, shampoos, conditioners, hair colourings and body washes etc and choosing those that are free of parabens. Try to avoid using heavily perfumed/scented products where possible
- reading the labels on all food products and avoid those with additives, preservatives and anti-bacterial agents
- being aware of marketing ploys - some products that are advertised as 'BPA free' for example often have replacement chemicals such as BPS which can be just as harmful as BPA.

For more information about pre-conception health visit



www.yourfertility.org.au