

Do EDCs Affect Health at Low Doses?

Yes.

Hormones work at very low doses – parts per billion and below. They are chemical signals that control when genes are turned on and off. This process is crucial to all of life, including how fetal humans become adults, whether our immune system works properly, how our brains are wired, whether we are fertile, and much more.

EDCs hack hormone signaling. Very low doses of EDCs can interfere with hormone signaling and have severe health effects. Typically, EDCs do not kill directly. They are not poisons. But by hacking hormones they can dramatically undermine our health.

But “low doses” doesn’t mean “little exposure.” Toxicologists traditionally consider a part per billion to be a low dose. But how many molecules of BPA are in one drop of water in which the dose is one part per billion? There are approximately 2.65 trillion molecules of BPA in that one drop.

A core business of the endocrine system is to amplify hormonal signals so they cause important physiological and developmental effects. A single hormone molecule’s effect can be amplified more than a million-fold. The same is true for EDCs. Only a few molecules can be amplified in ways that cause serious adverse effects. When you have 2.65 trillion molecules in each drop, that creates the possibility for significant harm.

Serious scientific research indicates that EDCs are associated with a wide array of today’s non-communicable disease and disability pandemics:

- Breast cancer
- Prostate cancer
- Interference with chemotherapy
- Infertility including low sperm count
- Decreased effectiveness of artificial reproductive technology
- Obesity
- Type 2 diabetes
- Mis-wired brains

Understanding what EDCs are and their effects will help guide smart policy.



For sources, resources, and to keep up to date on endocrine disruptor science, visit [EHSciences.org](https://www.ehsciences.org). Environmental Health Sciences is a nonpartisan U.S. 501(c)(3) corporation permanently dedicated to public benefit and education.