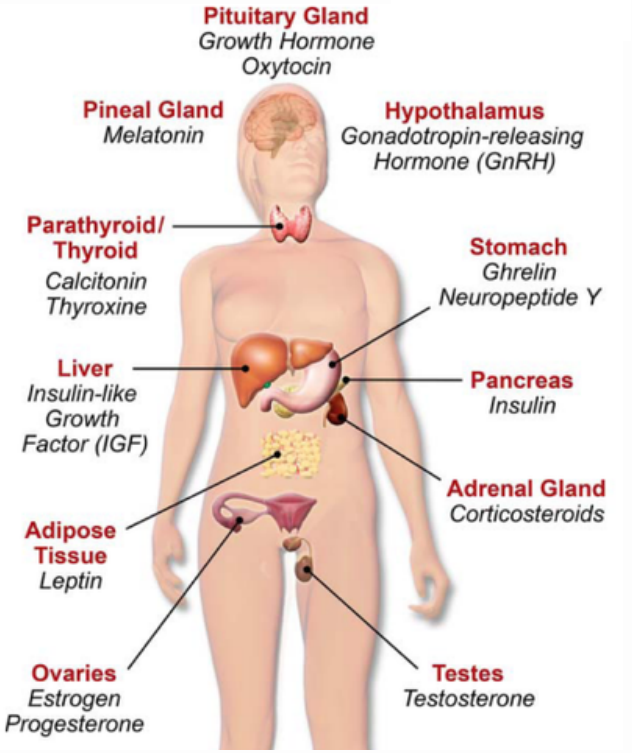
What are Endocrine Disrupting Chemicals (EDCs)?

The endocrine system makes the chemicals that regulate bodily functions, called hormones. Hormones affect sexual development and growth in children and young adults, and responses to stress and sleep, among others.

EDCs interfere with production, release, metabolism, action, or elimination of hormones.



Which agencies have a role in protecting us from EDCs?

On a federal level, several agencies work on assessing and mitigating the effects of EDCs:

US Environmental Protection Agency (EPA)

Centers for Disease Control and Prevention (CDC)

Food and Drug Administration (FDA)

National Institute of Health (NIH)

Questions? Contact us:

ceet.upenn.edu

ceet@pennmedicine.upenn.edu

ENDOCRINE DISRUPTORS

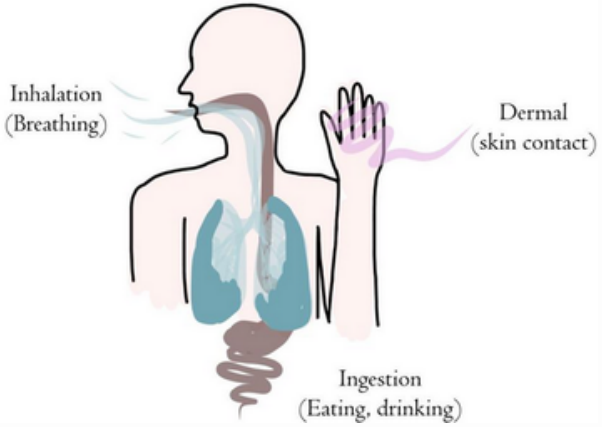
THE WHAT, WHERE, & WHY

Perelman School of Medicine University of Pennsylvania | CEET Center of Excellence in Environmental Toxicology

Supported by NIEHS Funding P30 ES013508

How are we exposed to endocrine disruptors?

- personal care products/cosmetics
- contaminated drinking water
- disinfectants
- food preservatives
- pesticides
- non-stick cookware



Common EDCs:

- parabens
- phthalates
- bisphenols (such as BPA)
- polyfluoroalkyl substances (PFAS)
- polychlorinated biphenyls (PCBs)

Vulnerability to EDCs differs with age.

Infancy and Childhood: Increased sensitivity to infections, asthma, obesity, reduced antibody levels after vaccination

Adolescence: altered puberty, obesity

Early Adulthood: obesity, infertility, fibroids, breast cancer

Midlife: obesity, fibroids, premature menopause, breast cancer

Mature Adulthood: prostate cancer, Parkinson's and Alzheimer's diseases

How can we lower exposure to EDCs?

- Reduce plastic usage, especially food containers. Never microwave food in plastic.
- Eat organic food, especially dairy, fruits, & vegetables, when available.
- Use a water filtration system for drinking water (see below).
- To avoid EDCs in personal care and cleaning products, see the Environmental Working Group's apps.
- Avoid non-stick cookware

Use these resources to find:

The right water filtration system for you
EPA's Guide to Selecting Water Treatment Systems →

Cosmetic and personal care products with fewer EDCs
← Environmental Working Group's website, Skin Deep

Food and cleaning products with fewer EDCs
EWG's Consumer Guides →