What are Endocrine System Disruptors?

The Issue and Action Steps for Comunity Members

Scan here for resources

What is the endocrine system?

The endocrine system is the network of glands in our bodies. These glands produce hormones which are released into the blood and carried to tissues and organs all over the body to control body functions.[1] Below is a visual of the glands and organs involved in the endocrine system.

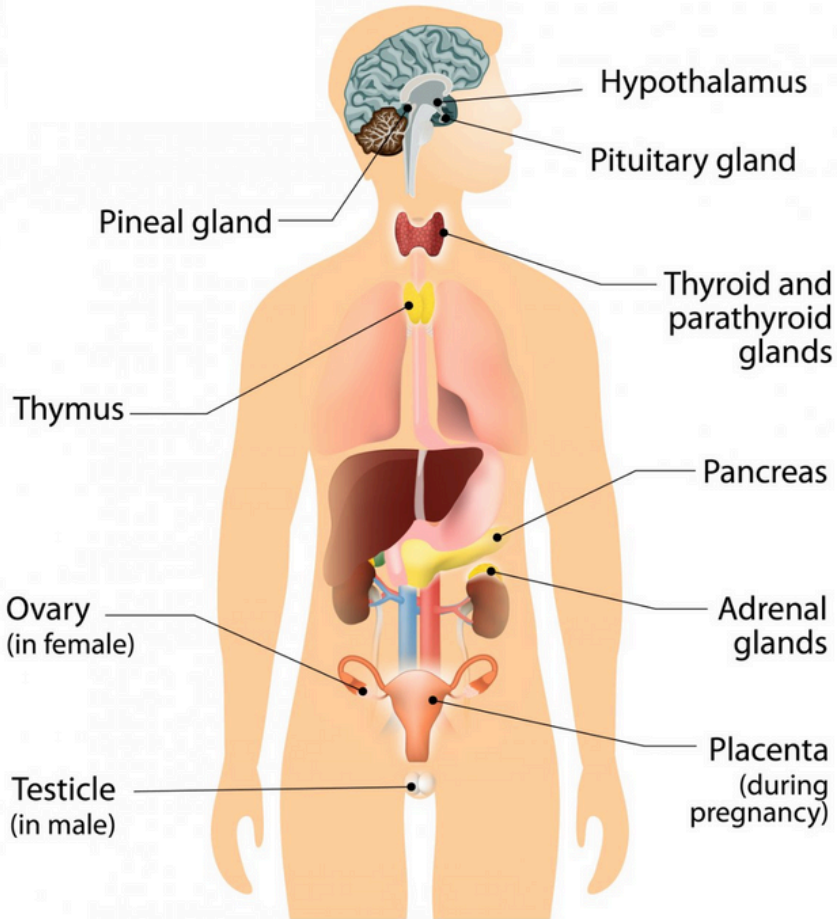


Image of the Endocrine system from the Environmental Protection Agency [1]

The glands communicate with each other to control growth and development, metabolism, brain function, reproduction, and behavior.

We would like to acknowledge the Stakeholder Action Board for their contributions and expertise.

What are endocrine distruptors?

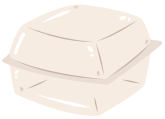
Endocrine disruptors are chemicals that prevent the endocrine system from working properly.[2] [3] Several man-made chemicals can harm the body in many ways by interfering with the endocrine system, which plays an important role in maintaining the body's normal function. [2] [3]


Cosmetics


Metal-lined cans


Food pesticides


Nonstick pans


Fast food packaging


Plastic bottles


Toys

Endocrine disruptors are found in many of the products that we use every day. We may be exposed to endocrine disruptors through:

- Breathing them in drinking
- Contaminated water
- Eating contaminated food
- Coming into contact with contaminated products through the clothes we wear or the cosmetics and soaps we use.[4]

Recent research on endocrine disruptors shows their possible connection with diseases such as endometriosis,[5] breast cancer[6], obesity[7], diabetes[8], and reproductive disorders such as uterine fibroids, menstrual irregularity, and polycystic ovary syndrome in women[9] [10], and testicular cancer and lower sperm quality in men[11]. Exposure to endocrine disruptors are also linked to poor pregnancy outcomes such as miscarriage, low birth weight and preterm birth[12].

What does this mean for me and my community?

Further research on these chemicals will help improve our ability to understand which chemicals and products are harmful to whom, and how to best regulate them.

Even as we continue to build that understanding, here are some steps we can take to protect ourselves and our communities:

- Use an app, such as Think Dirty, to evaluate the ingredients in cleaning, beauty, and household products before you buy them.
- Support continued regulation and environmental cleanup of known endocrine disruptors.
- Support continued research on products containing chemicals to properly understand their effect on the human body.
- Stay informed on new research. Scan the QR code to find resources.

Please see http://mleead.umich.edu/Coec_Fact_Sheets.php for the citations included in this factsheet.

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SCHOOL OF PUBLIC HEALTH
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What are Endocrine Disruptors?

The M-LEEaD Center's Community Engagement Core (CEC) increases awareness and understanding of environmental impacts on human health.

Stakeholder Advocacy Board members include:

- Community Health and Social Services
- The Detroit Health Department
- Detroit Hispanic Development Corporation
- Detroiters Working for Environmental Justice
- Eastside Community Network
- Ecology Center
- Henry Ford Health System
- Michigan Environmental Justice Coalition
- We the People of Detroit

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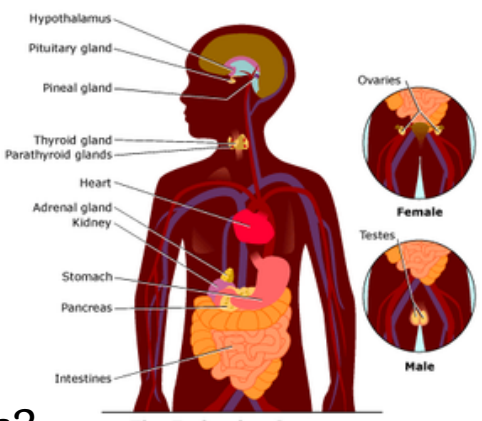
What is the Endocrine System?

The endocrine system is made up of a network of glands in our bodies that communicate with each other. These glands make hormones, which affect growth, metabolism (convert the energy in food to a form of energy to fuel essential body functions like breathing), and how we develop and function sexually.[1] The endocrine system controls our bodily functions, from before we are born through old age. The endocrine system influences the development of our brain, reproductive, metabolic, and nervous systems. Examples of endocrine glands are:

- The thyroid gland, which controls body heat, bone growth and metabolism;
- The ovaries and testicles, which play a key role in reproduction;
- The pancreas, which makes insulin to control blood sugar levels[1].



The Endocrine System

What are Endocrine Disruptors?

Endocrine disruptors are chemicals that can throw our bodies out of balance by preventing our endocrine systems from working properly.[2] We may be exposed to endocrine disruptors by absorbing them through:

- Our skin, from fabrics and soaps
- Our lungs when we breathe
- Our drinking water
- Our foods when we eat

Endocrine disruptors are found in many of the products that we use every day. For some commonly used chemicals that disrupt the endocrine system, see https://www.niehs.nih.gov/health/topics/agents/endocrine/index.cfm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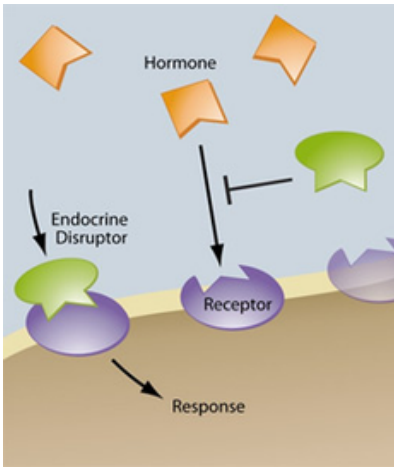
How do Endocrine Disruptors Affect Our Health?



Endocrine disruptors can cause health problems in many different ways.[2] They can:

- Act like natural hormones and fool our bodies into responding inappropriately. For example, the body may produce excessive sex hormones before puberty.
- Interfere with the function of hormones, causing the body to respond incorrectly.
- Cause the endocrine system to produce too little or too much of a particular hormone, such as reduced insulin production.
- Animal studies have shown that endocrine disruptors affect the nervous system (cognition), reproductive health (fertility problems and early puberty), causes breast, ovarian and prostate cancers, as well as obesity, diabetes and cardiovascular problems. This raises concerns about their effects on human health.[3]

What Does this Mean for Me and My Community?

Active research on endocrine disruptors is ongoing to better understand when and how they are harmful to human health. Findings from this research will help improve our ability to understand which chemicals and products are harmful to whom, and how best to regulate them. Even as we continue to build that understanding, here are some steps we can take now to better protect the health of the public.

- Avoid using chemicals or products whose health effects are unknown.
- When possible, limit contact with products that are suspected to disrupt the endocrine system. For example, avoid buying foods sprayed with harmful chemicals and wash them properly if purchased.
- Support continued regulation and environmental cleanup of known endocrine disruptors.
- Encourage policy makers to require labels on products that contain known endocrine disruptors (see https://www.epa.gov/endocrine-disruption/endocrine-disruptor-screening-program-edsp-overview).
- Support continued research on products containing chemicals to properly understand their effect on the human body.
- Pass and enforce regulations that prevent chemicals or products whose health effects are unknown from being marketed or released.

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The University of Michigan Lifestage Environmental Exposures and Disease Center (M-LEEaD) Community Engagement Core (CEC) promotes collaboration among UM environmental health researchers and communities to advance knowledge of environmental health issues that affect community members in Detroit and Southeast Michigan.
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