How Do You Regulate Something That You Don’t Understand?

By Julianna LeMieux — May 20, 2016

The debate about endocrine disruption is intense, in large part because the research is inconclusive. In turn, there’s a lot of uncertainty surrounding how to regulate the use of supposedly endocrine disrupting chemicals.

Endocrine disruptor chemicals (EDCs) are defined as having the potential to alter one or more functions of the endocrine system and cause negative effects in an organism, and/or its babies.

A new publication entitled "Scientific Issues Relevant to Setting Regulatory Criteria to Identify Endocrine Disrupting Substances in the European Union" is the latest in a long line of reports, studies and recommendations opining on the best way to identify what defines an EDC and how to deal with them.

The most impactful documents are:

- **1996 (August 3) The Food Quality Protection Act (FQPA) was signed into law by President Bill Clinton after being passed unanimously by Congress. The FQPA changed many aspects of how the Environmental Protection Agency (EPA) tests and regulates pesticides including the specific screening on the effects of pesticides for disruption to the endocrine system.**

- **1996 - 1998 The Endocrine Disruptor Screening and Testing Advisory Committee (EDSTAC) of the EPA worked for two years to create recommendations to regulate chemicals in regards to their ability to disrupt the endocrine system. The EDSTAC report [1] introduced a two-tiered approach**
  - Tier 1 identifies substances that have the potential to interact with the endocrine system. If something is identified as positive, it continues to tier 2.
  - Tier 2 involves testing in order to establish any negative effects on the endocrine system caused by the substance. If there is, a decision will be made regarding how it should be regulated.

- **1999 - The European Commission published the "Community Strategy for Endocrine Disruptors - a range of substances suspected of interfering with the hormone systems of humans and wildlife [2]" which provided a strategy for studying EDCs.**
2002 - WHO (through the International Programme on Chemical Safety (IPCS)) developed a report entitled "Global Assessment of the State-of-the-Science of Endocrine Disruptors." The report gave a global perspective and stated that because there is so much uncertainty and concern in this field, studies on the potential effects of EDCs should remain a high global priority with a particular concentration on the effects on infants and children.

2012 - EDCs were included as an "emerging issue" by the International Conference on Chemicals Management (ICCM) under the Strategic Approach to International Chemicals Management (SAICM). The overall goal of the SAICM is to have safe management of chemicals by 2020 so that they are not harmful to humans or the environment.


So, it's taken 20 years, multiple governmental agencies, and thousands of work hours by hundreds of people to produce these documents.

The latest of these, WHO's State of the science of Endocrine Disrupting Chemicals, sums up the current state of the field nicely when it says:

"Close to 800 chemicals are known or suspected to be capable of interfering with hormone receptors, hormone synthesis or hormone conversion. However, only a small fraction of these chemicals have been investigated in tests capable of identifying overt endocrine effects in intact organisms. The vast majority of chemicals in current commercial use have not been tested at all. This lack of data introduces significant uncertainties about the true extent of risks from chemicals that potentially could disrupt the endocrine system."

In conclusion, despite all of this work, we still understand next to nothing about endocrine disruption.

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