

The CHEMICAL FLOOD: Food, Health and Gender

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Toxic Substances Control Act— 1970s

- **100,000 chemicals in commerce**
- **Households--- cleaners, air refreshers, paints, cosmetics**
- **Agriculture--- herbicides, pesticides, fertilizers, growth promoters**
- **Industry---solvents, lubricants, plasticizers, corrosion inhibitors, coatings, fire retardants, hydraulics**
- **Construction---adhesives, insulation, carpet, plastics**
- **Transportation---fuels, exhausts, antifreeze, brake fluid**

Toxic Substances Control Act— 1970s

- **100,000 chemicals in commerce**
- **62,000 grandfathered in as SAFE**
- **GRAS**
- **Generally Recognized As Safe**

BPA---bisphenol-A

- **Building block for polycarbonate plastics**
- **Approved by EPA in 1963 for food contact**
- **Water bottles**
- **Epoxy resin lining cans**

BPA also found in

- **Clothing fabrics**
- **Furniture**
- **Household products**
- **Cosmetics**
- **Dental sealants**
- **Cash register receipts**

“OUR STOLEN FUTURE”

Theo Colborn

- **Documents problems with endocrine disruptors in the environment**
- **Fish**
- **Frogs**
- **Birds**
- **Alligators**

BPA BANNED IN

- **11 states & European Commission**
- **for baby bottles & sipping cups**

- **Canada---**
- **declared BPA a TOXIC substance**

BPA PRODUCTION

- **~2 BILLION LBS/YEAR in US**
- **Produced by**
- **SABIC Innovative Plastics**
- **Dow Chemicals**
- **Bayer Materials Science**
- **Momentive**
- **Sunoco Chemicals**



- Dr. Frederick vom Saal
- Endocrine Disruptor Lab, Univ of Missouri

Dr. Saal ---BPA contributes to

- **Cancer**
- **Obesity**
- **Diabetes**
- **Heart disease**
- **Immune dysfunction**
- **Allergies**
- **Asthma**

BPA damages reproductive system

- **Uterine fibroids**
- **Ovarian cancer**
- **Brest cancer**
- **Prostrate cancer**
- **Urethra abnormalities**
- **Lowers sperm count**

BPA---Neurological Disorders

- **Attention deficit hyperactivity**
- **Learning disabilities**
- **Social behavior disruption**
- **Impaired memory**

BPA Polymers---SAFE

- **High temperature and**
- **Alkaline environment breaks polymers**

● **UNSAFE**

BPA---as a single molecule becomes a hormone and mimics estradiol

- **Dr. Saal—1966 studied BPA levels 25,000 x lower than previously studied and found**
- **Abnormal development of prostate and reproductive system in male mouse model**
- **Other researchers ---1,000s of studies reporting these and other problems triggered by BPA**

DES---diethylstilbestrol

- 1940's & 1950's
- Mothers took DES
- 20-50 years later daughters had
- Cancers never seen before &
- 3 x increase in breast cancer

BPA—

Structurally & functionally similar to DES

Who to Believe?

- **Industry-funded studies**
- **100% show BPA to be SAFE**
- **Independent studies**
- **90% show BPA to be UNSAFE**
- **Follow the \$**
- **BPA a \$10 billion/year market**
- **NIH---National Institute of Health**
- **Funding \$30 million in current studies on BPA**

BPA Regulation

- **January, 2010 FDA**
- **Reversed position and agreed BPA causes prostrate cancer and early puberty**
- **As a grand-fathered chemical FDA has no authority to withdraw it from the market**
- **Each hour Congress delays action generates \$1 million in BPA sales**

So,

- **Why does little Johnny think he is a girl?**
- **And**
- **Little Susie think she is a boy?**
- **Gender confusion**
- **not a choice**
- **environmental endocrine disruptors including**
- **BPA, birth control pills, hormone therapy, etc**

Fish Models for Sexual Orientation

- **Phenotypic and functional gender altered by early exposure of larval fish to hormones in the environment**
- **Genetic males become functional females when exposed to estrogens**
- **Genetic females become functional males when exposed to testosterone**

Endocrine Disruptors

- **Widely spread in our environment**
- **Found in fish, polar bears, reptiles, birds and even in lactating women**
- **Some fish, alligators, birds and other organisms in the wild have been found to have both male and female reproductive organs**
- **How can these chemicals not be affecting our children?**

Chemical Abstract Services Registry

More than 159 million unique organic and inorganic chemical substances

More than 68 million biosequences

Adds 15,000 new entries per day every day

Environmental and human impact ???????