



Environmental and Reproductive Health - *A Unique Opportunity*¹

BACKGROUND

Recent public opinion research conducted by the Reproductive Health Technologies Project (RHTP) suggests that the pro-choice movement should become more active in supporting a woman's decision to continue a pregnancy and her right to have a healthy pregnancy as a way of engaging moderates. One area that provides a unique opportunity for the pro-choice movement to show its support for pregnant women is the link between reproductive health and the environment.

An emerging body of evidence indicates that environmental toxins are negatively affecting fertility as well as the health and well-being of the developing fetus and children. The effects are especially disturbing in lower-income and minority communities where there is a heightened risk of exposure to hazardous chemicals at work and in the home. By pursuing policies and campaigns that focus on this link, we can help families and communities become healthier.²

WHY NOW?

The Values

Since its inception, the mission of the pro-choice movement has been to respect and support a woman's decision about whether and when to become a parent. Her decision may involve preventing a pregnancy, ending a pregnancy, or having a baby. Despite this broad vision, the pro-choice movement has been defined by the anti-choice community by its work on a narrow section of that mission: abortion rights.

To the extent that the pro-choice movement has spent resources on a proactive agenda, it has been focused on prevention – reducing unintended pregnancies and abortion. While such policies are an integral part of the pro-choice movement's mission, these policies, like the protection of abortion rights, reinforce an image of the pro-choice movement as against pregnancy and, by implication, children. By increasing our efforts to help women plan for and have healthy pregnancies, the pro-choice movement will better reflect our core values and vision.

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The Potential

We believe that the link between reproductive health and the environment affords the pro-choice movement with great potential to:

- 🔗 **Engage the “moderate middle”** (2s and 3s on a traditional pro-choice scale):
RHTP's research indicates that the “moderate middle,” sometimes referred to as the “abortion grays,” is more comfortable and enthusiastic about supporting proactive policies. But right now, the pro-choice movement is not a credible advocate for “pro-child” policies or issues. To be credible, we must put more resources and energy into helping women plan and have healthy children.

- 🔗 **Build strong alliances with other progressive communities**, thereby broadening our reach with activists, donors, and elected officials. The most obvious connections will be with environmental and health or medical organizations. But this concern boasts allies in other areas as well, including issues of social and racial justice, education, immigration, religion, science, progressive economics, city planning and unions.

- 🔗 **Strengthen the relationships with communities of color** which are disproportionately affected by environmental health problems: Repeated studies have shown that racial and ethnic minorities disproportionately live near and work in hazardous facilities, suffer disproportionately from exposure to air pollutants, contaminated fish, and agricultural pesticides, and have more adverse health effects from exposure to lead.

The Science

Historically, exposure to high levels of contaminants has been associated with greater risks to health, and especially with the risk of cancer. In recent years, however, scientists have increasingly found that certain pollutants in the environment may also contribute to fertility problems in both males and females as well as to health problems in developing fetuses and young children.

Our scientific understanding in this area is advancing rapidly, but the relationship between cause and effect is complex, making concrete, specific answers elusive. For instance, exposure may sometimes take a long time to manifest symptoms and it is often difficult to identify or estimate accurately exposures to environmental contaminants that occurred months or years earlier. Moreover, humans are exposed to complex mixtures of chemicals that can interact with one another to detrimental effect, but studies often focus on just one chemical. Likewise, we know that the timing of exposure can have an important impact. For instance, children exposed *in utero* to the drug thalidomide³

³ Thalidomide, first prescribed in the late 1950s in Europe, was used to treat anxiety, insomnia and, in pregnant women, morning sickness. It also was marketed in numerous other countries, including Japan, Australia and Canada, but was not approved by the FDA until later for a different indication. Many patients did not know they were taking a drug that was not approved for use by the FDA, nor did they give informed consent. Some 10,000 babies in the world were born with severe deformities because their mothers had taken the drug during early pregnancy. (Franks, M.E., et al. Review: Thalidomide. *The Lancet*, volume 363, May 29, 2004, pages 1802-1811).

during the third to sixth week of pregnancy often suffered limb deformities, while children exposed later either had no effects or different effects such as heart defects. These examples demonstrate some of the scientific challenges interfering with our complete understanding of the impacts on reproductive health. Nevertheless, studies in both animals and humans strongly suggest that the link between environmental contaminants and negative reproductive health outcomes is strong and growing. If we wait until the science is completely certain, it may be too late. We have enough evidence now to take precautions against the use of many of these chemicals.

⌘ Impaired Fertility

According to the Centers for Disease Control and Prevention (CDC), the number of couples in the United States with an impaired ability to become pregnant grew from 6.1 million in 1995 to 7.3 million in 2002, or to more than one in every eight couples of childbearing age. Although some of this increase may be attributed to more people beginning families later in life, better diagnostic tools, and greater reporting of fertility problems, recent data suggests that women under the age of 25 are the fastest growing segment of the community reporting fertility challenges.

What is contributing to this alarming trend? We know that multiple interacting factors, including age, heredity, lifestyle, underlying disease, reproductive tract infections, and nutritional status contribute to fertility challenges for both men and women. We also know that exposure to ubiquitous dioxins such as cigarette smoke, lead and mercury, and some agricultural pesticides are direct threats to a couple's ability to conceive or have a healthy pregnancy.

Troubling new research suggests that a broader range of chemicals – including many that are associated with everyday products such as household cleansers, flame retardants, personal care and beauty aids, and even plastic water bottles – could have a complex and far-reaching impact on men's and women's fertility. Recent studies also suggest that negative effects on reproductive health can be triggered by lower levels of exposure than previously thought.

Consider:

- Hundreds of studies strongly link man-made endocrine disrupting chemicals (EDCs) to a host of reproductive abnormalities and to reproductive rate declines in a wide range of wildlife. EDCs are found in a variety of products, including pesticides, wood preservatives, paints, plastics and personal care products as well as naturally in some plants. These chemicals can interfere with the hormone system in mammals, birds, amphibians and fish.
- Numerous studies in laboratories around the world confirm that synthetic chemicals in our environment can damage animal fertility.
- Other studies demonstrate associations between environmental toxins and impaired human fertility, including:
 - Reduced sperm count and quality;
 - Sperm DNA damage;

- Alterations in ovarian function and menstruation;
- Endometriosis;
- Chromosomal damage to oocytes;
- Longer time to pregnancy;
- Increased rates of hypospadias (an anomaly in which the urethral opening is not at the tip of the penis), cryptorchidism (undescended testes), polythelia (presence of extra nipples); and
- Altered embryonic development and increased rates of spontaneous miscarriage, pre-term birth and stillbirth.

⌘ Effect on a Developing Fetus

Despite the U.S. having a sophisticated and technologically advanced maternity and prenatal health care system, adverse birth outcomes are on the rise. Premature delivery, fetal growth retardation, low birth weight, and a variety of congenital abnormalities have increased in the last forty years. The causes are not clearly understood though it is becoming increasingly clear that chemicals in the environment play a crucial role in the health and well-being of pregnant women and their unborn fetuses. A study by the National Academy of Sciences (NAS) suggests that environmental factors contribute to at least 28 percent of childhood developmental disabilities.

Probably the most famous example of a chemical affecting the development of the fetus is diethylstilbestrol (DES), a synthetic estrogen. In the 1950s and 1960s pregnant women were prescribed DES to prevent miscarriages. Not only did DES fail to prevent miscarriages, but it also caused health problems for many of the children born to women who took the drug during pregnancy. In 1971, doctors began reporting high rates of unusual vaginal cancers in teenage girls. Investigations of the girls' environmental exposures traced the problem to their mothers' use of DES. Some of the daughters also suffered birth defects of the uterus and ovaries, and immune system suppression. Other studies have linked DES to an increased risk of breast cancer and neurological problems in some of the pregnant women who took the drug .

Until recently, scientists thought the placenta shielded cord blood and the developing fetus from most chemicals and pollutants in the environment. However, recent research is showing that even before birth, a child is exposed to hundreds of chemicals. It may be there are special windows of vulnerability when these chemicals can have long-term, irreversible effects on the reproductive and neurological system of the developing fetus.

The developing fetus is at heightened risk from *in utero* exposure to harmful chemicals for several reasons:

- the neurological, reproductive and immunological systems of a fetus are still in development;
- an immature, porous blood-brain barrier allows greater chemical exposure to the developing brain;
- the longer future life span of a child compared to an adult allows more time for adverse effects to arise; and

- the systems that detoxify and excrete industrial chemicals are not fully developed in a fetus.

HOW DO WE MOVE FORWARD?

The links between the environment and impaired reproductive health are strong and disturbing. There are a variety of organizing and policy campaigns that the pro-choice community could engage in that would focus on this link. These are not new ideas. Environmental health activists and a small, but growing, number of reproductive health and justice organizations have been working on this issue for many years and could benefit from the added energy and resources of the broader pro-choice movement.⁴

Policy Ideas:

🔗 **Increase Research:** As a first step, we need more and better research on the link between the environment and reproductive health through an integrated research agenda. One possibility is to sponsor a National Academy of Science/Institute of Medicine expert panel to survey and organize what research is already underway and put forth an integrated research agenda. The research must also address the disparities in health outcomes in minority and low-income communities where exposure to harmful chemicals is most severe.

Another tool that would aid in research is state, regional and nationwide biomonitoring. Biomonitoring is a way to measure the levels of potentially harmful chemicals in our blood, urine or other body tissue (also called our “body burden”). The CDC has a biomonitoring program that needs to be expanded and strengthened. In addition, states can implement their own biomonitoring programs. This fall, California enacted the first state-wide, community-based biomonitoring program in the nation (See CA SB 1379).

🔗 **Reform our Chemicals Policy:** There are over 100,000 manufactured chemicals registered for use today, yet less than 10 percent of them have been tested for their effects on human health. The current system for regulating chemicals in the U.S. is dangerously lacking and needs to be revamped in order to prevent harmful toxins that endanger our reproductive health and the health of developing fetuses from being introduced into the market or staying on the market.

Chemical policy reform may seem distant from our traditional pro-choice agenda – yet it might be the single biggest thing that we can do to protect our reproductive health and the health of our children. One of the obvious benefits

⁴ An in-depth discussion of organizing campaigns is beyond the scope of this working paper. Nevertheless, there are many exciting projects underway across the country. For a taste of some of these campaigns see Asian Communities for Reproductive Justice (www.reproductivejustice.org – the POLISH project); Campaign for Safe Cosmetics (www.safecosmetics.org); Women’s Voices for the Earth (www.womenandenvironment.org – Mercury project and others); and Healthcare Without Harm (www.noharm.org – various initiatives for healthcare providers).

of working on such a comprehensive proposal is the opportunity to find common cause with a wide swath of constituencies who are also concerned about environmental health – from children’s advocates, to cancer organizations, and groups fighting diseases such as autism, Parkinson’s and asthma.

The environmental health community is working toward strategic wins at the state and local level to help build toward national reform.

⌘ **Ensure the Right to Information:** Individuals and communities, especially those that suffer disproportionately from the negative impacts of environmental contaminants, have a right to information about the toxins that are present in their community and input into decisions affecting the health of their communities. Moreover, individuals have a right to know what is in the products that they buy. One proposal introduced in California would require a logo to be used that indicates that the product is free from toxins that can harm a developing fetus or young child (See CA AB 1291).

⌘ **Eliminate or Reduce Exposure to the Most Egregious Chemicals:** Dangerous chemicals are ubiquitous in the environment as well as in products and food that we use and consume everyday. Instead of waiting for comprehensive chemical policy reform we can identify some of the worst contributors to negative reproductive health outcomes and target them for elimination. Here are just a few examples of targeted chemical bans.

- **Endocrine Disruptors:** Endocrine, or hormone, disruptors are chemicals that alter normal hormone levels or activity in the body. Endocrine disruptors, which are present throughout the environment and in products we use every day, have been associated with breast cancer, fibroids, endometriosis, ovarian cysts, chronic fatigue, hypothyroidism and fibromyalgia. The most common endocrine disruptors are dioxins, polychlorinated biphenyls (PCBs), bisphenol-A (BPA); phthalates, pesticides and formaldehyde.

Various policies have been initiated to target one or more endocrine disruptors including the following examples:

- **BPA:** The City of San Francisco recently passed an ordinance that bans the manufacture, sale and distribution of child care articles and toys for children less than three years old containing bisphenol A (BPA) and some phthalates within the city limits. The European Union has a similar ban.
- **Phthalates:** California introduced legislation to ban the manufacture, sale and distribution of phthalates in cosmetic products (See CA AB 319).

- **Mercury:** One in ten women in the U.S. carries enough mercury in her

blood to pose a threat of neurological damage to a fetus. Mercury is found in the environment as a result of emissions from coal-fired power plants and is also found in many common products such as thermostats. Safe, cost effective non-mercury alternatives exist for nearly all uses of mercury. Several states and cities have taken action to prevent mercury damage including:

- Banning hospitals and schools from purchasing products with mercury (Duluth City Council 2000).
- Prohibiting the administration of vaccines containing more than a specified amount of mercury to pregnant women and to children less than three years of age (Colorado SB 99).
- Providing testing for women who are thinking about becoming pregnant for their mercury levels and other body burdens.

- **Flame Retardants:** Certain toxic flame retardant chemicals, “brominated flame retardants” (BFRs), are likely to persist in our environment, accumulate in the food chain and in our bodies, cause adverse health effects in children and detrimentally affect a developing fetus or breastfeeding baby. Based on the available data, we know that BFRs are associated with several adverse health effects in animal studies, including developmental effects (such as permanent changes in memory and learning), interference with normal thyroid function, and reproductive effects. There is evidence that some BFRs can cause immune suppression, endocrine disruption, and cancer. The breast milk of American women contains the highest levels of BFRs in human breast milk found anywhere in the world. Several states have banned some types of BFRs including :
 - Polybrominated diphenyl ethers (PBDEs) in CA, HI, ME, NY and WA.

- ⌘ **Promote Green Chemistry and Technology:** Closely related to chemical policy reform is the need to encourage the development and use of safer options for many toxic chemicals that are currently on the market. A combination of funding basic research and providing incentives for businesses to adopt these chemicals and technologies is needed.
- ⌘ **Encourage Healthier Business Practices:** Businesses can make safer and healthier purchasing choices for many products right now. We need to encourage businesses to adopt greener purchasing practices. For instance, some states and localities encourage school districts, hospitals and government agencies to purchase products (including food) that are made with no or few toxic chemicals.
- ⌘ **Advocate the Use of the Precautionary Principle:** The precautionary principle aims to protect the public by preventing harm rather than responding to harm after it has occurred. It requires the proponents of a product to assess its safety before it is undertaken or introduced and consider alternative ways of

accomplishing the same goal in order to avoid causing undue harm to human health or ecosystems. In 2003, San Francisco became the first city in the nation to adopt a precautionary approach when developing new environmental policies.

CONCLUSION

The pro-choice movement has a long and laudable history of improving the lives and health of women. Nevertheless, as a movement, we have not invested as much time or resources into directly helping women form their families. By focusing on the intersection of environmental and reproductive health, we can simultaneously increase the likelihood that a woman can start a family – a healthy one – when she decides she is ready, while at the same time, expand and rejuvenate our movement with positive policies that tap into people's most personal aspirations for their lives.

ADDITIONAL INFORMATION

Below are some helpful resources for finding additional information on the links between reproductive and environmental health. This list is by no means complete, but provides a starting point. In addition, joining both the Collaborative on Health and the Environment (CHE) and the Environmental Health News (daily summary of relevant news articles) are good ways to start educating yourself about the links. Both resources are free and rich with information.

Websites

Collaborative on Health and the Environment (CHE)

www.healthandenvironment.org

Environmental Health News - Aggregates links to articles in the world press about environmental health, with daily updates

www.environmentalhealthnews.org

Asian Communities for Reproductive Justice (see POLISH project in particular)

www.reproductivejustice.org

Women's Voices for the Earth (WVE)

www.womenandenvironment.org

Environmental Working Group

www.ewg.org

National Environmental Trust

www.net.org

The Green Guide (Free weekly consumer-friendly email, subscription site)

www.thegreenguide.com

Center for Disease Control (CDC)

www.cdc.gov

- National Report of Human Exposure to Environmental Chemicals
<http://www.cdc.gov/exposurereport/>
- National Center for Environmental Health
<http://www.cdc.gov/nceh/>

Definitions

The following definitions are largely taken from the Children's Environmental Health Network glossary of terms at

<http://www.cehn.org/cehn/resourceguide/glossary.html>

Bioaccumulants: Substances that increase in concentration in living organisms as they take in contaminated air, water, or food because the substances are very slowly metabolized or excreted.

Body burden: The total amount of a chemical in the body. Some chemicals build up in the body because they are stored in fat or bone or because they are eliminated very slowly.

Dioxin: Any of a family of compounds known chemically as dibenzo-p-dioxins. Concern about them arises from their potential toxicity and their contamination of commercial products. Tests on laboratory animals indicate that it is one of the more toxic man-made compounds.

Endocrine disruptors: Synthetic chemicals and natural plant compounds that may affect the endocrine system (the communication system of glands, hormones and cellular receptors that control the body's internal functions). The effect of these chemicals is to mimic, block or trigger the actions of hormones and disrupt normal body development and functioning. They are fat soluble and collect in tissues with high fat content, like breast tissue.

Neurotoxins: A biological or chemical substance or agent that has an adverse effect on the structure or function of the central and/or peripheral nervous system.

Phthalates: A group of chemicals used in the manufacture of plastics (often called plasticizers). Phthalates can prolong the lifespan or durability of plastics and increase the flexibility of some plastics. They are used in hundreds of products from vinyl flooring, adhesives, detergents, food packaging, plastic clothing, such as raincoats, and personal care products such as soap, shampoo, hairspray, and nail polish. Phthalates are also used in flexible polyvinyl chloride plastics (PVC) such as plastic bags, garden hoses, inflatable recreational toys, children's toys and some pharmaceutical and pesticide products.

Polychlorinated biphenyls (PCBs): A series of isomers and compounds used mainly as plasticizers, flame retardants and insulating materials. PCBs are potentially toxic and carcinogenic. Toxic effects generally involve damage to the skin and liver. PCBs have been found to cause reproductive problems in humans and cancer in laboratory animals. Further sale and new use of PCBs in the U.S. was banned in 1979.

Teratogens: Substances that cause malformation or serious deviation from normal development of embryos and fetuses.