

# LOWERING THE RISK OF DISEASE

## Protecting Our Family, Our Environment and Ourselves — It's About Us!



[www.hbcac.org](http://www.hbcac.org)



[www.greatneckbcc.org](http://www.greatneckbcc.org)



[www.preventionisthecure.org](http://www.preventionisthecure.org)

*Creating a Roadmap for Prevention...*

# The BCERP Project: Who We Are & Why We're Here

## BCERP: Breast Cancer Environmental Research Project

HBCAC/GNBCC/PITC are the **Community Partners** with Susan Teitelbaum (educating the public about the research findings)

Susan Teitelbaum, Ph.D of Mount Sinai School of Medicine, is the **Principal Investigator**

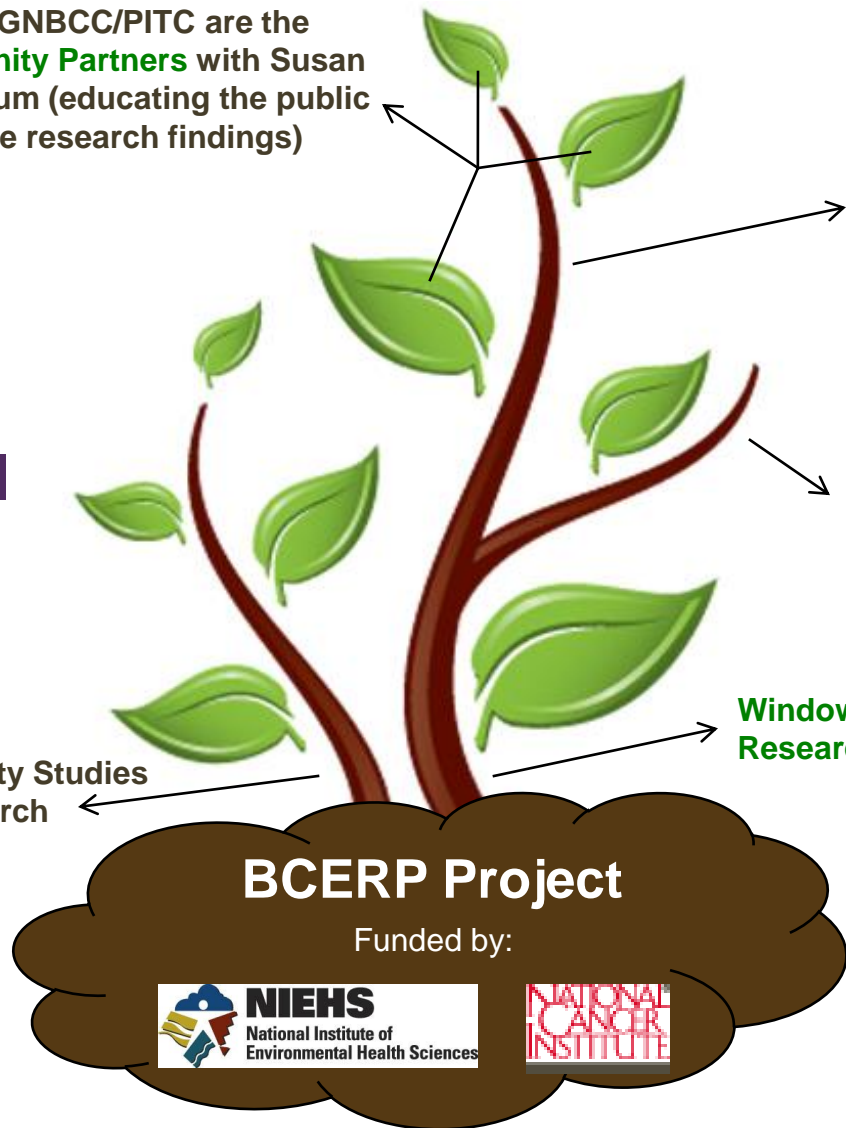
Jia Chen, Ph.D is co-investigator for the "Breast Cancer Genomics in Windows of Susceptibility to Endocrine Disruptors" project

Puberty Studies Research

**Window of Susceptibility Research**

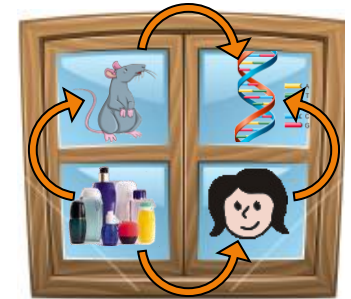
### BCERP Project

Funded by:



# The “Breast Cancer Genomics in Windows of Susceptibility to Endocrine Disruptors” Project (An Investigator’s Overview)

- We have designed a study to address the issues of indentifying “window of susceptibility” while mimicking the real human exposure scenarios
- In their everyday lives, women are exposing themselves to combinations of many potential endocrine disrupting chemicals through their use of personal care products. These exposures occur throughout a woman’s lifetime.
- Although there are a multitude of potentially endocrine disrupting chemicals that can be studied, we have chosen to focus on three that are commonly-used in personal care products - **diethyl phthalate, methyl paraben, and triclosan**. All have some experimental evidence of hormonal activity and we suspect that they may be affecting gene expression.
- To simulate this real world experience we will be using exposure regimens in animal models that will include individual as well as combination doses at biologically relevant doses.
- The animals will be exposed to the chemicals at different developmental timepoints
- In both women diagnosed with breast cancer and the animals in our experimental models, we will assess gene expression and promoter methylation in breast and mammary tissue.



# WINDOW OF SUSCEPTIBILITY: Who Is At Risk?



THE ELDERLY  
PEOPLE WITH WEAKENED  
IMMUNE SYSTEMS  
PSYCHOLOGICAL DISTRESS



It's  
About  
Us

# **ENDOCRINE DISRUPTORS: The 5 Things You Should Ask**

- 1. What Are They?**
- 2. Why Do YOU Care?**
- 3. What is Occurring?**
- 4. Where Are They?**
- 5. What Can YOU Do?**

# What Are Endocrine Disruptors (EDs)?

- An **endocrine disruptor (ED)** is a synthetic chemical that, when absorbed into the body, either mimics or blocks hormones and **disrupts the body's normal functions.**

Suspected Endocrine Disrupting Compounds include:

- **Certain Pesticides**
- **Phenols and Alkyphenols**
- **Phthalates** (BPA and others)
- **Parabens** (butyl, -ethyl, methyl- and propyl-)
- **Metals** (cadmium, lead, mercury)
- **Pharmaceuticals** - (DES) (banned)
- **Persistent Non-Pesticide Compounds** (PCBs, PAHs, etc)
- **Other Chemicals** (PVSs, VOCs and Styrene)

# Why Should YOU Care?

**1.** **EVERYDAY**, we are exposed to hundreds of **endocrine disruptors** and **carcinogens**.

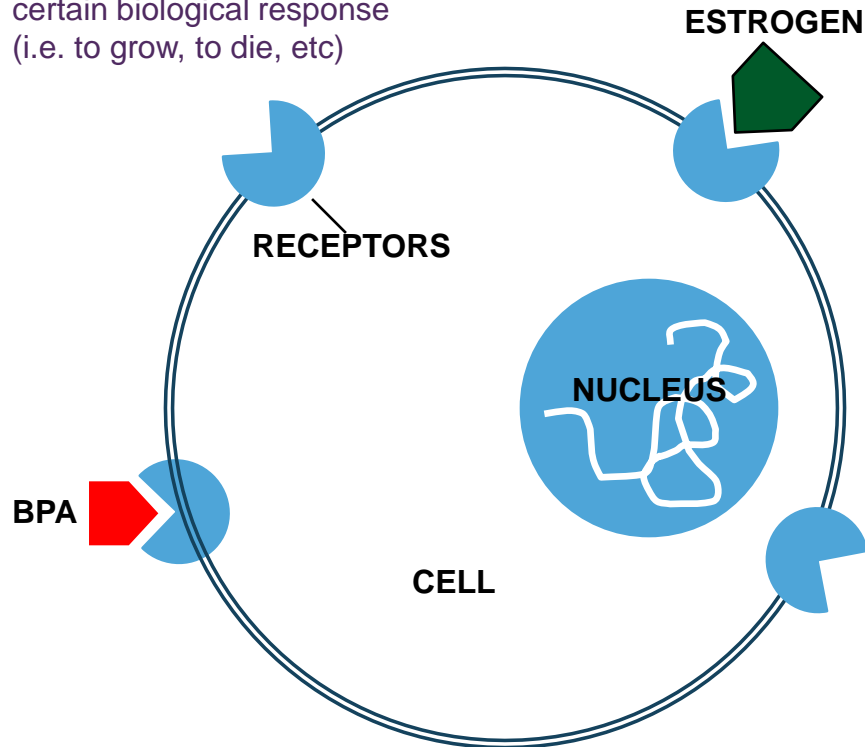
**2.** Researchers have linked endocrine disruptors with **breast, ovarian and prostate cancers** as well as **reproductive disorders**, such as endometriosis and lowered fertility (based on animal studies).

Source: National Institutes of Environmental Health Sciences (NIEHS)

# What is Occurring? How EDs Actually Affect Our Bodies

## The Normal Process:

1. Estrogen binds with its receptor
2. Estrogen and the receptor cause a certain biological response (i.e. to grow, to die, etc)



## When an ED (i.e. BPA) is Present:

1. BPA binds to and reacts with the estrogen receptor
2. BPA and receptor can cause an unnatural or potentially harmful biological response (i.e. to multiply or mutate, etc)

## Simplified (for us non-scientific types)!

Endocrine Disruptors, like natural estrogen, have a certain “key” that is recognized by our receptors which will “open the lock” and allow the ED to bind with it and react with our cells.

However, when an ED’s “wrong” key is used to “open the lock”, it can disrupt the normal endocrine system and the signals given to each cell, causing unnatural and/or potentially harmful biological responses.



Naturally Occurring Estrogen is the **RIGHT KEY** to unlock natural biological responses

Endocrine Disruptors are the **WRONG KEY**.



# Where Are They?

## Everywhere/Everyday

Endocrine disrupting chemicals are found in many products that we use in and around our bodies, homes, offices and communities such as:

- Cash register receipts, which are then recycled into things like: paper towels, tissues, paper currency and toilet paper!!!
- Household cleaning products
- Pesticide-treated fruits & vegetables, lawn and tree care
- Food/beverage storage containers and food packaging
- Cosmetics, lotions, shampoos, body wash, toothpastes, etc.
- Candles (with artificial fragrance)

# Endocrine Disruptors: Look at the products your using...



Toothbrushes



Shampoo

Anti-Bacterial Soap



Body Wash



Toothpaste



**TRICLOSAN**  
**PHTHALATES**  
(including fragrance)  
**PARABENS**



Textile Paints

Toys



Food Packaging



Deodorant



Cosmetics



Candles  
(with artificial fragrance)



Body Lotions

Facial Creams  
&



# What YOU Can Do: Step 1

## **AWARENESS:**

### 1. READ THE INGREDIENT LABELS.

(We already look at the nutrition labels for calories, fat, sodium, etc)!



### 2. Look for Triclosan, Parabens and Phthalates (“Fragrance”)





# What YOU Can Do (Right Now)!

## 10 Quick & Easy Precautionary Tips

1. **Avoid** using pesticides in and around your home.
2. **Avoid** using chemical air fresheners since many contain formaldehyde and phthalates (remember: READ THE LABELS).
3. **Avoid** smoking and choose to maintain a smoke-free environment.
4. **Avoid** foods that are char-broiled or char-grilled (grilling is OK as long as you do not allow the foods to “blacken”).
5. **Choose** organic produce whenever possible.
6. **Choose** glass, safe ceramics or safer plastics (choose plastic # 5,4,1 or 2 – all the rest are bad for you!) for storing food and beverages.
7. **Choose** cosmetics, lotions and body products that don’t contain potentially harmful ED’s like parabens, triclosan or “fragrance” (phthalates).
8. **Choose** household cleaners which are non-toxic that don’t contain warning labels that say: “Danger”, “Poison” or “Warning” or make your own instead!
9. **Choose** to advocate for the elimination of BPA in sales receipts.
10. **Choose** fabric or hemp shower curtains, instead of the plastic ones (which contain PVCs (phthalates)).

# A Final Thought...

## The Precautionary Principle

“Science is rarely 100 percent certain. So if you follow the precautionary principle, you look at all the evidence and you say maybe we don’t know everything, but there’s enough to suggest that we might want to be cautious. That’s the appropriate use of the precautionary principle.”

- Linda Birnbaum,

Director of the National Institutes

of

Environmental

Health Sciences (NIEHS).

Small changes made today, can make things safer and better for tomorrow...

## For More Information:

Huntington Breast Cancer Action Coalition Inc. – [www.hbcac.org](http://www.hbcac.org)

Great Neck Breast Cancer Coalition – [www.greatneckbcc.org](http://www.greatneckbcc.org)

Prevention Is The Cure Inc. – [www.preventionisthecure.org](http://www.preventionisthecure.org)

National Institute of Environmental Health Sciences (NIEHS) –  
[www.niehs.nih.gov](http://www.niehs.nih.gov)

National Cancer Institute (NCI) – [www.nih.gov](http://www.nih.gov)