An alliance to reduce exposure to toxic chemicals during the first 1,000 days of development
America, We Have A Problem

We are all vulnerable to the health impacts of untested and unregulated chemicals in our air, water, food and products we use every day.

85,000 registered chemicals (99.8%)

200 required by federal government to be safety-tested (0.2%)
Babies Are In Harm’s Way

While tiny brains are forming and growing rapidly during the first 1,000 days, they are being harmed by toxic “brain drain” chemicals all around them.
“Brain Drain” chemicals are all around us
“Brain drain” chemicals are present in bodies of 90% of pregnant women.
The result? Babies’ IQ Loss

- 40M: 40 million IQ points lost
- 3.4M: 3.4 million more children test as intellectually disabled
- $130B: $130 billion/year estimated cost to society
A Silent Epidemic

In fact, the exposure to toxic chemicals is so prevalent and the impacts on brain development so widespread and severe that leading doctors and scientists call it a “silent epidemic”.
Science links exposure and impact

More exposure to “brain drain” chemicals = higher incidences of ADHD, autism, behavioral problems, cognitive delays and low birth weight.

Higher Exposure = Higher Incidence

Higher exposure in low-income populations compounds other health and psychosocial disadvantages.
Approximately 1 in 6 children in the U.S. has been diagnosed with a developmental disability.
Between 1975 and 2012, the prevalence of children diagnosed with autism has increased from 1 in 5000 to 1 in 68.
## Concerned Index Summary

<table>
<thead>
<tr>
<th>Category</th>
<th>Male</th>
<th>Female: pregnant or in future</th>
<th>Female: not pregnant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>89</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>Male</td>
<td>89</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>Female: pregnant or in future</td>
<td>10</td>
<td>10</td>
<td>100</td>
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<tr>
<td>Female: not pregnant</td>
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<tr>
<td><strong>Millennials</strong></td>
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<td>100</td>
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<tr>
<td>Gen X</td>
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<td>10</td>
<td>100</td>
</tr>
<tr>
<td>Boomers</td>
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<td>10</td>
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<td>Older</td>
<td>86</td>
<td>10</td>
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<tr>
<td>White</td>
<td>97</td>
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<td>100</td>
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<tr>
<td>Other</td>
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<tr>
<td>Hispanic</td>
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</tr>
<tr>
<td>Not parent</td>
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<td>10</td>
<td>100</td>
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<td>10</td>
<td>100</td>
</tr>
<tr>
<td>Youngest child 4+</td>
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<td>West</td>
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<td>10</td>
<td>100</td>
</tr>
<tr>
<td>Midwest</td>
<td>10</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>South</td>
<td>10</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>Northeast</td>
<td>10</td>
<td>10</td>
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</tbody>
</table>

- **Northeast**
- **South**
- **Midwest**
- **West**
- **Youngest child <3**
- **Youngest child 4+**
- **Male**
- **Female: pregnant or in future**
- **Female: not pregnant**
- **Hispanic**
- **Parent**
- **Not parent**
- ** Older**
- **White**
- **Other**

**Healthier Babies, Bright Futures**
### M3 Preference Scores

<table>
<thead>
<tr>
<th>Message</th>
<th>Score</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our homes are filled with toxic chemicals that have been proven to have dangerous health effects on our families. The effects are so widespread that many doctors and scientists refer to this as a “silent epidemic.”</td>
<td>13.5</td>
<td>100</td>
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<tr>
<td>Our government has only safety tested 200 chemicals out of more than 85,000 chemicals that are on the market, making our children vulnerable to exposure to toxic chemicals.</td>
<td>13.0</td>
<td>97</td>
</tr>
<tr>
<td>Studies show that more than 90% of American women of childbearing age have toxic chemicals in their bodies that will increase the risk of brain damage and loss of intelligence in their babies.</td>
<td>12.9</td>
<td>96</td>
</tr>
<tr>
<td>Giant chemical companies are reaping huge profits from the sale of toxic chemicals that end up in our homes, food, environment and in our and our babies’ bodies.</td>
<td>10.6</td>
<td>79</td>
</tr>
<tr>
<td>Every year exposure to toxic chemicals costs the U.S. more than $130 billion in health care, social services, special education, and lost productivity.</td>
<td>10.1</td>
<td>75</td>
</tr>
<tr>
<td>Many scientists consider exposure to toxic chemicals in the home and environment to be the single greatest threat to the healthy development of babies’ brains.</td>
<td>9.4</td>
<td>70</td>
</tr>
<tr>
<td>Babies are exposed to toxic chemicals in everyday products in our homes and environment that keep them from developing to their full potential.</td>
<td>8.9</td>
<td>66</td>
</tr>
<tr>
<td>Toxic chemicals in the home and environment pose as great a threat to our babies’ brain development as exposure to lead paint.</td>
<td>8.5</td>
<td>63</td>
</tr>
<tr>
<td>Babies in the U.S. have higher levels of toxic flame retardant chemicals in their bodies than babies in any other country.</td>
<td>7.6</td>
<td>56</td>
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<tr>
<td>Exposure to toxic flame retardants in furniture has been shown to cause a loss of up to 5% of intelligence in an average child.</td>
<td>5.5</td>
<td>41</td>
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</table>

Note: The top three messages rank #1-3 for ALL important subgroups.
Healthy Babies Bright Futures Will Make a Significant Difference

To ensure that future generations have the brain power to learn, achieve and prosper.
We’re Making Progress

The nation’s top 3 furniture retailers - Ikea, Ashley Furniture and Walmart - have banned toxic flame retardants and more than 61 residential furniture brands have removed toxic flame retardants from all their products.
Moving Towards Even Greater Success

We have to build on the momentum and focus our strategies where we’ll have even greater impact.

Science-based
Data-driven
Delivering Measurable Outcomes
Focus on Big Impacts

- Reduce the number of babies and pregnant women who are affected
- Demonstrate a decline in body burdens of toxic chemicals
- Demonstrate the economic benefits of reducing exposure
Strategies for Success

- Apply emerging science and technology
- Prioritize interventions that data suggests will have the greatest results
- Track and analyze program outcomes
- Illustrate the ROI in protecting babies from toxic chemicals
- Recruit new allies
Environmental contaminants linked to adverse neurological outcomes

Well-studied
- Lead
- Methylmercury
- Polychlorinated biphenyls (PCBs)

Not as well-studied
- Organophosphate pesticides
- Polybrominated diphenyl ethers (PBDEs)
- Polycyclic aromatic hydrocarbons (PAHs)
- Arsenic
- Perchlorate
- Bisphenol A (BPA)
- Phthalates

# Environmental chemical exposures associated with neurological diseases/

<table>
<thead>
<tr>
<th>Chemical Compound</th>
<th>ADHD</th>
<th>Autism</th>
<th>Learning Disability</th>
<th>Intellectual Disability (Mental Retardation)</th>
<th>Conduct Disorders &amp; Behavioral Problems</th>
<th>Cerebral Palsy</th>
<th>Impairments in Vision and Hearing</th>
<th>Decrease in IQ</th>
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</thead>
<tbody>
<tr>
<td>Lead</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>Methylmercury</td>
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<td></td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>PCBs</td>
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<td></td>
<td></td>
<td></td>
<td>✔</td>
<td>✔</td>
<td></td>
<td>✔</td>
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<tr>
<td>Organophosphate Pesticides</td>
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<td></td>
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<td>✔</td>
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<td>PBDEs</td>
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<td>Phthalates</td>
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<td></td>
<td>✔</td>
</tr>
</tbody>
</table>

Environmental chemicals may have a significant impact on IQ at the population level

Source: Gilbert et al. (2004)
Healthy Babies Bright Futures

Bright Choices

Science into Action

Bright Cities
Bright Choices Matter

Armed with key information, families, companies and cities can make homes and environments safer.

Collectively, individual actions drive change.
Bright Choices

Inform and incentivize safer purchasing choices and actions

- Aggregate those individual choices to influence corporate decisions and move markets

- Coordinate collective action among many groups to change government and corporate policies
Bright Cities

Cities will take steps in ten action areas to protect babies from harmful chemicals during the first thousand days of development.

Healthy Babies Bright Futures will support those cities with resources and tools to reduce exposure in their communities.
Bright Cities

Bright Cities will focus on key action areas:

- Water
- Housing and indoor air quality
- Construction
- Medical Screenings
- Outdoor air quality
- Building codes
- Institutional purchasing
- Food
- Child care regulations
- Parks and playgrounds
Science into Action

- Translate what scientists know into actions that cities, families and companies can take

- Guide decision-making toward highest impact actions

- Track progress in reducing exposures to toxic chemicals
Babies need lead-free water for a bright future.

Test your tap water today.

News about lead poisoning in Flint, Michigan has left many young families worried about the safety of their own water supply. The only way to know if you have high lead in your water is to test it.
Working towards a toxic-free future for all our children.

WHO WE ARE

Healthy Babies Bright Futures (HBBF) is an alliance of scientists, nonprofit organizations and donors working to create and support initiatives that measurably reduce exposures to neurotoxic chemicals in the first thousand days of development. The “Lead in Water Action Kit” is a foundational piece in HBBF’s work to reduce children’s exposure to neurotoxic chemicals.

ABOUT HBBF

DR. MARC EDWARDS AND THE VIRGINIA TECH LABORATORY

Healthy Babies Bright Futures is teaming up with Dr. Marc Edwards - the scientist who helped identify and expose unsafe lead levels in Flint - and his Virginia Tech laboratory to offer affordable home water testing to families. See more information about Marc Edwards, his Virginia Tech lab and the extraordinary group of Virginia Tech engineering students who created the Flint Water Study.
Get Your Lead in Water Action Kit

Protect yourself and your family from toxic lead in tap water with a simple kit backed by sound science.

Your Kit does 3 things:

1. Tests your water for lead
2. Provides you with detailed results based on high quality laboratory analysis at Virginia Tech
3. Gives you a clear set of customized actions you can take to reduce exposure to you and your family.

Pay the amount you can afford

<table>
<thead>
<tr>
<th></th>
<th>$12</th>
<th>$20</th>
<th>$30</th>
</tr>
</thead>
</table>

Cover the cost

Actual cost for kit materials, testing and shipping is $65.

<table>
<thead>
<tr>
<th></th>
<th>$65</th>
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</table>

Get a kit and add a kit donation

Pay the amount to receive your kit and provide additional kits to households in need

<table>
<thead>
<tr>
<th>1 Kit</th>
<th>2 Kits</th>
<th>5 Kits</th>
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</thead>
<tbody>
<tr>
<td>$130</td>
<td>$195</td>
<td>$390</td>
</tr>
</tbody>
</table>

+ Other amount

SELECT

We're offering 1,000 affordable kits while supplies last.

We want to give every household the option to test their water. Each test costs Healthy Babies Bright Futures $65 for the kit, laboratory analysis and shipping (water is heavy). We are committed to providing at least 1,000 kits but will offer more if funding is available. Please pay what you can and consider donating to cover the cost of another kit. 100% of HBBF's proceeds from the purchased kits cover the cost of the test kits, analysis, results reporting and shipping and also underwrite the costs for those kits donated or sold below the $65 price point. Together we can reach those most at risk: women who are pregnant or trying to conceive, families with children under age 2 and residents in low-
The Solution

Healthy Babies Bright Futures is working in a variety of ways to help reduce exposure to toxic chemicals and the resulting damage to developing babies' brains. This problem can be solved if we all take action both as individuals and together as a movement of concerned citizens. That means:

Taking action in your own home
Reduce the sources of exposure in our own homes and in our communities.

Taking Action Together
Ensure that companies and our government do their part to protect us from these toxic chemicals.
Bright Future Tools: Coming Soon

Giving your baby a great start takes planning. We'll help make it easy.

**HEALTHY BABY ACTION PLANNER**
Learn the most important steps to take as new or expectant parents to reduce exposure to harmful chemicals

**SAFE PRODUCT FINDER**
Search for safe products free of the toxic chemicals that can harm your baby during pregnancy and parenthood.

**BRIGHT CITY INVENTORY**
Technical assistance for cities to reduce sources of and exposures to brain drain chemicals in your communities.

NOTIFY ME WHEN THESE TOOLS BECOME AVAILABLE

[Email address] [Submit]
In 10 years, we will protect millions of children, ensuring that they have the developmental and intellectual ability to prosper and participate in productive communities.
Sources:

Slide 2:

U.S. Environmental Protection Agency. 2015. About the TSCA Chemical Substance Inventory.

Slide 5:
University of California San Francisco, Program on Reproductive Health & the Environment, T. Woodruff & L. Rubenstein

Slide 6:


Slide 9:
Cited in:

Slide 10:
Autism Speaks. 2010. What is causing the increase in autism prevalence?