



BODY BURDEN

FACT SHEETS ON HEALTH AND ENVIRONMENT IN WASHINGTON

INTRODUCTION

Virtually everyone has toxic chemicals in his or her body. Contaminants can be present in blood, hair, breast milk, bone, urine, fat and other tissues, depending on the characteristics of individual chemicals. Levels of toxic chemicals in human tissues provide a measure of our exposure to these substances.

There is very little information on levels of toxic chemicals in human tissues in Washington state. The following information summarizes what's available.

BODY BURDEN IN WASHINGTON STATE

A recent study on "Pollution in People" found that all ten people tested had at least 26 and as many as 39 toxic chemicals in their bodies.¹ The toxic chemicals included PCBs and DDT (now banned), pesticides, phthalates (plasticizers and fragrance carriers), polybrominated flame retardants, Teflon chemical, mercury, lead and arsenic.

- **PBDEs**
 - In 2004, the flame retardants, polybrominated diphenyl ethers (PBDEs), were found in the breast milk of northwest mothers at a concentration of 50 parts per billion.²
 - The average level of bromine-based fire retardants found in one study of American mothers' breast milk was 75 times the average found in recent European studies.³
- **Lead**
 - In 5% of the cases reported to the Washington State Adult Blood Lead Registry, high blood lead levels were found.⁴ More than half of those cases came from King County, followed by Pierce, Snohomish and Yakima Counties.
 - 8.4% of children studied in Yakima had high blood lead levels, compared with only 1.2% of children in Bellingham, Seattle, Spokane and Tacoma.⁵
- **Pesticides**
 - All children in Seattle probably have measurable levels of organophosphate pesticides in their urine.⁶
 - Eating organic foods reduced Seattle area children's exposure to organophosphorous pesticides from above to below the Environmental Protection Agency's current guidelines.⁷
 - Children whose parents worked as pesticide applicators had higher levels of pesticides in their urine than did Seattle children and those living on farms.⁸

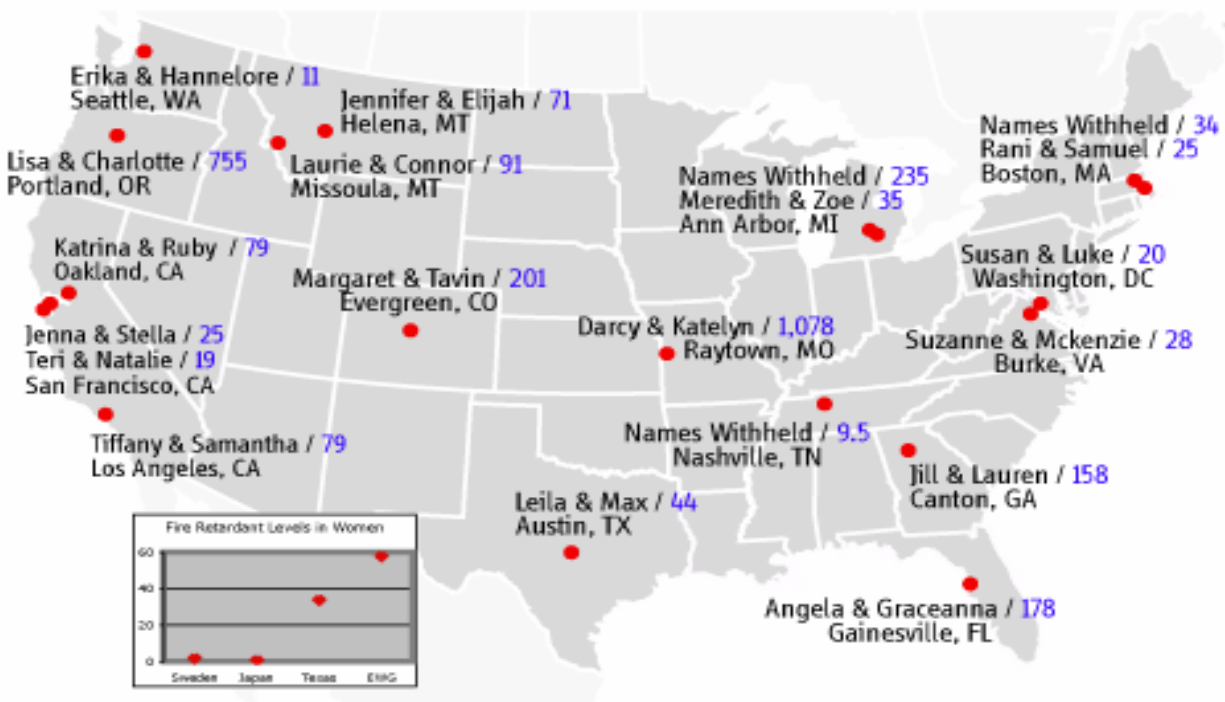
COMPARING WASHINGTON STATE NATIONALLY

Children in Washington have lower blood lead levels than children in many other states,⁹ probably because there is less old housing.

The levels of PBDEs in the breast milk of mothers in Washington and the rest of the Pacific Northwest are comparable to the rest of North America. However, they were 20 to 40 times higher than levels in Sweden and Japan.¹⁰

A nationwide study by the Environmental Working Group (EWG) measured levels of PBDEs in the breast milk of women around the US. The Washington woman's level, 11 parts per billion, is lower than many of the other women tested in this study.¹¹

EWG BREAST MILK STUDY PARTICIPANTS & THEIR BABIES



Numbers indicate total PBDEs found in participant's breast milk. Units are parts per billion, lipid.

SOURCES

- 1 <http://www.pollutioninpeople.org/results>
- 2 http://www.northwestwatch.org/toxics/PBDEs_in_NW.pdf
- 3 <http://www.ewg.org/reports/mothersmilk/es.php>
- 4 <http://www.lni.wa.gov/Safety/Research/OccHealth/Lead/default.asp>
- 5 <http://www.doh.wa.gov/Topics/WALeasScreenRecommend.doc>
- 6 <http://www.ehponline.org/members/2001/109p299-303lu/lu-full.html>
- 7 http://www.ewg.org/pdf/20021122_UWstudy.pdf
- 8 <http://www.ehponline.org/members/2005/8022/8022.pdf>
- 9 <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm4950a3.htm#tab1>
- 10 http://www.northwestwatch.org/toxics/PBDEs_in_NW.pdf
- 11 <http://www.ewg.org/reports/mothersmilk/es.php>