

Quick Facts Regarding Chemical Exposure in Children via Food Products

This document was originally produced in February of 2005.

All sources of the below data are attached. Please reference those sources for further information.

The majority of this data comes from U.S. Government agencies and their respective reports.

- According to the Environmental Protection Agency (EPA) and the National Academy of Sciences, *standard chemicals are up to ten times more toxic to children than to adults*, depending on body weight. This is due to the fact that children take in more toxic chemicals relative to body weight than adults and have developing organ systems that are more vulnerable and less able to detoxify toxic chemicals. (ii,iii)
- According to EPA's Guidelines for Carcinogen Risk Assessment, children receive 50% of their lifetime cancer risks in the first two years of life. (v)
- According to the Food and Drug Administration, half of produce currently tested in grocery stores contains measurable residues of pesticides. Laboratory tests of eight industry-leader baby foods reveal the presence of 16 pesticides, including three carcinogens. (x,ix)
- In blood samples of children aged 2 to 4, concentrations of pesticide residues are six times higher in children eating conventionally farmed fruits and vegetables compared with those eating organic food. (iv)
- According to the U.S. Department of Health and Human Services, organophosphate pesticides (OP) are now found in the blood of 95% of Americans tested. OP levels are twice as high in blood samples taken from children than in adults. Exposure to OPs is linked to hyperactivity, behavior disorders, learning disabilities, developmental delays and motor dysfunction. OPs account for half of the insecticides used in the U.S.(vi, vii, xvi)
- The Centers for Disease Control reports that one of the main sources of pesticide exposure for U.S. children comes from the food they eat. (vi)
- The U.S. Department of Agriculture strictly prohibits mixing different types of pesticides for disposal, due to the well known process of the individual chemicals combining into new highly toxic chemical compounds. There are no regulations regarding pesticide mixture on a consumer product level, even though, in a similar manner, those same individual pesticide residues interact and mix together into new chemical compounds when conventional multiple ingredient products are made. 62% of food products tested contain a measurable mixture of residues of at least three different pesticides. (xi,xii,xiii,xiv,xv)
- Currently, over 400 chemicals can be regularly used in conventional farming as biocides to kill weeds and insects. For example, apples can be sprayed up to 16 times with 36 different pesticides. None of these chemicals are present in organic foods. (i)
- Over 300 synthetic food additives are allowed by the FDA in conventional foods. None of these are allowed in foods that are USDA certified organic.

Sources for: “Quick Facts Regarding Chemical Exposure in Children via Food Products

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- iii) National Research Council, National Academy of Sciences, Pesticides in the Diets of Infants and Children, National Academy Press, Washington, DC, 1993: 184-185.
- iv) Curl CL , RA Fenske and K Elgethun (2003) Organophosphorus pesticide exposure of urban and suburban pre-school children with organic and conventional diets, Environmental Health Perspectives, 111 (3) p. 377 – 382.
- v) U.S. EPA. 2003. Draft Final Guidelines for Carcinogen Risk Assessment. EPA/630/P-03/001A Washington, DC. <http://epa.gov/ncea/raf/cancer2003.htm>. (accessed July 9,2004)
- vi) Department of Health and Human Services, Centers for Disease Control, *National Report on Human Exposure to Environmental Chemicals*, March 2003, <http://www.cdc.gov/exposurereport/2nd/>
- vii) Saulk Institute, *Loss of neuropathy target esterase in mice linking organophosphate exposure to hyperactivity*. Journal Nature Genetics, March 2003
- viii) The Royal Society (2000) Endocrine disrupting chemicals, June 2000 <http://www.royalsoc.ac.uk/ files/statfiles/document-111.pdf>
- ix) Cook, Kenneth A., et al., Pesticides in the U.S. Food Supply (February 1995), <http://www.ewg.org/reports/fruit/Contents.html>
- x) CFSAN FDA Office of Plant and Dairy Foods; FDA Pesticide Residue Monitoring Program 1994-2002 <http://vm.cfsan.fda.gov/~dms/pesrpts.html>
- xi) Porter et al (1993) *Groundwater pesticides: interactive effects of low concentrations of carbamates aldicarb and methomyl and the triazine metribuzin on thyroxine and somatrophin levels in white rats*, Journal of Toxicology and Environmental Health, (40) p. 15 – 34.
- xii) Boyd et al (1990) *Behavioural and neurochemical changes associated with chronic exposure to low level concentrations of pesticide mixtures*, Journal of Toxicology and Environmental Health, (30) p. 209 – 221.
- xiii) Porter et al (1999) *Endocrine immune and behavioural effects of aldicarb (carbamate), atrazine (triazine) and nitrate (fertiliser) mixtures at groundwater concentrations*, Toxicology and Industrial health, (15) p. 133 – 150.
- xiv) Thiruchelvam M et al (2000) *The nigrostriatal dopaminergic system as a preferential target of repeated exposures to combined paraquat and maneb: implications for Parkinson's Disease*, Journal of Neuroscience, 20 (24) p. 2907 – 9214.
- xv) Pesticide Data Program (2000-2002), Baker et al (2000) Food Additives, Vol.19, No.5, 427-446
- xvi) Environmental Protection Agency: America's Children and the Environment (March 2003) www.epa.gov/envirohealth/children/