

This chart shows the health effects and characteristics of exposures to the toxicants listed. Learning disabilities include dysfunctions in listening, speaking, reading, writing, spelling, or calculations. Only developmental, learning, or behavioral effects of toxicants, or physical impairments that lead to them, are listed.

**Toxicant** **Health Effects/Characteristics**

H= Human studies, A= Animal Studies

<i><b>Metals</b></i>	
<b>Cadmium</b> H, A	Learning disabilities Decreased IQ Motor dysfunction Hyperactivity Hypoactivity
<b>Lead</b> H, A	Learning disabilities IQ deficit Attention deficit Impulsivity Violence Hyperactivity Aggression
<b>Manganese</b> H, A	Brain damage Motor dysfunction Compulsive behavior Memory impairment Hyperactivity Learning disabilities Attention deficit
<b>Mercury</b> H, A	Visual impairment Learning disorders Attention deficit Motor dysfunction Memory impairment (minimal) <i>At higher levels:</i> Smaller brain size Cellular distortions in brain Mental retardation
<i><b>Solvents</b></i>	
<b>Ethanol (Alcohol)</b> H, A	Learning disabilities Attention deficits Memory impairment Behavioral disorders Eating and sleeping disorders Lower brain weight Craniofacial, limb, and cardiovascular abnormalities associated with various growth and developmental delays Mental retardation

Styrene A	Decreased activity Decreased avoidance behavior <i>In conjunction with dietary protein deficiency:</i> Lower brain weight Hyperactivity
Toluene H, A	Learning disabilities Speech deficits Motor dysfunction Craniofacial abnormalities
Trichloroethylene A	Increased exploratory behavior Hyperactivity
Xylene A	Motor dysfunction Learning disabilities Memory impairment Decreased brain weight
<b><i>Pesticides</i></b>	
Organochlorines DDT - A Mixture – H	Hyperactivity Decreased stamina Decreased coordination Decreased memory Decreased ability to draw familiar objects
Organophosphates (including DFP, chlorpyrifos [Dursban], diazinon) A	Developmental delays Hyperactivity Behavioral disorders Motor dysfunction
Pyrethroids (including bioallethrin, deltamethrin, cypermethrin) A	Hyperactivity
<b><i>Other</i></b>	
Nicotine H, A	Hyperactivity Learning disabilities Developmental delays in cognitive functions
Dioxins A	Learning disabilities
PCBs H, A	Learning disabilities Attention deficit Memory impairment Hyperactivity Psychomotor dysfunction
Fluoride H, A	Hyperactivity Decreased IQ (ecologic studies)

**Source:** Chart information is synthesized from Chapter 6 of *In Harm's Way: Toxic Threats to Child Development*, Greater Boston Physicians for Social Responsibility, May 2000. Please see this chapter for references to studies on these chemicals.