Summary of Health Effects
Toluene can affect how human babies develop. In people who work with or who abuse toluene, it can affect the heart and blood vessels, brain and nervous system, reproductive system, and how unborn babies develop. In animals, toluene can affect the brain and nervous system, reproductive system, kidneys, and how babies develop.

How is toluene used?
Toluene is widely used as a solvent in paints, coatings, adhesives, inks and cleaning agents. It is found in common household products such as paints, adhesives, synthetic fragrances, and nail polish. Toluene has also been found in a variety of children’s products such as clothing and toys.

Toxicity: What are its health effects?
Toluene is listed as a developmental toxicant on California’s Proposition 65 list.

Animals exposed to toluene showed various neurological, reproductive and developmental effects or reduced body weight gain in acute inhalation and dermal exposure studies. A National Toxicology Program study on the effects of toluene over 13 weeks found hepatocellular hypertrophy (increase in the size of liver cells) in rats that survived the full 13 weeks, and kidney disease in those that did not survive.

Symptoms such as fatigue, muscle weakness, confusion, impaired coordination, enlarged pupils, nausea, mental confusion and coma have been noted in humans who have abused or have been occupationally or accidentally exposed to toluene. Case reports show cardiovascular, neurological, developmental and reproductive effects in humans. Human babies born to mothers who have abused toluene may experience perinatal death, preterm delivery, small brain size at birth, low birth weight, and neurodevelopmental delays.

Exposure: How can a person come in contact with it?
A person can come in contact with toluene by breathing it in, drinking contaminated water, eating contaminated food and from skin contact.

Toluene has been detected in consumer products, indoor air and dust, drinking water, and the natural environment.

High concentrations of toluene have been found in indoor air, which may be due to the use of toluene in common household products such as paints, adhesives, synthetic fragrances, and nail polish.
Toluene has been detected in blood, urine, breast milk and fat tissue by biomonitoring studies including the 2015 National Health and Nutrition Examination Survey (NHANES) and Health Canada biomonitoring.12,13

Toluene is a high production volume chemical and is listed on the Environmental Protection Agency (EPA) Toxic Release Inventory.14 The Danish EPA has detected toluene in children’s products including infant jackets, mittens, school supplies, tents, and slimy and wooden toys.15

References

4. California Environmental Protection Agency, Office of Environmental Health Hazard Assessment. List of chemicals known to the state to cause cancer or reproductive toxicity. Retrieved from oehha.ca.gov/proposition-65/proposition-65-list

This fact sheet is for the Chemical Disclosure Program for Children’s Products.

