**Hazard to children:** acute poisoning, potential developmental effects, immunotoxic, endocrine disruptor; later in life breast cancer, male reproductive problems, Parkinson’s disease

**Uses:** synthetic pyrethroid insecticide. Related substances: alpha-, beta- and zeta-cypermethrin.

**Residues:** in cord blood, newborn’s meconium, breast milk, house dust, food, drinking water.¹²

**Acute toxicity:** moderately toxic, neurotoxin. Symptoms include: dizziness, nausea, headaches, burning skin, tingling, fatigue, anorexia, muscle twitching, seizures, coma. Asthma symptoms in susceptible people.⁵ Death from contaminated food has occurred.⁴ Children have been poisoned in Nicaragua¹ and Mexico.⁵ Common cause of poisoning of farmers in Tanzania.⁶

**Chronic toxicity:** most frequent child chronic pesticide exposure in UK.⁷ Chronic exposure causes dysregulation of energy metabolism in mice.⁸

**Neurological:** behavioural effects, delayed mental development;⁹¹⁰ altered dopamine activity in brain (mice);¹¹ implicated in Parkinson’s disease.¹¹¹²

**Cancer:** US EPA possible human carcinogen, based on tumours in rodents. “Complete carcinogenic as well as tumour initiating and promoting potential” in studies on mice;¹³ breast cancer risk.¹⁴

**Genotoxicity:** genotoxic in human cells.¹⁵¹⁶

**Endocrine disruption:** oestrogenic causing breast cancer cells to grow;¹⁷¹⁸ disrupts testosterone production (mice);¹⁹²⁰ anti-progestagenic (cow).²¹

**Reproduction:** significant adverse effects on male rodent reproductive system,²² reduces sperm production²² and motility,²³ abnormal sperm (rabbits).²⁴

**Immune:** suppresses immune system;²

**Environmental effects:**

**Aquatic:** highly toxic to fish, algae, aquatic invertebrates;² fish kills in US.³

**Terrestrial:** highly toxic to bees,² beneficial insects, earthworms.³ Secondary poisoning of birds from insects.³

**Environmental fate:** Severe marine pollutant; groundwater and surface pollutant.²⁵ Persistent in soil;² Potential for bioaccumulation.²
References:


