# **Contaminants In Infant Formula**

## You'll never find these listed on the label!!

#### Aluminum

<5-45 ug/l in breast milk 557-2,346 ug/l in soy formula Aluminum interferes with cellular metabolic processes and information transfer from DNA

# Silicon

55.45ng/ml in milk of mothers with silicone implants 51.05ng/ml in milk of mothers without implants 746-13,811 ng/ml in 26 brands of formula tested for silicon The effect of large amounts of silicon on an infant is unknown

## <u>Cadmium</u>

Cadmium is a highly toxic metal that can cause kidney damage in high amounts. Neurotoxic effects such as psychomotor disturbances, behavioral and cognitive disorders have been demonstrated in animal models with low-dose exposure. Cadmium levels can be 6 times higher in soy formula compared to milk- based formula. Cadmium is also found in cereals with the exposure of dietary cadmium from weaning diets up to 12 times higher in children fed infant formula compared to breast milk.

#### Genetically engineered corn and soy

Detected in Alsoy (Carnation/Nestle), Similac Neocare (Ross Labs), Isomil (Ross Labs), Prosobee (Mead Johnson)

Transgenic ingredients pose the risk of introducing novel toxins, new allergens, and increased antibiotic resistance to infants. The FDA does not require labeling of genetically engineered foods, so parents will remain unaware that their baby is consuming transgenic ingredients

## MSG (processed free glutamic acid and processed free aspartic acid)

These are known neurotoxins found in a number of infant formulas. Because the blood brain barrier is not fully developed in infants, these neurotoxins are more accessible to the infant brain than the adult brain. The highest levels of these neurotoxins were found in hypoallergenic formulas. Because no studies have been done on the long term outcomes of infants fed on hypoallergenic formulas it is unknown if they will exhibit more learning disabilities at school age, and/or more endocrine disorders such as obesity, and reproductive disorders, later in life.

## Phytoestrogens

Phytoestrogens are endocrine disruptors found in soy formulas. Infants fed soy formula can have circulating phytoestrogen concentrations that are 13,000-22,000 times higher than normal levels in early life. These bioactive compounds can create steroid hormone imbalance, compete with enzymes that metabolize steroids, drugs and xenobiotics, and can influence gonadal function. Genistein can be carcinogenic if exposure occurs during critical periods of differentiation. Soy formula has been linked to premature thelarche (breast development in infants and girls under eight years of age). Phytoestrogens (isoflavones) also act on the thyroid gland. They are well known inducers of goiter and anti-thyroid agents. They act against the thyroid by inhibition of thyroid peroxidase. Children with autoimmune thyroid disease were three times more likely to have been fed soy formula in infancy.

# Phthalates and Bisphenol-A

These are endocrine disrupting industrial chemicals. Phthalates are used as plasticisers and are testicular toxins as well as estradiol imitators.

Bisphenol-A is used in the production of polycarbonate plastics and has been found in plastic baby bottles. It can leach from the container and has been known to be estrogenic since 1938. Bisphenol-A resins are used as lacquers to coat metal products such as food cans. With a high affinity for fatty products, it has been shown to leach into the content of cans during the autoclaving process, including cans of milk based infant formula.

#### Contaminants in water used to reconstitute concentrated and powdered formula

## Lead

Lead in water used to reconstitute formula can cause elevations in blood lead levels if used from the hot water tap or boiled. Boiling concentrates lead. There is a 6 point IQ drop for every 10ug increase in blood lead levels.

## <u>Nitrates</u>

Infants fed formula reconstituted with nitrate-contaminated water are at risk for potentially fatal methemoglobinemia. Nitrates are converted to nitrites by the baby resulting in hemoglobin being converted to methemoglobin that cannot bind molecular oxygen. This risk increases if babies under six months are also fed baby food with high concentrations of nitrates such as green beans and bananas.

# Atrazine

Atrazine is a weed killer that causes mammary and uterine cancer in rats. In the cities and towns with the worst tap water contamination, formula-fed babies who consume reconstituted formula would receive a lifetime dose of this chemical in the first four months of their lives.

## **Bacteria**

Significant bacterial contamination can occur during home preparation of powdered infant formula. Reconstituted formula stored in the refrigerator shows increasing bacterial counts over time.