

Cadmium and compounds
Cd
[CAS No. 7440-43-9]
Reproductive toxicant: Group 1

Several epidemiology studies have shown a negative correlation between urinary cadmium (Cd) concentrations of mothers and the birth weights of their children¹⁻³). The elevation of Cd concentrations in umbilical cord blood of mothers was significantly associated with decreased height, weight, and head circumference of their children at 3 years old⁴). No effects on fertility of male workers were reported⁵). Many animal studies have shown male and female reproductive organ toxicity, teratogenicity, and developmental toxicity of Cd, including fetal malformation and death, in several experimental animals^{6,7}). Based on this evidence, Cd is classified as a Group 1 reproductive toxicant.

References

- 1) Nishijo M, Nakagawa H, Honda R, et al. Effects of maternal exposure to cadmium on pregnancy outcome and breast milk. *Occup Environ Med* 2002; 59: 394–6; discussion 397.
- 2) Kippler M, Tofail F, Gardner R, et al. Maternal cadmium exposure during pregnancy and size at birth: a prospective cohort study. *Environ Health Perspect* 2012; 120: 284–9.
- 3) Shirai S, Suzuki Y, Yoshinaga J, et al. Maternal exposure to low-level heavy metals during pregnancy and birth size. *J Environ Sci Health A* 2010; 45: 1468–74.
- 4) Lin CM, Doyle P, Wang D, et al. Does prenatal cadmium exposure affect fetal and child growth? *Occup Environ Med* 2011; 68: 641–6.
- 5) Gennart JP, Buchet JP, Roels H, et al. Fertility of male workers exposed to cadmium, lead, or manganese. *Am J Epidemiol* 1992; 135: 1208–19.
- 6) WHO. Cadmium. *Environmental Health Criteria* 1992; 134.
- 7) Thompson J, Bannigan J. Cadmium: toxic effects on the reproductive system and the embryo. *Reprod Toxicol* 2008; 25: 304–15.