



Toxics

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Cadmium Sources and Toxicity

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Cadmium (Cd) is an environmental toxicant of continuing public health concern worldwide, because total diet studies have shown that Cd is present in virtually all foodstuffs. Consequently, foods that are frequently consumed in large quantities, such as rice, potatoes, wheat, leafy salad vegetables, and other cereal crops, are the most significant dietary Cd sources. Moreover, Cd has chemical propensities that confer the potential to interfere with the physiological functions of calcium and zinc. Evidence of a wide range of diverse, toxic effects of Cd is increasingly apparent. In this collection, environmental Cd exposure is linked to an increased risk of chronic kidney disease that is known to be a cause of morbidity and mortality worldwide. Cd is also implicated in an early onset of menarche and deaths from cancer, especially in the uterus, kidney, and urinary tract. Moreover, Cd-induced kidney injury is replicated in Sprague Dawley rats, as is Cd-induced periodontal disease. Experimental studies suggest that the development of kidneys in fetuses and the function of insulin-producing cells may be adversely affected by Cd and that metformin, an anti-diabetic drug, is ineffective in Cd-intoxicated Wistar rats.

